

SYBASE®

Reference Manual: Procedures

**Adaptive Server® Enterprise**

15.5

DOCUMENT ID: DC36273-01-1550-01

LAST REVISED: November 2009

Copyright © 2009 by Sybase, Inc. All rights reserved.

This publication pertains to Sybase software and to any subsequent release until otherwise indicated in new editions or technical notes. Information in this document is subject to change without notice. The software described herein is furnished under a license agreement, and it may be used or copied only in accordance with the terms of that agreement.

To order additional documents, U.S. and Canadian customers should call Customer Fulfillment at (800) 685-8225, fax (617) 229-9845.

Customers in other countries with a U.S. license agreement may contact Customer Fulfillment via the above fax number. All other international customers should contact their Sybase subsidiary or local distributor. Upgrades are provided only at regularly scheduled software release dates. No part of this publication may be reproduced, transmitted, or translated in any form or by any means, electronic, mechanical, manual, optical, or otherwise, without the prior written permission of Sybase, Inc.

Sybase trademarks can be viewed at the [Sybase trademarks page](http://www.sybase.com/detail?id=1011207) at <http://www.sybase.com/detail?id=1011207>. Sybase and the marks listed are trademarks of Sybase, Inc. ® indicates registration in the United States of America.

Java and all Java-based marks are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Unicode and the Unicode Logo are registered trademarks of Unicode, Inc.

IBM and Tivoli are registered trademarks of International Business Machines Corporation in the United States, other countries, or both.

All other company and product names mentioned may be trademarks of the respective companies with which they are associated.

Use, duplication, or disclosure by the government is subject to the restrictions set forth in subparagraph (c)(1)(ii) of DFARS 52.227-7013 for the DOD and as set forth in FAR 52.227-19(a)-(d) for civilian agencies.

Sybase, Inc., One Sybase Drive, Dublin, CA 94568.

# Contents

<b>About This Book .....</b>	<b>xi</b>
<b>CHAPTER 1</b>	<b>System Procedures..... 1</b>
Introduction to system procedures .....	1
Return values for system procedures.....	2
Permissions on system procedures .....	2
Auditing system procedures .....	3
Executing system procedures .....	3
Entering parameter values .....	4
Messages.....	5
System procedure tables .....	5
List of system procedures .....	5
sp_activeroles .....	17
sp_add_qpgroup .....	19
sp_add_resource_limit .....	20
sp_add_time_range .....	25
sp_addalias .....	28
sp_addauditrecord .....	30
sp_addauditable .....	32
sp_addengine.....	34
sp_addexclass .....	36
sp_addextendedproc.....	38
sp_addexternlogin .....	40
sp_addgroup .....	43
sp_addlanguage.....	44
sp_addlogin .....	47
sp_addmessage .....	53
sp_addobjectdef .....	56
sp_addremotelogin.....	59
sp_addsegment.....	62
sp_addserver .....	64
sp_addthreshold.....	68
sp_addtype.....	73
sp_addumpdevice .....	77

sp_adduser .....	79
sp_altermessage .....	81
sp_audit.....	83
sp_autoconnect.....	90
sp_autoformat .....	92
sp_bindcache .....	97
sp_bindefault.....	101
sp_bindexeclass.....	104
sp_bindmsg.....	107
sp_bindrule.....	109
sp_cacheconfig .....	111
sp_cachestrategy .....	121
sp_changedbowner.....	124
sp_changegroup .....	126
sp_checknames .....	128
sp_checkreswords .....	131
sp_checksourc.....	144
sp_chgattribute.....	146
sp_cleanpwdchecks .....	152
sp_clearpsex.....	153
sp_clearstats .....	155
sp_client_addr.....	157
sp_clusterlockusage.....	159
sp_cluster .....	160
sp_cmp_all_qplans .....	183
sp_cmp_qplans .....	186
sp_commonkey .....	188
sp_companion.....	190
sp_compatmode.....	194
sp_configure.....	195
sp_copy_all_qplans.....	203
sp_copy_qplan .....	205
sp_countmetadata.....	206
sp_cursorinfo.....	208
sp_dbextend.....	211
sp_dboption.....	219
sp_dbrecovery_order .....	229
sp_dbremap .....	232
sp_defaultloc .....	233
sp_deletesmobj.....	236
sp_depends.....	238
sp_deviceattr .....	244
sp_diskdefault .....	246
sp_displayaudit .....	248

sp_displaylevel.....	252
sp_displaylogin.....	254
sp_displayroles .....	261
sp_downgrade.....	263
sp_dropalias.....	264
sp_drop_all_qplans.....	266
sp_drop_qpgroup .....	267
sp_drop_qplan .....	268
sp_drop_resource_limit.....	269
sp_drop_time_range .....	273
sp_dropdevice.....	274
sp_dropengine .....	275
sp_dropexclass .....	277
sp_dropextendedproc .....	278
sp_dropexternlogin.....	279
sp_dropglockpromote.....	281
sp_dropgroup .....	282
sp_dropkey.....	283
sp_droplanguage .....	285
sp_droplogin.....	286
sp_dropmessage.....	288
sp_dropobjectdef.....	289
sp_dropremotelogin .....	291
sp_droprowlockpromote .....	293
sp_dropsegment .....	295
sp_dropserver .....	297
sp_dropthreshold .....	299
sp_droptype .....	300
sp_dropuser .....	301
sp_dumpoptimize .....	303
sp_encryption.....	309
sp_engine.....	320
sp_estspace .....	324
sp_export_qpgroup .....	329
sp_extendsegment.....	331
sp_extengine.....	333
sp_extrapwdchecks.....	334
sp_familylock.....	335
sp_find_qplan.....	338
sp_fixindex .....	340
sp_flushstats .....	343
sp_forceonline_db.....	344
sp_forceonline_object .....	346
sp_forceonline_page.....	348

sp_foreignkey.....	350
sp_freedll.....	352
sp_getmessage.....	353
sp_grantlogin.....	355
sp_ha_admin.....	357
sp_help.....	359
sp_help_resource_limit.....	367
sp_help_qpgroup.....	370
sp_help_qplan.....	372
sp_helpapptrace.....	374
sp_helppartition.....	375
sp_helpcache.....	379
sp_helpcomputedcolumn.....	381
sp_helpconfig.....	382
sp_helpconstraint.....	387
sp_helpdb.....	391
sp_helpdevice.....	395
sp_helpextendedproc.....	398
sp_helpexternlogin.....	400
sp_helpgroup.....	402
sp_helpindex.....	404
sp_helpjava.....	407
sp_helpjoins.....	410
sp_helpkey.....	412
sp_helplanguage.....	414
sp_helplog.....	416
sp_helpobjectdef.....	417
sp_helpremotelogin.....	419
sp_helpprotect.....	420
sp_helpsegment.....	425
sp_helpserver.....	430
sp_helpsort.....	431
sp_helptext.....	433
sp_helpthreshold.....	439
sp_helpuser.....	440
sp_hidetext.....	442
sp_import_qpgroup.....	444
sp_indsuspect.....	446
sp_jreconfig.....	447
sp_ldapadmin.....	459
sp_listener.....	467
sp_listsuspect_db.....	471
sp_listsuspect_object.....	472
sp_listsuspect_page.....	474

sp_lmconfig .....	475
sp_lock .....	479
sp_locklogin .....	484
sp_logdevice .....	487
sp_loginconfig .....	490
sp_logininfo .....	492
sp_logiosize .....	494
sp_logintrigger .....	497
sp_maplogin .....	499
sp_metrics .....	500
sp_modify_resource_limit .....	502
sp_modify_time_range .....	505
sp_modifylogin .....	507
sp_modifystats .....	515
sp_modifythreshold .....	518
sp_monitor .....	522
sp_monitorconfig .....	530
sp_object_stats .....	538
sp_options .....	541
sp_passthru .....	550
sp_password .....	553
sp_passwordpolicy .....	556
sp_pciconfig .....	566
sp_placeobject .....	570
sp_plan_dbccdb .....	572
sp_poolconfig .....	575
sp_post_xpload .....	581
sp_primarykey .....	583
sp_processmail .....	585
sp_procxmode .....	588
sp_querysmobj .....	591
sp_recompile .....	593
sp_refit_admin .....	595
sp_remap .....	597
sp_remoteoption .....	599
sp_remotesql .....	601
sp_rename .....	604
sp_rename_qpgroup .....	607
sp_renamedb .....	608
sp_reportstats .....	611
sp_revokelogin .....	613
sp_role .....	614
sp_sendmsg .....	616
sp_serveroption .....	618

sp_set_qplan .....	624
sp_setlangalias .....	626
sp_setpglockpromote .....	627
sp_setpsexec .....	630
sp_setrowlockpromote .....	632
sp_setsuspect_granularity .....	635
sp_setsuspect_threshold .....	638
sp_setup_table_transfer .....	640
sp_show_options .....	641
sp_showcontrolinfo .....	642
sp_showexeclass .....	644
sp_showplan .....	646
sp_showpsexec .....	648
sp_spaceusage .....	650
sp_spaceused .....	663
sp_ssladmin .....	666
sp_syntax .....	671
sp_sysmon .....	673
sp_tab_suspectptn .....	680
sp_tempdb .....	681
sp_tempdb_markdrop .....	690
sp_thresholdaction .....	691
sp_tran_dumpable_status .....	693
sp_transactions .....	694
sp_unbindcache .....	700
sp_unbindcache_all .....	703
sp_unbinddefault .....	704
sp_unbindexeclass .....	706
sp_unbindmsg .....	708
sp_unbindrule .....	709
sp_version .....	712
sp_volchanged .....	715
sp_webservices .....	719
sp_who .....	729

**CHAPTER 2**

<b>Catalog Stored Procedures .....</b>	<b>733</b>
Overview .....	733
Specifying optional parameters .....	734
Pattern matching .....	735
System procedure tables .....	735
ODBC datatypes .....	736
sp_column_privileges .....	737
sp_columns .....	739
sp_databases .....	742



sp_datatype_info.....	743
sp_fkeys.....	744
sp_pkeys.....	746
sp_server_info.....	747
sp_special_columns.....	750
sp_sproc_columns.....	752
sp_statistics.....	754
sp_stored_procedures.....	756
sp_table_privileges.....	757
sp_tables.....	758

**CHAPTER 3      System Extended Stored Procedures..... 761**

Overview.....	761
Permissions on system ESPs.....	762
DLLs associated with system ESPs.....	762
Using system ESPs.....	762
xp_cmdshell.....	763
xp_deletemail.....	766
xp_enumgroups.....	767
xp_findnextmsg.....	768
xp_logevent.....	769
xp_readmail.....	770
xp_sendmail.....	773
xp_startmail.....	777
xp_stopmail.....	778

**CHAPTER 4      dbcc Stored Procedures..... 779**

Overview.....	779
Specifying the object name and date.....	780
Specifying the object name.....	780
Specifying the date.....	781
sp_dbcc_alterws.....	782
sp_dbcc_configreport.....	783
sp_dbcc_createws.....	784
sp_dbcc_deletedb.....	786
sp_dbcc_deletehistory.....	787
sp_dbcc_differentialreport.....	789
sp_dbcc_evaluatedb.....	791
sp_dbcc_exclusions.....	793
sp_dbcc_faultreport.....	795
sp_dbcc_fullreport.....	800
sp_dbcc_help_fault.....	801
sp_dbcc_patch_finishtime.....	802

sp_dbcc_recommendations .....	804
sp_dbcc_runcheck .....	806
sp_dbcc_statisticsreport.....	807
sp_dbcc_summaryreport.....	810
sp_dbcc_updateconfig .....	814
<b>Index .....</b>	<b>817</b>

# About This Book

The *Adaptive Server Reference Manual* includes four guides to Sybase® Adaptive Server® Enterprise and the Transact-SQL® language:

- *Building Blocks* describes the “parts” of Transact-SQL: datatypes, built-in functions, global variables, expressions and identifiers, reserved words, and SQLSTATE errors. Before you can use Transact-SQL successfully, you need to understand what these building blocks do and how they affect the results of Transact-SQL statements.
- *Commands* provides reference information about the Transact-SQL commands, which you use to create statements.
- *Procedures* provides reference information about system procedures, catalog stored procedures, extended stored procedures, and dbcc stored procedures. All procedures are created using Transact-SQL statements.
- *Tables* provides reference information about the system tables, which store information about your server, databases, users, and other details of your server. It also provides information about the tables in the dbccdb and dbccalt databases.

## Audience

The *Adaptive Server Reference Manual* is intended as a reference tool for Transact-SQL users of all levels.

## How to use this book

- Chapter 1, “System Procedures” lists the Adaptive Server system procedures in a table that provides the name and a brief description. Click on a procedure name in the table to go directly to the procedure.
- Chapter 2, “Catalog Stored Procedures” contains reference pages for Adaptive Server catalog stored procedures.
- Chapter 3, “System Extended Stored Procedures” contains reference pages for Adaptive Server system extended stored procedures.
- Chapter 4, “dbcc Stored Procedures” contains reference pages for Adaptive Server dbcc stored procedures.

## Related documents

The Adaptive Server® Enterprise documentation set consists of:

- 
- The release bulletin for your platform – contains last-minute information that was too late to be included in the books.

A more recent version of the release bulletin may be available. To check for critical product or document information that was added after the release of the product CD, use the Sybase® Product Manuals Web site.

- The installation guide for your platform – describes installation, upgrading, and some configuration procedures for all Adaptive Server and related Sybase products.
- *New Feature Summary* – describes the new features in Adaptive Server, the system changes added to support those features, and changes that may affect your existing applications.
- *Active Messaging Users Guide* – describes how to use the Active Messaging feature to capture transactions (data changes) in an Adaptive Server Enterprise database, and deliver them as events to external applications in real time.
- *Component Integration Services Users Guide* – explains how to use Component Integration Services to connect remote Sybase and non-Sybase databases.
- The *Configuration Guide* for your platform – provides instructions for performing specific configuration tasks.
- *Glossary* – defines technical terms used in the Adaptive Server documentation.
- *Historical Server Users Guide* – describes how to use Historical Server to obtain performance information from Adaptive Server.
- *Java in Adaptive Server Enterprise* – describes how to install and use Java classes as datatypes, functions, and stored procedures in the Adaptive Server database.
- *Job Scheduler Users Guide* – provides instructions on how to install and configure, and create and schedule jobs on a local or remote Adaptive Server using the command line or a graphical user interface (GUI).
- *Migration Technology Guide* – describes strategies and tools for migrating to a different version of Adaptive Server.
- *Monitor Client Library Programmers Guide* – describes how to write Monitor Client Library applications that access Adaptive Server performance data.

- *Monitor Server Users Guide* – describes how to use Monitor Server to obtain performance statistics from Adaptive Server.
- *Monitoring Tables Diagram* – illustrates monitor tables and their entity relationships in a poster format. Full-size available only in print version; a compact version is available in PDF format.
- *Performance and Tuning Series* – is a series of books that explain how to tune Adaptive Server for maximum performance:
  - *Basics* – contains the basics for understanding and investigating performance questions in Adaptive Server.
  - *Improving Performance with Statistical Analysis* – describes how Adaptive Server stores and displays statistics, and how to use the `set statistics` command to analyze server statistics.
  - *Locking and Concurrency Control* – describes how to use locking schemes to improve performance, and how to select indexes to minimize concurrency.
  - *Monitoring Adaptive Server with `sp_sysmon`* – discusses how to use `sp_sysmon` to monitor performance.
  - *Monitoring Tables* – describes how to query Adaptive Server monitoring tables for statistical and diagnostic information.
  - *Physical Database Tuning* – describes how to manage physical data placement, space allocated for data, and the temporary databases.
  - *Query Processing and Abstract Plans* – explains how the optimizer processes queries, and how to use abstract plans to change some of the optimizer plans.
- *Quick Reference Guide* – provides a comprehensive listing of the names and syntax for commands, functions, system procedures, extended system procedures, datatypes, and utilities in a pocket-sized book (regular size when viewed in PDF format).
- *Reference Manual* – is a series of books that contains detailed Transact-SQL<sup>®</sup> information:
  - *Building Blocks* – discusses datatypes, functions, global variables, expressions, identifiers and wildcards, and reserved words.
  - *Commands* – documents commands.
  - *Procedures* – describes system procedures, catalog stored procedures, system extended stored procedures, and dbcc stored procedures.

- 
- *Tables* – discusses system tables, monitor tables, and dbcc tables.
  - *System Administration Guide* –
    - *Volume 1* – provides an introduction to the basics of system administration, including a description of configuration parameters, resource issues, character sets, sort orders, and instructions for diagnosing system problems. The second part of *Volume 1* is an in-depth discussion about security administration.
    - *Volume 2* – includes instructions and guidelines for managing physical resources, mirroring devices, configuring memory and data caches, managing multiprocessor servers and user databases, mounting and unmounting databases, creating and using segments, using the reorg command, and checking database consistency. The second half of *Volume 2* describes how to back up and restore system and user databases.
  - *System Tables Diagram* – illustrates system tables and their entity relationships in a poster format. Full-size available only in print version; a compact version is available in PDF format.
  - *Transact-SQL Users Guide* – documents Transact-SQL, the Sybase-enhanced version of the relational database language. This guide serves as a textbook for beginning users of the database management system, and also contains detailed descriptions of the pubs2 and pubs3 sample databases.
  - *Troubleshooting: Error Messages Advanced Resolutions* – contains troubleshooting procedures for problems you may encounter. The problems discussed here are the ones the Sybase Technical Support staff hear about most often.
  - *Encrypted Columns Users Guide* – describes how to configure and use encrypted columns with Adaptive Server.
  - *In-Memory Database Users Guide* – describes how to configure and use in-memory databases.
  - *Using Adaptive Server Distributed Transaction Management Features* – explains how to configure, use, and troubleshoot Adaptive Server DTM features in distributed transaction processing environments.
  - *Using Backup Server with IBM® Tivoli® Storage Manager* – describes how to set up and use the IBM Tivoli Storage Manager to create Adaptive Server backups.

- *Using Sybase Failover in a High Availability System* – provides instructions for using Sybase Failover to configure an Adaptive Server as a companion server in a high availability system.
- *Unified Agent and Agent Management Console* – describes the Unified Agent, which provides runtime services to manage, monitor, and control distributed Sybase resources.
- *Utility Guide* – documents the Adaptive Server utility programs, such as `isql` and `bcp`, which are executed at the operating system level.
- *Web Services Users Guide* – explains how to configure, use, and troubleshoot Web services for Adaptive Server.
- *XA Interface Integration Guide for CICS, Encina, and TUXEDO* – provides instructions for using the Sybase DTM XA interface with X/Open XA transaction managers.
- *XML Services in Adaptive Server Enterprise* – describes the Sybase native XML processor and the Sybase Java-based XML support, introduces XML in the database, and documents the query and mapping functions that are available in XML services.

**Other sources of information**

Use the Sybase Getting Started CD, the SyBooks™ CD, and the Sybase Product Manuals Web site to learn more about your product:

- The Getting Started CD contains release bulletins and installation guides in PDF format, and may also contain other documents or updated information not included on the SyBooks CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.
- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.

Some documentation may be provided in PDF format, which you can access through the PDF directory on the SyBooks CD. To read or print the PDF files, you need Adobe Acrobat Reader.

Refer to the *SyBooks Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.

- 
- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

To access the Sybase Product Manuals Web site, go to Product Manuals at <http://www.sybase.com/support/manuals/>.

## **Sybase certifications on the Web**

Technical documentation at the Sybase Web site is updated frequently.

### **❖ Finding the latest information on product certifications**

- 1 Point your Web browser to Technical Documents at <http://www.sybase.com/support/techdocs/>.
- 2 Click Certification Report.
- 3 In the Certification Report filter select a product, platform, and timeframe and then click Go.
- 4 Click a Certification Report title to display the report.

### **❖ Finding the latest information on component certifications**

- 1 Point your Web browser to Availability and Certification Reports at <http://certification.sybase.com/>.
- 2 Either select the product family and product under Search by Base Product; or select the platform and product under Search by Platform.
- 3 Select Search to display the availability and certification report for the selection.

### **❖ Creating a personalized view of the Sybase Web site (including support pages)**

Set up a MySybase profile. MySybase is a free service that allows you to create a personalized view of Sybase Web pages.

- 1 Point your Web browser to Technical Documents at <http://www.sybase.com/support/techdocs/>.
- 2 Click MySybase and create a MySybase profile.



## Sybase EBFs and software maintenance

### ❖ Finding the latest information on EBFs and software maintenance

- 1 Point your Web browser to the Sybase Support Page at <http://www.sybase.com/support>.
- 2 Select EBFs/Maintenance. If prompted, enter your MySybase user name and password.
- 3 Select a product.
- 4 Specify a time frame and click Go. A list of EBF/Maintenance releases is displayed.

Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as a Technical Support Contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click Edit Roles to add the “Technical Support Contact” role to your MySybase profile.

- 5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

## Conventions

The following sections describe conventions used in this manual.

SQL is a free-form language. There are no rules about the number of words you can put on a line or where you must break a line. However, for readability, all examples and most syntax statements in this manual are formatted so that each clause of a statement begins on a new line. Clauses that have more than one part extend to additional lines, which are indented. Complex commands are formatted using modified Backus Naur Form (BNF) notation.

Table 1 shows the conventions for syntax statements that appear in this manual:

**Table 1: Font and syntax conventions for this manual**

Element	Example
Command names, procedure names, utility names, and other keywords display in sans serif font.	<code>select</code> <code>sp_configure</code>
Database names and datatypes are in sans serif font.	master database
Book names, file names, variables, and path names are in italics.	<i>System Administration Guide</i> <i>sql.ini</i> file <i>column_name</i> \$SYBASE/ASE directory

Element	Example
Variables—or words that stand for values that you fill in—when they are part of a query or statement, are in italics in Courier font.	<pre>select <i>column_name</i>       from <i>table_name</i>       where <i>search_conditions</i></pre>
Type parentheses as part of the command.	<pre>compute <i>row_aggregate</i> (<i>column_name</i>)</pre>
Double colon, equals sign indicates that the syntax is written in BNF notation. Do not type this symbol. Indicates “is defined as”.	<pre>::=</pre>
Curly braces mean that you must choose at least one of the enclosed options. Do not type the braces.	<pre>{<i>cash</i>, <i>check</i>, <i>credit</i>}</pre>
Brackets mean that to choose one or more of the enclosed options is optional. Do not type the brackets.	<pre>[<i>cash</i>   <i>check</i>   <i>credit</i>]</pre>
The comma means you may choose as many of the options shown as you want. Separate your choices with commas as part of the command.	<pre><i>cash</i>, <i>check</i>, <i>credit</i></pre>
The pipe or vertical bar ( ) means you may select only one of the options shown.	<pre><i>cash</i>   <i>check</i>   <i>credit</i></pre>
An ellipsis (...) means that you can <i>repeat</i> the last unit as many times as you like.	<pre>buy thing = price [<i>cash</i>   <i>check</i>   <i>credit</i>] [, thing = price [<i>cash</i>   <i>check</i>   <i>credit</i>]]...</pre> <p>You must buy at least one thing and give its price. You may choose a method of payment: one of the items enclosed in square brackets. You may also choose to buy additional things: as many of them as you like. For each thing you buy, give its name, its price, and (optionally) a method of payment.</p>

- Syntax statements (displaying the syntax and all options for a command) appear as follows:

```
sp_dropdevice [device_name]
```

For a command with more options:

```
select column_name
      from table_name
      where search_conditions
```

In syntax statements, keywords (commands) are in normal font and identifiers are in lowercase. Italic font shows user-supplied words.

- Examples showing the use of Transact-SQL commands are printed like this:

```
select * from publishers
```

- Examples of output from the computer appear as follows:

---

pub_id	pub_name	city	state
0736	New Age Books	Boston	MA
0877	Binnet & Hardley	Washington	DC
1389	Algodata Infosystems	Berkeley	CA

(3 rows affected)

In this manual, most of the examples are in lowercase. However, you can disregard case when typing Transact-SQL keywords. For example, `SELECT`, `Select`, and `select` are the same.

Adaptive Server sensitivity to the case of database objects, such as table names, depends on the sort order installed on Adaptive Server. You can change case sensitivity for single-byte character sets by reconfiguring the Adaptive Server sort order. For more information, see the *System Administration Guide*.

### Accessibility features

This document is available in an HTML version that is specialized for accessibility. You can navigate the HTML with an adaptive technology such as a screen reader, or view it with a screen enlarger.

Adaptive Server HTML documentation has been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

---

**Note** You might need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and MixedCase Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

---

For information about how Sybase supports accessibility, see Sybase Accessibility at <http://www.sybase.com/accessibility>. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

### If you need help

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.



# System Procedures

This chapter describes the system procedures, which are Sybase-supplied stored procedures used for updating and getting reports from system tables. “List of system procedures” on page 5 lists the system procedures described in this volume.

Topics covered are:

Topics	Page
Introduction to system procedures	1
Permissions on system procedures	2
Auditing system procedures	3
Executing system procedures	3
Entering parameter values	4
Messages	5
System procedure tables	5
List of system procedures	5

## Introduction to system procedures

System procedures are created by *installmaster* at installation. They are located in the *sybssystemprocs* database, and owned by the System Administrator. Use *sp\_version* to determine which version of *installmaster* was most recently run.

Some system procedures can be run only in a specific database, but many of them can be run in any database. You can create your own system procedures that can be executed from any database. For more information, see the *System Administration Guide*.

All system procedures execute at isolation level 1.

All system procedures report a return status. The following example means that the procedure executed successfully:

```
return status = 0
```

The examples in this book do not include the return status.

Beginning with Adaptive Server version 12.5.1, you can declare up to 10,000 variables in a stored procedure. In earlier versions of Adaptive Server, the limit was 2,000.

## Return values for system procedures

Stored procedures report a **return status** that indicates whether or not they completed successfully, and if they did not, the reasons for failure. For more information about the return values for system procedures, see “Return values” in Chapter 16, “Using Stored Procedures,” in the *Transact-SQL User’s Guide*.

## Permissions on system procedures

Permissions for system procedures are set in the sybsystemprocs database.

Some system procedures can be run only by Database Owners. These procedures make sure that the user executing the procedure is the owner of the database from which they are being executed.

Other system procedures (for example, all the sp\_help procedures) can be executed by any user who has been granted permission, provided that the permission was granted in sybsystemprocs. A user must have permission to execute a system procedure either in all databases or in none of them.

A user who is not listed in sybsystemprocs..sysusers is treated as a “guest” user in sybsystemprocs and is automatically granted permission on many of the system procedures.

To deny a user permission on a system procedure, the System Administrator must add the user to sybsystemprocs..sysusers and write a revoke statement that applies to that procedure. The owner of a user database cannot directly control permissions on the system procedures within his or her own database.

## Auditing system procedures

In general, you can audit execute stored procedure by enabling the audit option “exec\_procedure”, which generates an audit record containing the name of the stored procedure and the parameters.

## Executing system procedures

If a system procedure is executed in a database other than sybsystemprocs, it operates on the system tables in the database in which it was executed. For example, if the Database Owner of pubs2 runs sp\_adduser in pubs2, the new user is added to pubs2..sysusers.

Run a system procedure in a specific database by either:

- Opening that database with the use command and execute the procedure, or
- Qualifying the procedure name with the database name.

For example, the user-defined system procedure sp\_foo, which executes the db\_name system function, returns the name of the database in which it is executed. When executed in the pubs2 database, it returns the value “pubs2”:

```
exec pubs2..sp_foo
-----
pubs2
(1 row affected, return status = 0)
```

When executed in sybsystemprocs, it returns the value “sybsystemprocs”:

```
exec sybsystemprocs..sp_foo
-----
sybsystemprocs
(1 row affected, return status = 0)
```

## Entering parameter values

If a parameter value for a system procedure contains punctuation or embedded blanks, or is a reserved word, you must enclose it in single or double quotes. If the parameter is an object name qualified by a database name or owner name, enclose the entire name in single or double quotes.

---

**Note** Do not use delimited identifiers as system procedure parameters; they may produce unexpected results.

---

If a procedure has multiple optional parameters, you can supply parameters in the following form instead of supplying all the parameters:

```
@parametername = value
```

The parameter names in the syntax statements match the parameter names defined by the procedures.

For example, the syntax for `sp_addlogin` is:

```
sp_addlogin login_name, password [, defdb  
[, deflanguage [, fullname]]]
```

To use `sp_addlogin` to create a login for “susan” with a password of “wonderful”, a full name of Susan B. Anthony, and the server’s default database and language, you can use:

```
sp_addlogin susan, wonderful, @fullname="Susan B. Anthony"
```

This provides the same information as the command with all the parameters specified:

```
sp_addlogin susan, wonderful, public_db, us_english, "Susan B. Anthony"
```

You can also use “null” as a placeholder:

```
sp_addlogin susan, wonderful, null, null, "Susan B. Anthony"
```

Do not enclose “null” in quotes.

SQL has no rules about the number of words you can put on a line or where you must break a line. If you issue a system procedure followed by a command, Adaptive Server attempts to execute the system procedure, then the command. For example, if you execute the following command, Adaptive Server returns the output from `sp_help`, then runs the checkpoint command:

```
sp_help checkpoint
```



If you specify more parameters than the number of parameters expected by the system procedure, the extra parameters are ignored by Adaptive Server.

## Messages

System procedures return informational and error messages, which are listed with each procedure in this book. System procedure error messages start at error number 17000.

Error messages from the functions and commands included in a procedure are documented in *Troubleshooting and Error Messages Guide*.

## System procedure tables

Several **system procedure tables** in the master database, such as `spt_values`, `spt_committab`, `spt_monitor`, and `spt_limit_types`, are used by system procedures to convert internal system values (for example, status bits) into human-readable format.

`spt_values` is never updated. To see how it is used, execute `sp_helptext` to look at the text for one of the system procedures that references it.

In addition, some system procedures create and then drop temporary tables.

## List of system procedures

Table 1-1 provides a brief description of each system procedure.

**Table 1-1: System procedures**

Procedure	Description
<code>sp_activeroles</code> on page 17	Displays all active roles granted to a user's login.
<code>sp_add_qpgroup</code> on page 19	Adds an abstract plan group.

<b>Procedure</b>	<b>Description</b>
sp_add_resource_limit on page 20	Creates a limit on the amount of server resources that a login or application can use to execute a query, query batch, or transaction.
sp_add_time_range on page 25	Adds a named time range to Adaptive Server.
sp_addalias on page 28	Allows an Adaptive Server user to be known in a database as another user.
sp_addauditrecord on page 30	Allows users to enter user-defined audit records (comments) into the audit trail.
sp_addauditable on page 32	Adds another system audit table after auditing is installed.
sp_addengine on page 34	Adds an engine to an existing engine group or, if the group does not exist, creates an engine group and adds the engine.
sp_addexeclass on page 36	Creates or updates a user-defined execution class that you can bind to client applications, logins, and stored procedures.
sp_addextendedproc on page 38	Creates an extended stored procedure (ESP) in the master database.
sp_addexternlogin on page 40	Creates an alternate login account and password to use when communicating with a remote server through Component Integration Services.
sp_addgroup on page 43	Adds a group to a database. Groups are used as collective names in granting and revoking privileges.
sp_addlanguage on page 44	Defines the names of the months and days, and the date format, for an alternate language.
sp_addlogin on page 47	Adds a new user account to Adaptive Server.
sp_addmessage on page 53	Adds user-defined messages to sysusermessages for use by stored procedure print and raiserror calls and by sp_bindmsg.
sp_addobjectdef on page 56	Specifies the mapping between a local table and an external storage location.
sp_addremotelogin on page 59	Authorizes a new remote server user by adding an entry to master.dbo.sysremotelogins.
sp_addsegment on page 62	Defines a segment on a database device in the current database.
sp_addserver on page 64	Defines a remote server or defines the name of the local server.
sp_addthreshold on page 68	Creates a threshold to monitor space on a database segment. When free space on the segment falls below the specified level, Adaptive Server executes the associated stored procedure.
sp_addtype on page 73	Creates a user-defined datatype.
sp_addumpdevice on page 77	Adds a dump device to Adaptive Server.
sp_adduser on page 79	Adds a new user to the current database.
sp_altermessage on page 81	Enables and disables the logging of a specific system-defined or user-defined message in the Adaptive Server error log.
sp_audit on page 83	Allows a System Security Officer to configure auditing options.
sp_autoconnect on page 90	Defines a passthrough connection to a remote server for a specific user, which allows the named user to enter passthrough mode automatically at login.

Procedure	Description
sp_autoformat on page 92	Produces readable result set data, reformatting the width of variable-length character data to display only non-blank characters. Trailing blanks are truncated in the output.
sp_bindcache on page 97	Binds a database, table, index, text object, or image object to a data cache.
sp_bindefault on page 101	Binds a user-defined default to a column or user-defined datatype.
sp_bindexclass on page 104	Associates an execution class with a client application, login, or stored procedure.
sp_bindmsg on page 107	Binds a user message to a referential integrity constraint or check constraint.
sp_bindrule on page 109	Binds a rule to a column or user-defined datatype.
sp_cacheconfig on page 111	Creates, configures, reconfigures, drops, and provides information about data caches.
sp_cachestrategy on page 121	Enables or disables prefetching (large I/O) and MRU cache replacement strategy for a table, index, text object, or image object.
sp_changedbowner on page 124	Changes the owner of a database.
sp_changegroup on page 126	Changes a user's group.
sp_checknames on page 128	Checks the current database for names that contain characters not in the 7-bit ASCII set.
sp_checkreswords on page 131	Detects and displays identifiers that are Transact-SQL reserved words. Checks server names, device names, database names, segment names, user-defined datatypes, object names, column names, user names, login names, and remote login names.
sp_checksouce on page 144	Checks for the existence of the source text of the compiled object.
sp_chgattribute on page 146	Changes the max_rows_per_page value for future space allocations of a table or index.
sp_clearpsexec on page 153	Clears the execution attributes of the client application, login, or stored procedure that was set by sp_setpsexec.
sp_clearstats on page 155	Initiates a new accounting period for all server users or for a specified user. Prints statistics for the previous period by executing sp_reportstats.
sp_client_addr on page 157	Displays the IP address of every Adaptive Server task with an attached client application, including the spid and the client host name.
sp_clusterlockusage on page 159	<b>Cluster environment only</b> Reports on the free, used, and retained locks in the cluster.
sp_cluster on page 160	<b>Cluster environment only</b> Performs various functions pertaining to a cluster environment.
sp_cmp_all_qplans on page 183	Compares all abstract plans in two abstract plan groups.
sp_cmp_qplans on page 186	Compares two abstract plans.
sp_commonkey on page 188	Defines a common key—columns that are frequently joined—between two tables or views.

Procedure	Description
sp_companion on page 190	Performs cluster operations such as configuring Adaptive Server as a secondary companion in a high availability system and moving a companion server from one failover mode to another
sp_compatmode on page 194	Verify whether full compatibility mode can be used.
sp_configure on page 195	Displays or changes configuration parameters.
sp_copy_all_qplans on page 203	Copies all plans for one abstract plan group to another group.
sp_copy_qplan on page 205	Copies one abstract plan to an abstract plan group.
sp_countmetadata on page 206	Displays the number of indexes, objects, or databases in Adaptive Server.
sp_cursorinfo on page 208	Reports information about a specific cursor or all cursors that are active for your session, whether scrollable or non-scrollable.
sp_dbextend on page 211	Allows you to: <ul style="list-style-type: none"> <li>• Install automatic database expansion procedures on database/segment pairs and devices.</li> <li>• Define site-specific policies for individual segments and devices.</li> <li>• Simulate execution of the database expansion machinery, to study the operation before engaging large volume loads.</li> </ul>
sp_dboption on page 219	Displays or changes database options.
sp_dbrecovery_order on page 229	Specifies the order in which user databases are recovered and lists the user-defined recovery order of a database or all databases.
sp_dbremap on page 232	Forces Adaptive Server to recognize changes made by alter database. Run this procedure only when instructed to do so by an Adaptive Server message.
sp_defaultloc on page 233	<b>Component Integration Services only</b> Defines a default storage location for objects in a local database.
sp_deletesmobj on page 236	<b>Tivoli Storage Manager license only</b> Removes current server's database backup objects from the IBM Tivoli Storage Manager.
sp_depends on page 238	Displays information about database object dependencies—the view(s), trigger(s), and procedure(s) that depend on a specified table or view, and the table(s) and view(s) that the specified view, trigger, or procedure depends on.
sp_deviceattr on page 244	Changes the device parameter settings of an existing database device file.
sp_diskdefault on page 246	Specifies whether or not a database device can be used for database storage if the user does not specify a database device or specifies default with the create database or alter database commands.
sp_displayaudit on page 248	Displays the status of audit options.
sp_displaylevel on page 252	Sets or shows which Adaptive Server configuration parameters appear in sp_configure output.
sp_displaylogin on page 254	Displays information about a login account.
sp_displayroles on page 261	Displays all roles granted to another role, or displays the entire hierarchy tree of roles in table format.

Procedure	Description
sp_downgrade on page 263	Validates readiness for downgrade to an earlier 15.0.x release. Also downgrades the system catalog changes Adaptive Server 15.0.2 modified.
sp_dropalias on page 264	Removes the alias user name identity established with sp_addalias.
sp_drop_all_qplans on page 266	Deletes all abstract plans in an abstract plan group.
sp_drop_qplan on page 268	Drops an abstract plan.
sp_drop_resource_limit on page 269	Removes one or more resource limits from Adaptive Server.
sp_drop_time_range on page 273	Removes a user-defined time range from Adaptive Server.
sp_dropdevice on page 274	Drops an Adaptive Server database device or dump device.
sp_dropengine on page 275	Drops an engine from a specified engine group or, if the engine is the last one in the group, drops the engine group.
sp_dropexeclass on page 277	Drops a user-defined execution class.
sp_dropextendedproc on page 278	Removes an ESP from the master database.
sp_dropexternlogin on page 279	<b>Component Integration Services only</b> Drops the definition of a remote login previously defined by sp_addexternlogin.
sp_dropglockpromote on page 281	Removes lock promotion values from a table or database.
sp_dropgroup on page 282	Drops a group from a database.
sp_dropkey on page 283	Removes a key defined with sp_primarykey, sp_foreignkey, or sp_commonkey from the syskeys table.
sp_droplanguage on page 285	Drops an alternate language from the server and removes its row from master.dbo.syslanguages.
sp_droplogin on page 286	Drops an Adaptive Server user login by deleting the user's entry in master.dbo.syslogins.
sp_dropmessage on page 288	Drops user-defined messages from sysusermessages.
sp_dropobjectdef on page 289	<b>Component Integration Services only</b> Deletes the external storage mapping provided for a local object
sp_dropremotelogin on page 291	Drops a remote user login.
sp_droprowlockpromote on page 293	Removes row lock promotion threshold values from a database or table.
sp_dropsegment on page 295	Drops a segment from a database or unmaps a segment from a particular database device.
sp_dropserver on page 297	Drops a server from the list of known servers.
sp_dropthreshold on page 299	Removes a free-space threshold from a segment.
sp_droptype on page 300	Drops a user-defined datatype.
sp_dropuser on page 301	Drops a user from the current database.
sp_dumpoptimize on page 303	Specifies the amount of data dumped by Backup Server during the dump database operation.
sp_encryption on page 309	Reports encryption information.
sp_engine on page 320	Enables you to bring an engine online or offline.

Procedure	Description
sp_estspace on page 324	Estimates the amount of space required for a table and its indexes, and the time needed to create the index.
sp_export_qpgroup on page 329	Exports all plans for a specified user and abstract plan group to a user table.
sp_extendsegment on page 331	Extends the range of a segment to another database device.
sp_extengine on page 333	Starts and stops EJB Server. Displays status information about EJB Server.
sp_extrapwdchecks on page 334	A custom stored procedure that can contain user-defined logic for password complexity checks. You can configure sp_extrapwdchecks according to your security needs. Install sp_extrapwdchecks in the master database.
sp_familylock on page 335	Reports information about all the locks held by a family (coordinating process and its worker processes) executing a statement in parallel.
sp_find_qplan on page 338	Finds an abstract plan, given a pattern from the query text or plan text.
sp_fixindex on page 340	Repairs the index on one of your system tables when it has been corrupted.
sp_flushstats on page 343	Flushes statistics from in-memory storage to the systabstats system table.
sp_forceonline_db on page 344	Provides access to all the pages in a database that were previously taken offline by recovery.
sp_forceonline_object	Provides access to an index previously marked suspect by recovery.
sp_forceonline_page on page 348	Provides access to pages previously taken offline by recovery.
sp_foreignkey on page 350	Defines a foreign key on a table or view in the current database.
sp_freedll on page 352	Unloads a dynamic link library (DLL) that was previously loaded into XP Server memory to support the execution of an ESP.
sp_getmessage on page 353	Retrieves stored message strings from sysmessages and sysusermessages for print and raiserror statements.
sp_grantlogin on page 355	<b>Windows NT only</b> When Integrated Security mode or Mixed mode (with Named Pipes) is active, assigns Adaptive Server roles or default permissions to Windows NT users and groups.
sp_ha_admin on page 357	Performs administrative tasks on Adaptive Servers configured with Sybase Failover in a high availability system. sp_ha_admin is installed with the <i>installhavss</i> script ( <i>insthasv</i> on Windows NT).
sp_help on page 359	Reports information about a database object (any object listed in sysobjects) and about Adaptive Server-supplied or user-defined datatypes.
sp_help_resource_limit on page 367	Reports information about all resource limits, limits for a given login or application, limits in effect at a given time or day of the week, or limits with a given scope or action.
sp_help_qpgroup on page 370	Reports information on an abstract plan group.
sp_help_qplan on page 372	Reports information about an abstract plan.
sp_helpapptrace on page 374	Determines which sessions Adaptive Server is tracing. sp_helpapptrace returns the server process IDs (spids) for all the sessions Adaptive Server is tracing, the spids of the sessions tracing them, and the name of the tracefile.

Procedure	Description
sp_helppartition on page 375	Lists partition information for a specified table, index, or partition, or for all partitions in the database.
sp_helpcache on page 379	Displays information about the objects that are bound to a data cache or the amount of overhead required for a specified cache size.
sp_helpcomputedcolumn on page 381	Reports information on the computed columns in a specified table.
sp_helpconfig on page 382	Reports help information on configuration parameters.
sp_helpconstraint on page 387	Reports information about integrity constraints used in the specified tables.
sp_helpdb on page 391	Reports information about a particular database or about all databases.
sp_helpdevice on page 395	Reports information about a particular device or about all Adaptive Server database devices and dump devices.
sp_helpextendedproc on page 398	Displays ESPs registered in the current database, along with their associated DLL files.
sp_helpexternlogin on page 400	<b>Component Integration Services only</b> Reports information about external login names.
sp_helpgroup on page 402	Reports information about a particular group or about all groups in the current database.
sp_helpindex on page 404	Reports information about the indexes created on a table.
sp_helpjava on page 407	Displays information about Java classes and associated JARs that are installed in the database.
sp_helpjoins on page 410	Lists the columns in two tables or views that are likely join candidates.
sp_helpkey on page 412	Reports information about a primary, foreign, or common key of a particular table or view, or about all keys in the current database.
sp_helplanguage on page 414	Reports information about a particular alternate language or about all languages.
sp_helplog on page 416	Reports the name of the device that contains the first page of the transaction log.
sp_helpobjectdef on page 417	<b>Component Integration Services only</b> Reports information about remote object definitions. Shows owners, objects, type, and definition.
sp_helpremotelogin on page 419	Reports information about a particular remote server's logins or about all remote servers' logins.
sp_helpprotect on page 420	Reports information about permissions for database objects, users, groups, or roles.
sp_helpsegment on page 425	Reports information about a particular segment or about all segments in the current database.
sp_helpserver on page 430	Reports information about a particular remote server or about all remote servers.
sp_helpsort on page 431	Displays Adaptive Server's default sort order and character set.

Procedure	Description
sp_helptext on page 433	Prints the text of a system procedure, trigger, view, default, rule, or integrity check constraint, and adds the number parameter, which is an integer identifying an individual procedure, when <i>objname</i> represents a group of procedures. This parameter tells sp_helptext to display the source text for a specified procedure in the group.
sp_helpthreshold on page 439	Reports the segment, free-space value, status, and stored procedure associated with all thresholds in the current database or all thresholds for a particular segment.
sp_helpuser on page 440	Reports information about a particular user or about all users in the current database.
sp_hidetext on page 442	Hides the source text for the specified compiled object.
sp_import_qpgroup on page 444	Imports abstract plans from a user table into an abstract plan group.
sp_indsuspect on page 446	Checks user tables for indexes marked as suspect during recovery following a sort order change.
sp_jreconfig on page 447	Manages the Java PCA/JVM, enabling arguments, directives, and configuration values, and changes, reports for sp_jreconfig and sp_pciconfig.
sp_ldapadmin on page 459	Creates or lists an LDAP URL search string; verifies an LDAP URL search string or login; specifies the access accounts and tunable LDAPUA-related parameters..
sp_listener on page 467	Dynamically starts and stops listeners on Adaptive Server on any given port on a per-engine basis.
sp_listsuspect_db on page 471	Lists all databases that have offline pages because of corruption detected on recovery.
sp_listsuspect_object on page 472	Lists all indexes in a database that are currently offline because of corruption detected on recovery.
sp_listsuspect_page on page 474	Lists all pages that are currently offline because of corruption detected on recovery.
sp_lmconfig on page 475	Configures license management-related information on Adaptive Server. The configuration options set by sp_lmconfig are stored in the <i>sylapi</i> properties file.
sp_lock on page 479	Reports information about processes that currently hold locks.
sp_locklogin on page 484	Locks an Adaptive Server account so that the user cannot log in, or displays a list of all locked accounts.
sp_logdevice on page 487	Moves the transaction log of a database with log and data on the same device to a separate database device.
sp_loginconfig on page 490	<b>Windows NT only</b> Displays the value of one or all integrated security parameters.
sp_logininfo on page 492	<b>Windows NT only</b> Displays all roles granted to Windows NT users and groups with sp_grantlogin.
sp_logiosize on page 494	Changes the log I/O size used by Adaptive Server to a different memory pool when it is doing I/O for the transaction log of the current database.



Procedure	Description
sp_logintrigger on page 497	Sets and displays the global login trigger. This global login trigger has the same characteristics as a personal login script. It is executed before any personal login script for every user that tries to log in, including system administrators and security officers.
sp_maplogin on page 499	Maps external users to Adaptive Server logins.
sp_metrics on page 500	Backs up, drops, and flushes QP metrics—always captured in the default running group, which is group 1 in each respective database—and their statistics on queries.
sp_modify_resource_limit on page 502	Changes a resource limit by specifying a new limit value or the action to take when the limit is exceeded, or both.
sp_modify_time_range on page 505	Changes the start day, start time, end day, and/or end time associated with a named time range.
sp_modifylogin on page 507	Modifies the default database, default language, default role activation, or full name for an Adaptive Server login account.
sp_modifystats on page 515	Allows the System Administrator to modify the density values of a column—or columns—in sysstatistics.
sp_modifythreshold on page 518	Modifies a threshold by associating it with a different threshold procedure, free-space level, or segment name. You cannot use sp_modifythreshold to change the amount of free space or the segment name for the last-chance threshold.
sp_monitor on page 522	Displays statistics about Adaptive Server.
sp_monitorconfig on page 530	Monitors more than 30 resources compared to the 6 resources it monitored in earlier versions.
sp_object_stats on page 538	Shows lock contention, lock wait-time, and deadlock statistics for tables and indexes.
sp_options on page 541	Show option values.
sp_passthru on page 550	<b>Component Integration Services only</b> Allows the user to pass a SQL command buffer to a remote server.
sp_password on page 553	Adds or changes a password for an Adaptive Server login account.
sp_passwordpolicy on page 556	An interface that a user with sso_role can use to configure login and password policies. This information is stored in the master.dbo.sysattributes table.
sp_pciconfig on page 566	Manages the Java PCI Bridge, enabling arguments, directives, and configuration values.
sp_placeobject on page 570	Puts future space allocations for a table or an index on a particular segment.
sp_plan_dbccdb on page 572	Recommends suitable sizes for new dbccdb and dbccalt databases, lists suitable devices for dbccdb and dbccalt, and suggests a cache size and a suitable number of worker processes for the target database.
sp_poolconfig on page 575	Creates, drops, resizes, and provides information about memory pools within data caches.

Procedure	Description
sp_post_xpload on page 581	Checks and rebuilds indexes after a cross-platform load database where the endian types are different.
sp_primarykey on page 583	Defines a primary key on a table or view.
sp_processmail on page 585	<b>Windows NT only</b> Reads, processes, sends, and deletes messages in the Adaptive Server message inbox.
sp_procxmode on page 588	Displays or changes the transaction modes associated with stored procedures.
sp_querysmobj on page 591	<b>Tivoli Storage Manager license only</b> Queries the Tivoli Storage Manager for a list of the current server's database backup objects.
sp_recompile on page 593	Causes each stored procedure and trigger that uses the named table to be recompiled the next time it runs.
sp_refit_admin on page 595	<b>Cluster environment only</b> Provides an interface to perform disk refit-related actions.
sp_remap on page 597	Remaps a stored procedure, trigger, rule, default, or view from releases later than 4.8 and earlier than 10.0 to be compatible with releases 10.0 and later. Use sp_remap on pre-release 11.0 objects that the release 11.0 upgrade procedure failed to remap.
sp_remotoption on page 599	Displays or changes remote login options.
sp_remotesql on page 601	<b>Component Integration Services only</b> Establishes a connection to a remote server, passes a query buffer to the remote server from the client, and relays the results back to the client.
sp_rename on page 604	Changes the name of a user-created object or user-defined datatype in the current database.
sp_rename_qpgroup on page 607	Renames an abstract plan group.
sp_renamedb on page 608	Changes the name of a database. You cannot rename system databases or databases with external referential integrity constraints.
sp_reportstats on page 611	Reports statistics on system usage.
sp_revokelogin on page 613	<b>Windows NT only</b> When Integrated Security mode or Mixed mode (with Named Pipes) is active, revokes Adaptive Server roles and default permissions from Windows NT users and groups.
sp_role on page 614	Grants or revokes system roles to an Adaptive Server login account.
sp_sendmsg on page 616	Sends a message to a User Datagram Protocol (UDP) port.
sp_serveroption on page 618	Displays or changes remote server options.
sp_set_qplan on page 624	Changes the text of the abstract plan of an existing plan without changing the associated query.
sp_setlangalias on page 626	Assigns or changes the alias for an alternate language.
sp_setpglockpromote on page 627	Sets or changes the lock promotion thresholds for a database, for a table, or for Adaptive Server.
sp_setpsexec on page 630	Sets custom execution attributes "on the fly" for an active client application, login, or stored procedure.

<b>Procedure</b>	<b>Description</b>
sp_setrowlockpromote on page 632	Sets or changes row-lock promotion thresholds for a datarows-locked table, for all datarows-locked tables in a database, or for all datarows-locked tables on a server.
sp_setsuspect_granularity on page 635	Displays and sets the recovery fault isolation mode.
sp_setsuspect_threshold on page 638	On recovery, sets the maximum number of suspect pages that Adaptive Server will allow in the specified database before taking the entire database offline.
sp_setup_table_transfer on page 640	Run once in each database containing the tables marked for incremental transfer to create the spt_TableTransfer table in this database.
sp_show_options on page 641	Prints all the server options that have been set in the current session. @@options the array of bits corresponding to server options. For every option, "low" is the byte number in @@options, and "high" is the bit within that byte corresponding to the option. If the bit is set, print name of that option.
sp_showcontrolinfo on page 642	Displays information about engine group assignments, bound client applications, logins, and stored procedures.
sp_showexeclass on page 644	Displays the execution class attributes and the engines in any engine group associated with the specified execution class.
sp_showplan on page 646	Displays the query plan for any user connection for the current SQL statement (or a previous statement in the same batch). The query plan is displayed in showplan format.
sp_showpsexec on page 648	Displays execution class, current priority, and affinity for all processes running on Adaptive Server.
sp_spaceusage on page 650	Reports the space usage for a table, index, or transaction log and estimates the amount of fragmentation for tables and indexes in a database.
sp_spaceused on page 663	Displays estimates of the number of rows, the number of data pages, and the space used by one table or by all tables in the current database.
sp_ssladmin on page 666	Adds, deletes, or displays a list of server certificates for Adaptive Server.
sp_syntax on page 671	Displays the syntax of Transact-SQL statements, system procedures, utilities, and other routines, depending on which products and corresponding sp_syntax scripts exist on Adaptive Server.
sp_sysmon on page 673	Displays performance information.
sp_tab_suspectptn on page 680	Lists tables with suspect partitions. A range-partitioned table on character-based partition keys can become suspect after a sort-order change, and hash-partitioned tables can become suspect after a cross-platform dump load.
sp_tempdb on page 681	Creates the default temporary database group, binds temporary databases to the default temporary database group, binds users and applications to the default temporary database group or to specific temporary databases, and provides the binding interface for maintaining bindings in sysattributes that are related to the multiple temporary database.

Procedure	Description
sp_tempdb_markdrop on page 690	<b>Cluster environment only</b> Places a local system temporary database in the drop state.
sp_thresholdaction on page 691	Executes automatically when the number of free pages on the log segment falls below the last-chance threshold, unless the threshold is associated with a different procedure. Sybase does not provide this procedure.
sp_tran_dumpable_status on page 693	If you cannot make a transaction dump on a database, sp_tran_dumpable_status displays the reasons the dump is not possible.
sp_transactions on page 694	Reports information about active transactions.
sp_unbindcache on page 700	Unbinds a database, table, index, text object, or image object from a data cache.
sp_unbindcache_all on page 703	Unbinds all objects that are bound to a cache.
sp_unbindefault on page 704	Unbinds a created default value from a column or from a user-defined datatype.
sp_unbindexclass on page 706	Removes the execution class attribute previously associated with an client application, login, or stored procedure for the specified scope.
sp_unbindmsg on page 708	Unbinds a user-defined message from a constraint.
sp_unbindrule on page 709	Unbinds a rule from a column or from a user-defined datatype.
sp_version on page 712	Returns the version information of the installation scripts ( <i>installmaster</i> , <i>installdbccdb</i> , and so on) that was last run and whether it was successful.
sp_volchanged on page 715	Notifies the Backup Server™ that the operator performed the requested volume handling during a dump or load.
sp_webservices on page 719	Creates and manages the proxy tables used in the Adaptive Server Web Services Engine.
sp_who on page 729	Reports information about all current Adaptive Server users and processes or about a particular user or process.

## sp\_activeroles

Description	Displays all active roles.
Syntax	sp_activeroles [expand_down]
Parameters	expand_down shows the hierarchy tree of all active roles contained by your roles.
Examples	<b>Example 1</b> Displays all active roles.

```

sp_activeroles
Role Name
-----
sa_role
sso_role
oper_role
replication_role

```

**Example 2** Displays active roles and their hierarchy tree:

```

sp_activeroles expand_down
Role Name          Parent Role Name          Level
-----
sa_role            NULL                       1
doctor_role       NULL                       1
oper_role          NULL                       1

```

Usage	sp_activeroles displays all your active roles and all roles contained by those roles.
Permissions	Any user can execute sp_activeroles.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Documents** For information about creating, managing, and using roles, see the *System Administration Guide*.

**Commands** alter role, create role, drop role, grant, revoke, set

**Functions** mut\_excl\_roles, proc\_role, role\_contain, role\_name

**System procedures** sp\_displayroles

## sp\_add\_qpgroup

Description	Adds an abstract plan group.
Syntax	<code>sp_add_qpgroup new_name</code>
Parameters	<i>new_name</i> is the name of the new abstract plan group. Group names must be valid identifiers.
Examples	Creates a new abstract plan group named <code>dev_plans</code> :  <code>sp_add_qpgroup dev_plans</code>
Usage	<ul style="list-style-type: none"> <li>Use <code>sp_add_qpgroup</code> to add abstract plan groups for use in capturing or creating abstract plans. The abstract plan group must exist before you can create, save, or copy plans into a group.</li> <li>You cannot run <code>sp_add_qpgroup</code> in a transaction.</li> </ul>
Permissions	Only a System Administrator or Database Owner can execute <code>sp_add_qpgroup</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also	<b>Commands</b> <code>set</code> <b>System procedures</b> <code>sp_help_qpgroup</code>
----------	---

## sp\_add\_resource\_limit

**Description** Creates a limit on the number of server resources that can be used by an Adaptive Server login and/or an application to execute a query, query batch, or transaction.

**Syntax** `sp_add_resource_limit name, appname, rangename, limittype, limitvalue [, enforced [, action [, scope ]]]`

**Parameters** *name* is the Adaptive Server login to which the limit applies. You must specify either a *name* or an *appname* or both. To create a limit that applies to all users of a particular application, specify a *name* of NULL.

*appname* is the name of the application to which the limit applies. You must specify either a *name* or an *appname* or both. To create a limit that applies to all applications used by an Adaptive Server login, specify an *appname* of null. To create a limit that applies to a particular application, specify the application name that the client program passes to the Adaptive Server in the login packet.

*rangename* is the time range during which the limit is enforced. The time range must exist in the systimeranges system table of the master database at the time you create the limit.

*limittype* is the type of resource to limit. This must be one of the following:

Limit type	Description
row_count	Limits the number of rows a query can return
elapsed_time	Limits the number of seconds, in wall-clock time, that a query batch or transaction can run
io_cost	Limits either the actual cost or the optimizer's cost estimate for processing a query
tempdb_space	Limits the number of pages a tempdb database can have during a single session

*limitvalue* is the maximum amount of the server resource (I/O cost, elapsed time in seconds, row count, or tempdb space) that can be used by the login or application before Adaptive Server enforces the limit. This must be a positive, nonzero integer that is less than or equal to 2<sup>31</sup>. The following table indicates what value to specify for each limit type:

Limit type	Limit value
row_count	The maximum number of rows that can be returned by a query before the limit is enforced.



Limit type	Limit value
elapsed_time	The number of seconds, in wall-clock time, that a query batch or transaction can run before the limit is enforced.
io_cost	A unitless measure derived from the optimizer's costing formula.
tempdb_space	The number of pages used in tempdb per session.

*enforced*

determines whether the limit is enforced prior to or during query execution. The following table lists the valid values for each limit type:

enforced code	Description	Limit type
1	Action is taken when the estimated I/O cost of execution exceeds the specified limit.	io_cost
2	Action is taken when the actual row count, elapsed time, or I/O cost of execution exceeds the specified limit.	row_count elapsed_time io_cost
3	Action is taken when either the estimated cost or the actual cost exceeds the specified limit.	io_cost

If you specify an *enforced* value of 3, Adaptive Server performs a logical “or” of 1 and 2. For example, assume *enforced* is set to 3. If you run a query whose *io\_cost* exceeds the estimated cost, the specified *action* is executed. If the query is within the limits specified for estimated cost but exceeds the actual cost, the specified *action* is also executed.

If you do not specify an *enforced* value, Adaptive Server enforces limit 2 for *row\_count* and *elapsed\_time* and limit 3 for *io\_cost*. In other words, if the limit type is *io\_cost*, the specified action is executed if the query exceeds either the estimated or actual cost.

*action*

is the action to take when the limit is exceeded. The following action codes are valid for all limit types:

action code	Description
1	Issues a warning
2	Aborts the query batch
3	Aborts the transaction
4	Kills the session

If you do not specify an *action* value, Adaptive Server uses a default value of 2 (abort the query batch).

*scope*

is the scope of the limit. Specify one of the following codes appropriate to the type of limit:

<b>scope code</b>	<b>Description</b>	<b>Limit type</b>
1	Query	io_cost row_count
2	Query batch (one or more SQL statements sent by the client to the server)	elapsed_time
4	Transaction	elapsed_time
6	Query batch and transaction	elapsed_time

If you do not specify a *scope* value, the limit applies to all possible scopes for the limit type.

## Examples

**Example 1** Creates a resource limit that applies to all users of the payroll application during the *early\_morning* time range. If the query batch takes more than 120 seconds to execute, Adaptive Server issues a warning:

```
sp_add_resource_limit NULL, payroll, early_morning, elapsed_time, 120, 2, 1, 2
```

**Example 2** Creates a resource limit that applies to all ad hoc queries and applications run by “joe\_user” during the *midday* time range. When a query returns more than 5000 rows, Adaptive Server aborts the transaction:

```
sp_add_resource_limit joe_user, NULL, midday, row_count, 5000, 2, 3, 1
```

**Example 3** Creates a resource limit that applies to all ad hoc queries and applications run by “joe\_user” during the *midday* time range. When the optimizer estimates that the I/O cost would exceed 650, Adaptive Server aborts the transaction:

```
sp_add_resource_limit joe_user, NULL, midday, io_cost, 650, 1, 3, 1
```

## Usage

- You must enable `sp_configure "allow resource limits"` for resource limits to take effect.
- Multiple resource limits can exist for a given user, application, limit type, scope, and enforcement time, as long as their time ranges do not overlap.
- All limits for the currently active named time ranges and the “at all times” range for a login and/or application name are bound to the user’s session at login time. Therefore, if a user logs into Adaptive Server independently of a given application, resource limits that restrict the user in combination with that application do not apply. To guarantee restrictions on that user, create a resource limit that is specific to the user and independent of any application.

- Since either the user login name or application name, or both, are used to identify a resource limit, Adaptive Server observes a predefined search precedence while scanning the sysresourcelimits table for applicable limits for a login session. The following table describes the precedence of matching ordered pairs of login name and application name:

Level	Login name	Application name
1	“joe_user”	payroll
2	NULL	payroll
3	“joe_user”	NULL

If one or more matches are found for a given precedence level, no further levels are searched. This prevents conflicts regarding similar limits for different login/application combinations.

If no match is found at any level, no limit is imposed on the session.

- When you add, delete, or modify resource limits, Adaptive Server rebinds the limits for each session for that login and/or application at the beginning of the next query batch for that session.
- When you change the currently active time ranges, Adaptive Server rebinds limits for the session. This rebinding occurs at the beginning of the next query batch.
- You cannot associate the limits for a particular login, application, or login/application combination with named time ranges that overlap (except for limits that share the same time range).

For example, if a user is limited to retrieving 50 rows between 9:00 a.m. and 1:00 p.m., you cannot create a second resource limit for the same user that limits him to retrieving 100 rows between 10:00 a.m. and 12:00 noon. However, you can create a resource hierarchy by assigning the 100-row limit to the *user* between 10:00 a.m. and 12:00 noon and assigning the 50-row limit to an *application*, like *isql*, between 9:00 a.m. and 1:00 p.m.

---

**Note** Although Adaptive Server terminates the current transaction when it reaches its time limit, you receive no 1105 error message until you issue another SQL command or batch; in other words, the message appears only when you attempt to use the connection again.

---

Permissions

Only a System Administrator can execute `sp_add_resource_limit`.

Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Documents** For more information on resource limits, see the *System Administration Guide*.

**System procedures** sp\_configure, sp\_drop\_resource\_limit, sp\_help\_resource\_limit, sp\_modify\_resource\_limit

**Utility** isql

## sp\_add\_time\_range

Description	Adds a named time range to an Adaptive Server.
Syntax	<code>sp_add_time_range name, startday, endday, starttime, endtime</code>
Parameters	<p><i>name</i></p> <p>is the name of the time range. Time range names must be 255 characters or fewer. The name cannot already exist in the <code>systimeranges</code> system table of the master database.</p> <p><i>startday</i></p> <p>is the day of the week on which the time range begins. This must be the full weekday name for the default server language, as stored in the <code>syslanguages</code> system table of the master database.</p> <p><i>endday</i></p> <p>is the day of the week on which the time range ends. This must be the full weekday name for the default server language, as stored in the <code>syslanguages</code> system table of the master database. The <i>endday</i> can fall either earlier or later in the week than the <i>startday</i> or can be the same day as the <i>startday</i>.</p> <p><i>starttime</i></p> <p>is the time of day when the time range begins. Specify the <i>starttime</i> in terms of a 24-hour clock, with a value between “00:00” (midnight) and “23:59” (11:59 p.m.). Use the following form:</p> <pre>"HH:MM"</pre> <p><i>endtime</i></p> <p>is the time of day when the time range ends. Specify the <i>endtime</i> in terms of a 24-hour clock, with a value between “00:00” (midnight) and “23:59” (11:59 p.m.). Use the following form:</p> <pre>"HH:MM"</pre>

---

**Note** To create a time range that spans the entire day, specify both a start time and an end time of “00:00”.

---

The *endtime* must occur later in the day than the *starttime*, unless *endtime* is “00:00”.

**Examples** **Example 1** Creates the `business_hours` time range, which is active Monday through Friday, from 9:00 a.m. to 5:00 p.m.:

```
sp_add_time_range business_hours, monday, Friday, "09:00", "17:00"
```

**Example 2** Creates two time ranges, `before_hours` and `after_hours`, that, together, span all non-business hours Monday through Friday. The `before_hours` time range covers the period from 12:00 midnight to 9:00 a.m., Monday through Friday. The `after_hours` time range covers the period from 6:00 p.m. through 12:00 midnight, Monday through Friday:

```
sp_add_time_range before_hours, Monday, Friday, "00:00", "09:00"
```

```
sp_add_time_range after_hours, Monday, Friday, "18:00", "00:00"
```

**Example 3** Creates the `weekends` time range, which is 12:00 midnight Saturday to 12:00 midnight Sunday:

```
sp_add_time_range weekends, Saturday, Sunday, "00:00", "00:00"
```

**Example 4** Creates the `Fri_thru_Mon` time range, which is 9:00 a.m. to 5:00 p.m., Friday, Saturday, Sunday, and Monday:

```
sp_add_time_range Fri_thru_Mon, Friday, Monday, "09:00", "17:00"
```

**Example 5** Creates the `Wednesday_night` time range, which is Wednesday from 5:00 p.m. to 12:00 midnight:

```
sp_add_time_range Wednesday_night, Wednesday, Wednesday, "17:00", "00:00"
```

#### Usage

- Adaptive Server includes one named time range, the “at all times” time range. This time range covers all times, from the first day through the last of the week, from 00:00 through 23:59. It cannot be modified or deleted.
- Adaptive Server generates a unique ID number for each named time range and inserts it into the `sysrangeranges` system table,
- When storing a time range in the `sysrangeranges` system table, Adaptive Server converts its `startday` and `endday` values into integers. For servers with a default language of `us_english`, the week begins on Monday (day 1) and ends on Sunday (day 7).
- It is possible to create a time range that overlaps with one or more other time ranges.
- Range days are contiguous, so the days of the week can wrap around the end to the beginning of the week. In other words, Sunday and Monday are contiguous days, as are Tuesday and Wednesday.

- The active time ranges are bound to a session at the beginning of each query batch. A change in the server's active time ranges due to a change in actual time has no effect on a session during the processing of a query batch. In other words, if a resource limit restricts a query batch during a given time range but a query batch begins before that time range becomes active, the query batch that is already running is not affected by the resource limit.
- The addition, modification, and deletion of time ranges using the system procedures does not affect the active time ranges for sessions currently in progress.
- If a resource limit has a transaction as its scope, and a change occurs in the server's active time ranges while a transaction is running, the newly active time range does not affect the transaction currently in progress.
- Changes to a resource limit that has a transaction as its scope does not affect any transactions currently in progress.
- For more information on time ranges, see the System Administration Guide.

Permissions Only a System Administrator can execute `sp_add_time_range`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_add_resource_limit`, `sp_drop_time_range`, `sp_modify_time_range`

## sp\_addalias

Description	Allows an Adaptive Server user to be known in a database as another user.
Syntax	sp_addalias <i>loginame</i> , <i>name_in_db</i>
Parameters	<p><i>loginame</i> is the master.dbo.syslogins name of the user who wants an alternate identity in the current database.</p> <p><i>name_in_db</i> is the database user name to alias <i>loginame</i> to. The name must exist in both master.dbo.syslogins and in the sysusers table of the current database.</p>
Examples	There is a user named “albert” in the database’s sysusers table and a login for a user named “victoria” in master.dbo.syslogins. This command allows “victoria” to use the current database by assuming the name “albert”: <pre>sp_addalias victoria, albert</pre>
Usage	<ul style="list-style-type: none"><li>• Executing sp_addalias maps one user to another in the current database. The mapping is shown in sysalternates, where the two users’ suids (system user IDs) are connected.</li><li>• A user can be aliased to only one database user at a time.</li><li>• A report on any users mapped to a specified user can be generated with sp_helpuser, giving the specified user’s name as an argument.</li><li>• When a user tries to use a database, Adaptive Server checks sysusers to confirm that the user is listed there. If the user is not listed there, Adaptive Server then checks sysalternates. If the user’s suid is listed in sysalternates, mapped to a database user’s suid, Adaptive Server treats the first user as the second user while using the database.</li></ul> <p>If the user named in <i>loginame</i> is in the database’s sysusers table, Adaptive Server does not use the user’s alias identity, because it checks sysusers and finds the loginame before checking sysalternates, where the alias is listed.</p>
Permissions	Only the Database Owner, a System Administrator, or a System Security Officer can execute sp_addalias.
Auditing	Values in event and extrainfo columns from the sysaudits table are:



Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Command** use

**System procedures** sp\_addlogin, sp\_adduser, sp\_dropalias, sp\_helpuser

## sp\_addauditrecord

**Description** Allows users to enter user-defined audit records (comments) into the audit trail.

**Syntax** sp\_addauditrecord [*text* [, *db\_name* [, *obj\_name* [, *owner\_name* [, *dbid* [, *objid*]]]]]]]

**Parameters** *text*  
is the text of the message to add to the current audit table. The text is inserted into the extrainfo field of the table.

*db\_name*  
is the name of the database referred to in the record. The name is inserted into the dbname field of the current audit table.

*obj\_name*  
is the name of the object referred to in the record. The name is inserted into the objname field of the current audit table.

*owner\_name*  
is the owner of the object referred to in the record. The name is inserted into the objowner field of the current audit table.

*dbid*  
is the database ID number of *db\_name*. Do not enclose this integer value in quotes. *dbid* is inserted into the dbid field of the current audit table.

*objid*  
is the object ID number of *obj\_name*. Do not enclose this integer value in quotes. *objid* is inserted into the objid field of the current audit table.

**Examples** **Example 1** Adds “I gave A. Smith permission to view the payroll table in the corporate database. This permission was in effect from 3:10 to 3:30 pm on 9/22/92.” to the extrainfo field; “corporate” to the dbname field; “payroll” to the objname field; “dbo” to the objowner field; “10” to the dbid field, and “1004738270” to the objid field of the current audit table:

```
sp_addauditrecord "I gave A. Smith permission to view the payroll table in the corporate database. This permission was in effect from 3:10 to 3:30 pm on 9/22/92.", "corporate", "payroll", "dbo", 10, 1004738270
```

**Example 2** Adds this record to the audit trail. This example uses parameter names with the @ prefix, which allows you to leave some fields empty:

```
sp_addauditrecord @text="I am disabling auditing briefly while we reconfigure the system", @db_name="corporate"
```

- Usage
- Adaptive Server writes all audit records to the current audit table. The current audit table is determined by the value of the current audit table configuration parameter, set with `sp_configure`. An installation can have up to eight system audit tables, named `sysaudits_01`, `sysaudits_02`, and so forth, through `sysaudits_08`.

---

**Note** The records actually are first stored in the in-memory audit queue, and the audit process later writes the records from the audit queue to the current audit table. Therefore, you cannot count on an audit record being stored immediately in the audit table.

---

- You can use `sp_addauditrecord` if:
  - You have been granted execute permission on `sp_addauditrecord` – no special role is required
  - Auditing is enabled – a System Security Officer used `sp_configure` to turn on the auditing configuration parameter
  - The `adhoc` option of `sp_audit` is set to on

Permissions Only a System Security Officer can execute `sp_addauditrecord`. The Database Owner of `sybsecurity` (who must also be a System Security Officer) can grant execute permission to other users.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
1	<code>adhoc</code>	User-defined audit record	extrainfo is filled by the <i>text</i> parameter of <code>sp_addauditrecord</code>
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedure** `sp_audit`

## sp\_addaudittable

Description	Adds another system audit table after auditing is installed.
Syntax	<code>sp_addaudittable devname</code>
Parameters	<p><i>devname</i></p> <p>is the name of the device for the audit table. Specify a device name or specify "default". If you specify "default", Adaptive Server creates the audit table on the same device as the sybsecurity database. Otherwise, Adaptive Server creates the table on the device you specify.</p>
Examples	<p><b>Example 1</b> Creates a system audit table on auditdev2. If only one system audit table (sysaudits_01) exists when you execute the procedure, Adaptive Server names the new audit table sysaudits_02 and places it on its own segment, called aud_seg_02, on auditdev2:</p> <pre>sp_addaudittable auditdev2</pre> <p><b>Example 2</b> Creates a system audit table on the same device as the sybsecurity database. If two system audit tables (sysaudits_01 and sysaudits_02) exist when you execute the procedure, Adaptive Server names the new audit table sysaudits_03 and places it on its own segment, called aud_seg_03, on the same device as the sybsecurity database:</p> <pre>sp_addaudittable "default"</pre>
Usage	<ul style="list-style-type: none"><li>• Auditing must already be installed when you run <code>sp_addaudittable</code>. To add a system audit table:<ol style="list-style-type: none"><li>a Create the device for the audit table, using disk init. For example, run a command like this for UNIX:<pre>disk init name = "auditdev2", physname = "/dev/rxyla", size = "5K"</pre></li><li>b Add the device to the sybsecurity database with the alter database command. For example, to add auditdev2 to the sybsecurity database, use:<pre>alter database sybsecurity on auditdev2</pre></li><li>c Execute <code>sp_addaudittable</code> to create the table.</li></ol></li></ul>

- Adaptive Server names the new system audit table and the new segment according to how many audit tables are already defined. For example, if five audit tables are defined before you execute the procedure, Adaptive Server names the new audit table `sysaudits_06` and the new segment `aud_seg_06`. If you specify “default”, Adaptive Server places the segment on the same device as the sybsecurity database. Otherwise, Adaptive Server places the segment on the device you name.
- A maximum of eight audit tables is allowed. If you already have eight audit tables, and you attempt to execute `sp_addauditable` to add another one, Adaptive Server displays an error message.
- For information about how to install auditing, see the installation documentation for your platform. See the *System Administration Guide* for information on how to use auditing.

Permissions Only a user who is both a System Administrator and a System Security Officer to execute `sp_addauditable`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedure** `sp_audit`

## sp\_addengine

Description	Adds an engine to an existing engine group or, if the group does not exist, creates an engine group and adds the engine.
Syntax	<code>sp_addengine engine_number, engine_group [, instance_id]</code>
Parameters	<p><i>engine_number</i> is the number of the engine you are adding to the group. Legal values are between 0 and a maximum equal to the number of configured online engines minus one.</p> <p><i>engine_group</i> is the name of the engine group to which you are adding the engine. If <i>engine_group</i> does not exist, Adaptive Server creates it and adds the engine to it. Engine group names must conform to the rules for identifiers. For details, see Chapter 4, “Expressions, Identifiers, and Wildcard Characters” in <i>Reference Manual: Building Blocks</i>.</p> <p><i>instance_id</i> <i>in cluster environments</i> – ID of the instance to which you are adding an engine or engine group.</p>
Examples	<p><b>Example 1</b> If no engine group is called DS_GROUP, this statement establishes the group. If DS_GROUP already exists, this statement adds engine number 2 to that group:</p> <pre>sp_addengine 2, DS_GROUP</pre> <p><b>Example 2</b> Adds engine number 5 to instance ID 8:</p> <pre>sp_addengine 5, 8</pre>
Usage	<ul style="list-style-type: none"><li>• <code>sp_addengine</code> creates a new engine group if the value of <i>engine_group</i> does not already exist.</li><li>• If <code>sp_cluster</code> set <i>system_view</i> is set to <code>cluster</code>, you can add an engine or engine group to any instance in the cluster. If <i>system_view</i> is set to <code>instance</code>, you can add an engine or engine group only to a local instance.</li><li>• The engine groups ANYENGINE and LASTONLINE are predefined. ANYENGINE includes all existing engines. LASTONLINE specifies the engine with highest engine number. A System Administrator can create additional engine groups. You cannot modify predefined engine groups.</li><li>• As soon as you use <code>sp_bindexclass</code> to bind applications or logins to an execution class associated with <i>engine_group</i>, the associated process may start running on <i>engine_number</i>.</li></ul>

- Prior to making engine affinity assignments, study the environment and consider the number of non-preferred applications and the number of Adaptive Server engines available. See the *Performance and Tuning Guide* for more information about non-preferred applications.

Permissions Only a System Administrator can execute `sp_addengine`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_addexclass`, `sp_bindexclass`, `sp_clearpsex`, `sp_dropengine`, `sp_setpsex`, `sp_showcontrolinfo`, `sp_showexclass`, `sp_showpsex`, `sp_unbindexclass`

## sp\_addexeclass

Description	Creates or updates a user-defined execution class that you can bind to client applications, logins, and stored procedures.
Syntax	<code>sp_addexeclass <i>classname</i>, <i>priority</i>, <i>timeslice</i>, <i>engine_group</i> [, <i>instance_id</i>]</code>
Parameters	<p><i>classname</i> is the name of the new execution class.</p> <p><i>priority</i> is the priority value with which to run the client application, login, or stored procedure after it is associated with this execution class. Legal values are HIGH, LOW, and MEDIUM.</p> <p><i>timeslice</i> is the time unit assigned to processes associated with this class. Adaptive Server currently ignores this parameter.</p> <p><i>engine_group</i> identifies an existing group of engines on which processes associated with this class can run.</p> <p><i>instance_id</i> <i>in cluster environments</i> – ID of the instance to which you are binding a user-defined execution class.</p>
Examples	<p><b>Example 1</b> Defines a new execution class called DS with a <i>priority</i> value of LOW and associates it with the engine group DS_GROUP:</p> <pre>sp_addexeclass "DS", "LOW", 0, "DS_GROUP"</pre> <p><b>Example 2</b> <i>In cluster environments</i> – Defines a new execution class called DS with a priority value of LOW and associates it with the engine group DS_GROUP on instance number 8, enter:</p> <pre>sp_addexeclass "DS", "LOW", 0, "DS_GROUP", 8</pre>
Usage	<ul style="list-style-type: none"><li>• <code>sp_addexeclass</code> creates or updates a user-defined execution class that you can bind to client applications, logins, and stored procedures. If the class already exists, the class attribute values are updated with the values supplied by the user.</li><li>• <i>In cluster environments</i> – If <code>sp_cluster</code> set <i>system_view</i> is set to cluster, you can add an execution class on any instance in the cluster. If the <i>system_view</i> is set to instance, you can add an execution class only to a local instance.</li><li>• Use the predefined engine group parameter ANYENGINE if you do not want to restrict the execution object to an engine group.</li></ul>



- Use `sp_addengine` to define engine groups. Use `sp_showexeclass` to display execution class attributes and the engines in any engine group associated with the specified execution class. `sp_showcontrolinfo` lists the existing engine groups.

Permissions Only a System Administrator can execute `sp_addexeclass`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_addengine`, `sp_bindexeclass`, `sp_clearpsex`, `sp_dropengine`, `sp_dropexeclass`, `sp_setpsex`, `sp_showcontrolinfo`, `sp_showexeclass`, `sp_showpsex`, `sp_unbindexeclass`

## sp\_addextendedproc

Description	Creates an extended stored procedure (ESP) in the master database.
Syntax	<code>sp_addextendedproc esp_name, dll_name</code>
Parameters	<p><i>esp_name</i></p> <p>is the name of the extended stored procedure. This name must be identical to the name of the procedural language function that implements the ESP. <i>esp_name</i> must be a valid Adaptive Server identifier.</p> <p><i>dll_name</i></p> <p>is the name of the dynamic link library (DLL) file containing the function specified by <i>esp_name</i>. The <i>dll_name</i> can be specified with no extension or with its platform-specific extension, such as <i>.dll</i> on Windows NT or <i>.so</i> on Sun Solaris. If an extension is specified, the <i>dll_name</i> must be enclosed in quotation marks.</p>
Examples	Registers an ESP for the function named <code>my_esp</code> , which is in the <code>sqlsrvdll.dll</code> file. The name of the resulting ESP database object is also <code>my_esp</code> :
Usage	<pre>sp_addextendedproc my_esp, "sqlsrvdll.dll"</pre> <ul style="list-style-type: none"><li>• Execute <code>sp_addextendedproc</code> from the master database.</li><li>• You can only use <code>sp_addextendedproc</code> to add extended stored procedures that take no parameters. If your extended stored procedure requires a formal parameter list, you must use the <code>create procedure</code> command with the <code>as external name</code> option, together with the complete parameter list.</li><li>• The <i>esp_name</i> is case sensitive. It must match the name of the function in the DLL.</li><li>• The DLL represented by <i>dll_name</i> must reside on the server machine on which the ESP is being created and the DLL directory must be in:<ul style="list-style-type: none"><li>• Windows NT – <i>\$PATH</i></li><li>• Compaq Tru64 – <i>\$LD_LIBRARY_PATH</i></li><li>• HP – <i>\$SH_LIBRARY_PATH</i></li></ul></li></ul> <p>If the file is not found, the search mechanism also searches <i>\$\$SYBASE/dll</i> on Windows NT and <i>\$\$SYBASE/lib</i> on other platforms.</p> <ul style="list-style-type: none"><li>• <i>On Windows NT</i> – an ESP function should not call a C run-time signal routine. This can cause XP Server to fail, because Open Server™ does not support signal handling on Windows NT.</li></ul>
Permissions	Only a System Administrator can execute <code>sp_addextendedproc</code> .

Auditing Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** create procedure

**System procedures** sp\_dropextendedproc, sp\_helpextendedproc

## sp\_addexternlogin

Description	<b>Component Integration Services only</b> Creates an alternate login account and password to use when communicating with a remote server through Component Integration Services.
Syntax	<code>sp_addexternlogin server, loginame, externname [, externpasswd] [rolename]</code>
Parameters	<p><i>server</i> is the name of the remote server. The <i>remote_server</i> must be known to the local server by an entry in the master.dbo.sys.servers table.</p> <p><i>loginame</i> is an account known to the local server. <i>loginame</i> must be represented by an entry in the master.dbo.syslogins table. The “sa” account, the “sso” account, and the <i>loginame</i> account are the only users authorized to modify remote access for a given local user.</p> <p><i>externname</i> is an account known to the <i>server</i> and must be a valid account on the node where the <i>server</i> runs. This is the account used for logging into the <i>server</i>.</p> <p><i>externpasswd</i> is the password for <i>externname</i>.</p> <p><i>rolename</i> is the Adaptive Server user’s assigned role. If <i>rolename</i> is specified, <i>login_name</i> is ignored.</p>
Examples	<p><b>Example 1</b> Tells the local server that when the login name “bobj” logs in, access to the remote server OMNI1012 is by the remote name “jordan” and the remote password “hitchpost”. Only the “bobj” account, the “sa” account, and the “sso” account have the authority to add or modify a remote login for the login name “bobj”:</p> <pre>sp_addexternlogin OMNI1012, bobj, jordan, hitchpost</pre> <p><b>Example 2</b> Shows a many-to-one mapping so that all Adaptive Server Enterprise users that need a connection to DB2 can be assigned the same name and password:</p> <pre>sp_addexternlogin DB2, NULL, login2, password2</pre> <p><b>Example 3</b> Adaptive Server Enterprise roles can also be assigned remote logins. With this capability, anyone with a particular role can be assigned a corresponding login name and password for a given remote server:</p> <pre>sp_addexternlogin DB2, NULL, login3, password3, role</pre>

## Usage

- `sp_addexternlogin` assigns an alternate login name and password to be used when communicating with a remote server. It stores the password internally in encrypted form.

---

**Note** You can use `sp_addexternlogin` only when Component Integration Services is configured.

---

- Mappings can be one-to-one (for specific users), role-to-one (role-based), many-to-one (server-based), or based on the client login and password from the TDS loginrec.
- The login and password have a many to one mapping. That is, you can assign all the users who need to log into a remote server the same name and password.
- When several external logins are set for a user, the following precedence will be followed for user connections to a remote server. 1) one-to-one mapping, 2) if there is no one-to-one mapping, active role is used, 3) if neither one-to-one mapping nor active role is present, then many-to-one mapping, 4) if none of the above is used then Adaptive Server Enterprise login and password.
- You can assign external logins to Adaptive Server roles. You can assign anyone with a particular role a corresponding login name and password for any given remote server.
- When you establish a connection to a remote server for a user that has more than one role active, each role is searched for an external login mapping and uses the first mapping it finds to establish the login. This is the same order as displayed by the stored procedure `sp_activeroles`.
- If you perform role mapping, and a user's role is changed (using `set role`), any connections made to remote servers that used role mapping must be disconnected. You cannot do this if a transaction is pending. You cannot use `set role` if a transaction is active and remote connections are present that used role mapping.
- Before running `sp_addexternlogin`, add the remote server to Adaptive Server with `sp_addserver`.
- *externname* and *externpasswd* must be a valid user and password combination on the node where the *server* runs.
- Sites with automatic password expiration need to plan for periodic updates of passwords for external logins.
- Use `sp_dropexternlogin` to remove the definition of the external login.

- sp\_addexternlogin cannot be used from within a transaction.
- The “sa” account and the *loginame* account are the only users who can modify remote access for a given local user.

Permissions Only the *loginame*, a System Administrator, and a System Security Officer can execute sp\_addexternlogin.

Auditing Values in event and extrainfo columns from the sysaudits table are:

Command or access			
Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** sp\_addserver, sp\_dropexternlogin, sp\_helpexternlogin, sp\_helpserver

## sp\_addgroup

Description	Adds a group to a database. Groups are used as collective names in granting and revoking privileges.
Syntax	<code>sp_addgroup <i>grpname</i></code>
Parameters	<i>grpname</i> is the name of the group. Group names must conform to the rules for identifiers.
Examples	Creates a group named accounting in the current database:  <code>sp_addgroup accounting</code>
Usage	<ul style="list-style-type: none"> <li>• <code>sp_addgroup</code> adds the new group to a database's <code>sysusers</code> table. Each group's user ID (<code>uid</code>) is 16384 or larger (except "public," which is always 0).</li> <li>• A group and a user cannot have the same name.</li> <li>• Once a group has been created, add new users with <code>sp_adduser</code>. To add an existing user to a group, use <code>sp_changegroup</code>.</li> <li>• Every database is created with a group named "public". Every user is automatically a member of "public". Each user can be a member of one additional group.</li> </ul>
Permissions	Only the Database Owner, a System Administrator, or a System Security Officer can execute <code>sp_addgroup</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also	<p><b>Commands</b> grant, revoke</p> <p><b>System procedures</b> <code>sp_adduser</code>, <code>sp_changegroup</code>, <code>sp_dropgroup</code>, <code>sp_helpgroup</code></p>
----------	---

## sp\_addlanguage

Description	Defines the names of the months and days for an alternate language and its date format.
Syntax	sp_addlanguage <i>language</i> , <i>alias</i> , <i>months</i> , <i>shortmons</i> , <i>days</i> , <i>datefmt</i> , <i>datefirst</i>
Parameters	<p><i>language</i> is the official language name for the language, entered in 7-bit ASCII characters only.</p> <p><i>alias</i> substitutes for the alternate language's official name. Enter either "null", to make the alias the same as the official language name, or a name you prefer. You can use 8-bit ASCII characters in an alias—"français", for example—if your terminal supports them.</p> <p><i>months</i> is a list of the full names of the 12 months, ordered from January through December, separated only by commas (no spaces allowed). Month names can be up to 20 characters long and can contain 8-bit ASCII characters.</p> <p><i>shortmons</i> is a list of the abbreviated names of the 12 months, ordered from January through December, separated only by commas (no spaces allowed). Month abbreviations can be up to 9 characters long and can contain 8-bit ASCII characters.</p> <p><i>days</i> is a list of the full names of the seven days, ordered from Monday through Sunday, separated only by commas (no spaces allowed). Day names can be up to 30 characters long and can contain 8-bit ASCII characters.</p> <p><i>datefmt</i> is the date order of the date parts month/day/year for entering <i>datetime</i>, <i>smalldatetime</i>, <i>date</i> or <i>time</i> data. Valid arguments are <i>mdy</i>, <i>dmy</i>, <i>ymd</i>, <i>ydm</i>, <i>myd</i>, or <i>dym</i>. "dmy" indicates that dates are in day/month/year order.</p> <p><i>datefirst</i> sets the number of the first weekday for date calculations. For example, Monday is 1, Tuesday is 2, and so on.</p>



## Examples

This stored procedure adds French to the languages available on the server. “null” makes the alias the same as the official name, “french”. Date order is “dmy” – day/month/year. “1” specifies that lundi, the first item in the *days* list, is the first weekday. Because the French do not capitalize the names of the days and months except when they appear at the beginning of a sentence, this example shows them being added in lowercase:

```
sp_addlanguage french, null,
    "janvier, fevrier, mars, avril, mai, juin, juillet,
    aout, septembre, octobre, novembre, decembre",
    "jan, fev, mars, avr, mai, juin, jui, aout, sept, oct,
    nov, dec",
    "lundi, mardi, mercredi, jeudi, vendredi, samedi,
    dimanche",
    dmy, 1
```

## Usage

- Usually, you add alternate languages from one of Adaptive Server’s Language Modules using the langinstall utility or the Adaptive Server installation program. A Language Module supplies the names of the dates and translated error messages for that language. However, if a Language Module is not provided with your server, use `sp_addlanguage` to define the date names and format.
- Use `sp_modifylogin` to change a user’s default language. If you set a user’s default language to a language added with `sp_addlanguage`, and there are no localization files for the language, the users receive an informational message when they log in, indicating that their client software could not open the localization files.

*System Table Changes*

- `sp_addlanguage` creates an entry in `master.dbo.syslanguages`, inserting a unique numeric value in the `langid` column for each alternate language. `langid` 0 is reserved for U.S. English.
- The *language* parameter becomes the official language name, stored in the `name` column of `master.dbo.syslanguages`. Language names must be unique. Use `sp_helplanguage` to display a list of the alternate languages available on Adaptive Server.
- `sp_addlanguage` sets the `alias` column in `master.dbo.syslanguages` to the official language name if NULL is entered for `alias`, but System Administrators can change the value of `syslanguage.alias` with `sp_setlangalias`.
- `sp_addlanguage` sets the `upgrade` column in `master.dbo.syslanguages` to 0.

Dates for Languages added with *sp\_addlanguage*

- For alternate languages added with Language Modules, Adaptive Server sends date values to clients as `datetime` datatype, and the clients use localization files to display the dates in the user's current language. For date strings added with *sp\_addlanguage*, use the `convert` function to convert the dates to character data in the server, where *pubdate* is `datetime` data and *table* is any table:

```
select convert(char, pubdate) from table
```

- When users perform data entry on date values and need to use date names created with *sp\_addlanguage*, the client must have these values input as character data, and sent to the server as character data.

Permissions Only a System Administrator can execute *sp\_addlanguage*.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** set

**System procedures** `sp_droplanguage`, `sp_helplanguage`, `sp_modifylogin`, `sp_setlangalias`

**Utilities** `langinstall`

## sp\_addlogin

Description	Adds a new user account to Adaptive Server; specifies the password expiration interval, the minimum password length, and the maximum number of failed logins allowed for a specified login at creation.
Syntax	<pre>sp_addlogin <i>loginame</i>, <i>passwd</i> [, <i>defdb</i>]            [, <i>deflanguage</i>] [, <i>fullname</i>] [, <i>passwddexp</i>]            [, <i>minpwrlen</i>] [, <i>maxfailedlogins</i>] [, <i>auth_mech</i>]</pre>
Parameters	<p><i>loginame</i> is the user's login name. Login names must conform to the rules for identifiers.</p> <p><i>passwd</i> is the user's password. Passwords must be at least 6 characters long. If you specify a shorter password, <code>sp_addlogin</code> returns an error message and exits. Enclose passwords that include characters besides A – Z, a – z, or 0 – 9 in quotation marks. Also enclose passwords that <i>begin</i> with 0-9 in quotation marks.</p> <p><code>sp_addlogin</code> invokes the password complexity checks introduced in Adaptive Server 15.0.2.</p> <p><i>defdb</i> is the name of the default database assigned when a user logs into Adaptive Server. If you do not specify <i>defdb</i>, the default, master, is used.</p> <p><i>deflanguage</i> is the official name of the default language assigned when a user logs into Adaptive Server. The Adaptive Server default language, defined by the default language id configuration parameter, is used if you do not specify <i>deflanguage</i>.</p> <p><i>fullname</i> is the full name of the user who owns the login account. This can be used for documentation and identification purposes.</p> <p><i>passwddexp</i> specifies the password expiration interval in days. It can be any value between 0 and 32767, inclusive. The password expires when the number of specified days passes. For example, if you create a new login on August 1, 2007 at 10:30 AM, with a password expiration interval of 30 days, the password expires on August 31, 2007 at 10:30 AM.</p> <p><i>minpwrlen</i> specifies the minimum password length required for that login. The values range between 0 and 30 characters.</p>

*maxfailedlogins*

is the number of allowable failed login attempts. It can be any whole number between 0 and 32767.

*auth\_mech*

defines the authentication mechanism.

#### Examples

**Example 1** Creates an Adaptive Server login for “albert” with the password “longer1” and the default database corporate:

```
sp_addlogin albert, longer1, corporate
```

**Example 2** Creates an Adaptive Server login for “claire.” Her password is “bleurouge,” her default database is public\_db, and her default language is French:

```
sp_addlogin claire, bleurouge, public_db, french
```

**Example 3** Creates an Adaptive Server login for “robertw.” His password is “terrible2.” his default database is public\_db, and his full name is “Robert Willis.” Do not enclose null in quotes:

```
sp_addlogin robertw, terrible2, public_db, null, "Robert Willis"
```

**Example 4** Creates a login for “susan” with a password of “wonderful,” a full name of “Susan B. Anthony,” and the server’s default database and language. Do not enclose null in quotes:

```
sp_addlogin susan, wonderful, null, null, "Susan B. Anthony"
```

Alternately, you can also use the following:

```
sp_addlogin susan, wonderful, @fullname="Susan B. Anthony"
```

**Example 5** Configures the login “mylogin” to override global authentication mechanisms:

```
sp_addlogin mylogin, mypassword, @auth_mech = ASE
```

#### Usage

- For ease of management, Sybase strongly recommends that all users’ Adaptive Server login names be the same as their operating system login names. This makes it easier to correlate audit data between the operating system and Adaptive Server. Otherwise, keep a record of the correspondence between operating system and server login names.
- After assigning a default database to a user with sp\_addlogin, the Database Owner or System Administrator must provide access to the database by executing sp\_adduser or sp\_addalias.
- auth\_mech can take the same values as sp\_modify login "authenticate with" option.

- At login creation, the `crdate` column in `syslogins` is set to the current time.
- Although a user can use `sp_modifylogin` to change his or her own default database at any time, a database cannot be used without permission from the Database Owner.
- Users can use `sp_password` at any time to change their own password. A System Security Officer can use `sp_password` to change any user's password.
- Users can use `sp_modifylogin` to change their own default language. A System Administrator can use `sp_modifylogin` to change any user's default language.
- Users can use `sp_modifylogin` to change their own *fullname*. A System Administrator can use `sp_modifylogin` to change any user's *fullname*.
- *In cluster environments* – `sp_addlogin` fails if you attempt to include a local temporary database as a default database for any login.
- At login creation, the `crdate` column in `syslogins` is set to the current time.

*sp\_modifylogin* and *sp\_addlogin* *authenticate with option*

The `authenticate with option` to `sp_modifylogin` or `sp_addlogin` requires that the login use *only* a specified authentication mechanism. The supported authentication mechanisms are:

- ASE
- LDAP
- PAM
- Kerberos
- ANY

Using `authenticate with` with these supported authentication mechanisms allows you to override the server-wide configuration parameters `unified login required`, `enable ldap user auth`, and `enable pam user auth`.

If more than one external authentication mechanism is configured and a login-specific `authenticate with option` has not been set, the external authentication mechanism is based on the following order:

- 1 Kerberos
- 2 LDAP
- 3 PAM

For example, if both PAM and LDAP are configured, LDAP is chosen for external authentication, not PAM.

At the time of authentication, exactly one external authentication mechanism is attempted. Depending on the value of configuration parameters, you can try the “ASE” authentication mechanism when the external authentication fails.

When none of the external authentication mechanisms are configured, Adaptive Server uses ASE authentication.

### **Using *authenticate with* to override server-wide authentication options**

---

**Note** You must have sso\_role permissions to modify the *authenticate with* option for a login.

---

To configure external authentication mechanisms such as Kerberos, LDAP, or PAM, Sybase recommends that you determine the server-wide authentication setting that matches your company’s security policy. This server-wide setting is appropriate for most client connections. Then, you can set individual logins to another authentication mechanism using the *authenticate with* option.

You can use *authenticate with* to specify an the external authentication mechanisms Kerberos, LDAP, and PAM. You can also issue *sp\_modifylogin* or *sp\_addlogin* *authenticate with* to set the authentication mechanism to “ASE” to use only the Adaptive Server internal authentication mechanism. To allow any authentication mechanism, use *authenticate with ANY*.

---

**Note** When authentication mechanism “ANY” (the default) is set for a login, the login uses the server-wide configuration settings to control authentication.

---

*sp\_modifylogin* also checks for any conflicts with any login mapping specified by a previous *sp\_maplogin*.

### Examples

**Example 1** Creates a local account to run a batch application. Consider an environment that uses Kerberos for a centralized user account repository and requires its general population of users to *authenticate* using Kerberos, Configure Kerberos by setting these parameters:

```
sp_configure "use security services", 1
go

sp_configure "unified login required", 1
go
```

These configuration parameters now require all user logins, other than “sa,” to authenticate using Kerberos to gain access to the Adaptive Server.

Now consider a nightly batch operation run by the Adaptive Server database administrator or operator, which may authenticate locally without requiring the account to exist in the Kerberos repository. Use `authenticate with` option to `sp_modifylogin` or `sp_addlogin`:

```
sp_addlogin nightlybatch, localpassword, ...
go
sp_modifylogin nightlybatch, 'authenticate with', 'ASE'
go
```

**Example 2** Migrates users from Adaptive Server authentication to LDAP user authentication, using a phased approach for moving clients from local Adaptive Server authentication to LDAP user authentication. The LDAP directory server has been set up but has not yet been populated with all user accounts. A small population of users has agreed to a pilot program to test out LDAP for external authentication to Adaptive Server. To allow failover to ASE authentication when authentication with the LDAP directory server fails or the LDAP server is unavailable, enter:

```
sp_configure 'enable ldap user auth', 1
go
```

Users without LDAP accounts fail over to Adaptive Server authentication. The users in the pilot program are automatically added to the LDAP directory server and may begin authenticating using the LDAP directory server.

A user can use the `@@authmech` global variable to determine which authentication mechanism was used to authenticate with with:

```
select @@authmech
```

You can require users in the pilot program to use only LDAP authentication by entering:

```
sp_maplogin loginame, 'authenticate with', 'ldap'
go
```

If you decide to use LDAP user authentication for all users, change the configuration parameter to level 2. Any logins set to authenticate with LDAP during the pilot program can be reset to the default value “ANY”. Because the configuration parameter is set to 2. “ANY” logins are still required to use LDAP:

```
sp_configure 'enable ldap user auth', 2
go
sp_maplogin loginame, 'authenticate with', 'any'
```

go

---

**Note** If a login has authenticate with set to a specific authentication mechanism such as LDAP, Kerberos, PAM, or ASE, that login can use only that mechanism for authentication. Sybase suggests that you use authentication with to set exceptions to the server-wide settings and to force a particular authentication mechanism to be used.

---

Permissions Only a System Security Officer can execute sp\_addlogin.

Auditing Values in event and extrainfo columns from the sysaudits table are:

---

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** sp\_addalias, sp\_adduser, sp\_droplogin, sp\_locklogin, sp\_modifylogin, sp\_password, sp\_role



## sp\_addmessage

Description	Adds user-defined messages to sysusermessages for use by stored procedure print and raiserror calls and by sp_bindmsg.
Syntax	<code>sp_addmessage <i>message_num</i>, <i>message_text</i> [, <i>language</i> [, <i>with_log</i> [, <i>replace</i>]]]</code>
Parameters	<p><i>message_num</i> is the message number of the message to add. The message number for a user-defined message must be 20000 or greater.</p> <p><i>message_text</i> is the text of the message to add. The maximum length is 1024 bytes.</p> <p><i>language</i> is the language of the message to add. This must be a valid language name in the syslanguages table. If this parameter is missing, Adaptive Server assumes that messages are in the default session language indicated by @@langid.</p> <p><i>with_log</i> specifies whether the message is logged in the Adaptive Server error log as well as in the Windows NT Event Log on Windows NT servers, if logging is enabled. If <i>with_log</i> is TRUE, the message is logged, regardless of the severity of the error. If <i>with_log</i> is FALSE, the message may or may not be logged, depending on the severity of the error. If you do not specify a value for <i>with_log</i>, the default is FALSE.</p> <p><i>replace</i> specifies whether to overwrite an existing message of the same number and <i>languid</i>. If <i>replace</i> is specified, the existing message is overwritten; if <i>replace</i> is omitted, it is not. If you do not specify a value for <i>replace</i>, the parameter's default behavior specifies that the existing message will not be overwritten.</p>
Examples	<p><b>Example 1</b> Adds a message with the number 20001 to sysusermessages:</p> <pre>sp_addmessage 20001, "The table '%1!' is not owned by the user '%2!'."</pre> <p><b>Example 2</b> Adds a message with the number 20002 to sysusermessages. This message is logged in the Adaptive Server error log, as well as in the Windows NT Event Log on Windows NT servers, if event logging is enabled. If a message numbered 20002 exists in the default session language, this message overwrites the old message:</p> <pre>sp_addmessage 20002, "The procedure '%1!' is not owned by the user '%2!'." , NULL, TRUE, "replace"</pre>

- Usage
- sp\_addmessage does not overwrite an existing message of the same number and *langid* unless you specify @replace = "replace".
  - print and raiserror recognize placeholders in the message text to print out. A single message can contain up to 20 unique placeholders in any order. These placeholders are replaced with the formatted contents of any arguments that follow the message when the text of the message is sent to the client.
- The placeholders are numbered to allow reordering of the arguments when Adaptive Server is translating a message to a language with a different grammatical structure. A placeholder for an argument appears as “%*nn*!”, a percent sign (%), followed by an integer from 1 to 20, followed by an exclamation point (!). The integer represents the argument number in the string in the argument list. “%1!” is the first argument in the original version, “%2!” is the second argument, and so on.
- Only the user who created a message can execute sp\_addmessage with the replace option to replace that original message.

Permissions Any user can execute sp\_addmessage. However, only the user who created a message can execute sp\_addmessage with the replace option to replace that original message.

Auditing Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
15	create	sp_addmessage	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – Message number</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** print, raiserror

**System procedures** sp\_altermessage, sp\_bindmsg, sp\_dropmessage,  
sp\_getmessage

## sp\_addobjectdef

**Description** **Component Integration Services only** Specifies the mapping between a local table and an external storage location.

**Syntax** sp\_addobjectdef *tablename*, *objectdef* [, "*objecttype*"]

**Parameters** *tablename*  
is the name of the object as it is defined in a local table. The *tablename* can be in any of the following forms:

*dbname.owner.object*  
*dbname..object*  
*owner.object*  
*object*

*dbname* and *owner* are optional. *object* is required. If you do not specify an *owner*, the default (current user name) is used. If you specify a *dbname*, it must be the current database name, and you must specify *owner* or mark the owner with a placeholder in the format *dbname..object*. Enclose any multipart *tablename* values in quotes.

*objectdef*  
is a string naming the external storage location of the object. The *objecttype* at *objectdef* can be a table, view, or read-only remote procedure call (RPC) result set accessible to a remote server. A table, view, or RPC uses the following format for *objectdef*:

*server\_name.dbname.owner.object*

*server\_name* and *object* are required. *dbname* and *owner* are optional, but if they are not supplied, a placeholder in the format *dbname..object*, is required.

See “Server Classes” in the *Component Integration Services User’s Guide* for more information.

*objecttype*  
is one of the values that specify the format of the object named by *objectdef*. Table 1-2 describes the valid values. Enclose the *objecttype* value in quotes.

**Table 1-2: Allowable values for objecttype**

<b>Value</b>	<b>Description</b>
table	Indicates that the object named by <i>objectdef</i> is a table accessible to a remote server. This value is the default for <i>objecttype</i> .
view	Indicates that the object named by <i>objectdef</i> is a view managed by a remote server and processed as a table.

Value	Description
rpc	Indicates that the object named by <i>objectdef</i> is an RPC managed by a remote server. Adaptive Server processes the result set from the RPC as a read-only table.

Table 1-3 summarizes how each *objecttype* is used.

**Table 1-3: Summary of objecttype uses**

<i>objecttype</i>	<i>create table</i>	<i>create existing table</i>	Write to table	Read from table
table	Yes	Yes	Yes	Yes
view	No	Yes	Yes	Yes
rpc	No	Yes	No	Yes

#### Examples

**Example 1** Maps the local table `accounts` in the database `finance` to the remote object `pubs.dbo.accounts` in the remote server named `SYBASE`. The current database must be `finance`. A subsequent `create table` creates a table in the `pubs` database. If `pubs.dbo.accounts` is an existing table, a `create existing table` statement populates the table `finance.dbo.accounts` with information about the remote table:

```
sp_addobjectdef "finance.dbo.accounts", "SYBASE.pubs.dbo.accounts", "table"
```

**Example 2** Maps the local table `stockcheck` to an RPC named `stockcheck` on remote server `NEWYORK` in the database `wallstreet` with owner "kelly". The result set from RPC `stockcheck` is seen as a read-only table. Typically, the next operation would be a `create existing table` statement for the object `stockcheck`:

```
sp_addobjectdef stockcheck, "NEWYORK.wallstreet.kelly.stockcheck", "rpc"
```

#### Usage

- `sp_addobjectdef` specifies the mapping between a local table and an external storage location. It identifies the format of the object at that location. You can use `sp_addobjectdef` only when Component Integration Services is installed and configured.
- `sp_addobjectdef` replaces the `sp_addtabledef` command. `sp_addobjectdef` allows existing scripts to run without modification. Internally, `sp_addtabledef` invokes `sp_addobjectdef`.
- Only the System Administrator can provide the name of another user as a table owner.
- When *objecttype* is `table`, `view`, or `rpc`, the *objectdef* parameter takes the following form:

```
"server_name.database.owner.tablename"
```

- *server\_name* – represents a server that has already been added to sys.servers by sp\_addserver.
- *database* – may not be required. Some server classes do not support it.
- *owner* – should always be provided, to avoid ambiguity. If you do not specify *owner*, the remote object referenced may vary, depending on whether or not the external login corresponds to the remote object owner.
- *tablename* – is the name of a remote server table.
- Use sp\_addobjectdef before issuing any create table or create existing table commands. create table is valid only for the *objecttype* values table and file. When either create table or create existing table is used, Adaptive Server checks sysattributes to determine whether any table mapping has been specified for the object. Follow the *objecttype* values view and rpc with create existing table statements.
- After the table has been created, all future references to the local table name (by select, insert, delete and update) are mapped to the correct location.

Permissions

Any user can execute sp\_addobjectdef.

Auditing

Values in event and extrainfo columns from the sys.audits table are:

Command or access			
Event	Audit option	audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** create existing table, create table, drop table

**System procedures** sp\_addlogin, sp\_addserver, sp\_defaultloc, sp\_dropobjectdef, sp\_helpserver

## sp\_addremotelogin

Description	Authorizes a new remote server user by adding an entry to master.dbo.sysremotelogins.
Syntax	<code>sp_addremotelogin remoteserver [, loginname [, remotename] ]</code>
Parameters	<p><i>remoteserver</i> is the name of the remote server to which the remote login applies. This server must be known to the local server by an entry in the master.dbo.sysservers table, which was created with sp_addserver.</p> <hr/> <p><b>Note</b> This manual page uses the term “local server” to refer to the server that is executing the remote procedures run from a “remote server.”</p> <hr/> <p><i>loginname</i> is the login name of the user on the local server. <i>loginname</i> must already exist in the master.dbo.syslogins table.</p> <p><i>remotename</i> is the name used by the remote server when logging into the local server. All <i>remotenames</i> that are not explicitly matched to a local <i>loginname</i> are automatically matched to a local name. In Example 1 , the local name is the remote name that is used to log in. In Example 2 , the local name is “albert.”</p>
Examples	<p><b>Example 1</b> Creates an entry in the sysremotelogins table for the remote server GATEWAY, for purposes of login validation. This is a simple way to map remote names to local names when the local and remote servers have the same users:</p> <pre>sp_addremotelogin GATEWAY</pre> <p>This example results in a value of -1 for the suid column and a value of NULL for the remoteusername in a row of sysremotelogins.</p> <p><b>Example 2</b> Creates an entry that maps all logins from the remote server GATEWAY to the local user name “albert”. Adaptive Server adds a row to sysremotelogins with Albert’s server user ID in the suid column and a null value for the remoteusername:</p> <pre>sp_addremotelogin GATEWAY, albert</pre> <p>For these logins to be able to run RPCs on the local server, they must specify a password for the RPC connection when they log into the local server, or they must be “trusted” on the local server. To define these logins as “trusted”, use sp_remotooption.</p>

**Example 3** Maps a remote login from the remote user “pogo” on the remote server GATEWAY to the local user “ralph”. Adaptive Server adds a row to sysremotelogins with Ralph’s server user ID in the suid column and “pogo” in the remoteusername column:

```
sp_addremotelogin GATEWAY, ralph, pogo
```

Usage

- When a remote login is received, the local server tries to map the remote user to a local user in three different ways:
  - First, the local server looks for a row in sysremotelogins that matches the remote server name and the remote user name. If the local server finds a matching row, the local server user ID for that row is used to log in the remote user. This applies to mappings from a specified remote user.
  - If no matching row is found, the local server searches for a row that has a null remote name and a local server user ID other than -1. If such a row is found, the remote user is mapped to the local server user ID in that row. This applies to mappings from any remote user from the remote server to a specific local name.
  - Finally, if the previous attempts failed, the local server checks the sysremotelogins table for an entry that has a null remote name and a local server user ID of -1. If such a row is found, the local server uses the remote name supplied by the remote server to look for a local server user ID in the syslogins table. This applies when login names from the remote server and the local server are the same.
- The name of the local user may be different on the remote server.
- If you use sp\_addremotelogin to map all users from a remote server to the same local name, use sp\_remotoption to specify the “trusted” option for those users. For example, if all users from the server GOODSRV that are mapped to “albert” are to be “trusted”, use sp\_remotoption as follows:

```
sp_remotoption GOODSRV, albert, NULL, trusted, true
```

Logins that are not specified as “trusted” cannot execute RPCs on the local server unless they specify passwords for the local server when they log into the remote server. In Open Client™ Client-Library™, the user can use the ct\_remote\_pwd routine to specify a password for server-to-server connections. isql and bcp do not permit users to specify a password for RPC connections.



If users are logged into the remote server using “unified login”, these logins are already authenticated by a security mechanism. These logins must also be trusted on the local server, or the users must specify passwords for the server when they log into the remote server.

- Every remote login entry has a status. The default status for the trusted option is false (not trusted). This means that when a remote login comes in using that entry, the password is checked. If you do not want the password to be checked, change the status of the trusted option to true with `sp_remoteoption`.

**Permissions** Only a System Administrator can execute `sp_addrmotologin`.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

**See also** **Documents** See the *System Administration Guide* for more information about setting up servers for remote procedure calls and for using “unified login.”

**System procedures** `sp_addlogin`, `sp_addserver`, `sp_dropremotelogin`, `sp_helpremotelogin`, `sp_helprotect`, `sp_helpserver`, `sp_remoteoption`

**Utility** `isql`

## sp\_addsegment

Description	Defines a segment on a database device in a database.
Syntax	<code>sp_addsegment segname, dbname, devname</code>
Parameters	<p><i>segname</i> is the name of the new segment to add to the syssegments table of the database. Segment names are unique in each database.</p> <p><i>dbname</i> specifies the name of the database in which to define the segment. <i>dbname</i> must be the name of the current database or match the database name qualifying <code>sp_addsegment</code>.</p> <p><i>devname</i> is the name of the database device in which to locate <i>segname</i>. A database device can have more than one segment associated with it.</p>
Examples	<p><b>Example 1</b> Creates a segment named indexes for the database pubs2 on the database device named dev1:</p> <pre>sp_addsegment indexes, pubs2, dev1</pre> <p><b>Example 2</b> Creates a segment named indexes for the pubs2 database on the database device named pubs2_dev:</p> <pre>disk init     name = "pubs2_dev",     physname = "/dev/pubs_2_dev",     vdevno = 9, size = 5120 go alter database pubs2 on pubs2_dev = 2 go pubs2..sp_addsegment indexes, pubs2, dev1</pre>
Usage	<ul style="list-style-type: none"><li>You cannot create a segment on a device that already has an exclusive segment. If you attempt to do so, you see an error message similar to:<pre>A segment with a virtually hashed table exists on device orders_dat.</pre></li><li><code>sp_addsegment</code> defines segment names for database devices created with <code>disk init</code> and assigned to a specific database with an <code>alter database</code> or <code>create database</code> command.</li><li>After defining a segment, use it in <code>create table</code> and <code>create index</code> commands and in the <code>sp_placeobject</code> procedure to place a table or index on the segment.</li></ul>

When a table or index is created on a particular segment, all subsequent data for the table or index is located on the segment.

- Use the system procedure `sp_extendsegment` to extend the range of a segment to another database device used by the same database.
- If a database is extended with `alter database` on a device used by that database, the segments mapped to that device are also extended.
- The system and default segments are mapped to each database device included in a `create database` or `alter database` command. The logsegment is also mapped to each device, unless you place it on a separate device with the log on extension to `create database` or with `sp_logdevice`. See the *System Administration Guide* for more information.
- Although you can use `sp_addsegment` in a database that has both data and the log on the same device, such as when the database is created without the log on option, Adaptive Server returns an error message if you create a database using:

```
create database dbname on devicename log on devicename with override
```

**Permissions** Only the Database Owner or a System Administrator can execute `sp_addsegment`.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

**See also** **Commands** `alter database`, `create index`, `create table`, `disk init`

**System procedures** `sp_dropsegment`, `sp_extendsegment`, `sp_helpdb`, `sp_helpdevice`, `sp_placeobject`

## sp\_addserver

**Description** Defines a remote server, or the name of the local server; specifies the server for remote procedure calls (RPCs) when using the host and port parameters.

**Syntax** sp\_addserver *lname* [, *class* [, *pname*]]  
sp\_addserver '*logical\_server\_name*', ASEnterprise, '*host:port:filter*'

**Parameters** *lname*  
is the name used to address the server on your system. sp\_addserver adds a row to the syssservers table if there is no entry already present for *lname*. Server names must be unique and must conform to the rules for identifiers.

*class*  
identifies the category of server being added. A server *class* of “null” defaults to “ASEnterprise”. Allowable values for the *class* parameter are:

- local – local server (there can be only one) used only once after start-up, or after restarting Adaptive Server, to identify the local server name so that it can appear in messages printed by Adaptive Server
- null – remote server with no category defined
- ASEnterprise – all versions of Adaptive Server Enterprise; support for SQL Server 4.9 is not provided.
- ASAnywhere – Adaptive Server Anywhere version 6.0 or later.
- ASIQ – a server with server class ASIQ is any version of Adaptive Server IQ of 12.0 or later.
- direct\_connect (*Component Integration Services only*) – an Open Server-based application that conforms to the direct\_connect interface specification.
- sds – conforms to the interface requirements of a Specialty Data Store™ as described in the Adaptive Server Specialty Data Store Developer’s Kit manual.

See “Remote Servers” in Chapter 2, “Understanding Component Integration Services” of the *Component Integration Services User’s Guide* for details on these parameter values.

---

**Note** Adaptive Server does not support server class db2. To use db2, migrate your db2 server class to direct\_connect class.

---

*pname*

is the name in the interfaces file for the server named *lname*. This enables you to establish local aliases for other Adaptive Servers or Backup Servers that you may need to communicate with. If you do not specify a *pname*, *lname* is used.

*Component Integration Services only* – You can use *pname* to specify the hostname or IP address and the port of the server you wish to connect to. This enables you to bypass the need for directory services (such as LDAP or an interfaces file) for the server when using the CT-Library. Use the following format:

```
"hostname:port"
"ipaddr:port"
```

---

**Note** You must enclose the hostname and port with single or double quotes to use this option.

---

*filter*

in cluster environments – adds a remote server for remote procedure calls (RPCs).

```
filter = ssl [= 'CN = common_name']
```

Use this format to declare the *host:port* number:

```
ip_address:port
```

## Examples

**Example 1** *In cluster environments* – adds a remote server named “big\_logical\_server.”

```
sp_addserver 'big_logical_server', ASEntprise,
'maynard:23954:ssl= "CN=ase1.big server 1.com"
```

The rules for common names are the same as those used for dynamic listeners and the directory service entries.

**Example 2** Adds an entry for a remote server named GATEWAY in master.dbo.sysservers. The *pname* is also GATEWAY:

```
sp_addserver GATEWAY
```

**Example 3** Adds an entry for a remote server named GATEWAY in master.dbo.sysservers. The *pname* is VIOLET. If there is already a sysservers entry for GATEWAY with a different *pname*, the *pname* of server GATEWAY changes to VIOLET:

```
sp_addserver GATEWAY, null, VIOLET
```

**Example 4** Adds an entry for the local server named PRODUCTION:

```
sp_addserver PRODUCTION, local
```

**Example 5** *Component Integration Services only* – Adds an entry for a remote Adaptive Server with the host name “myhost” with port number 10224:

```
sp_addserver S1, ASEnterprise, "myhost:10224"
```

---

**Note** If you use this syntax for *pname*, the Adaptive Server site handler cannot successfully connect to this server; only CIS connections recognize this syntax for *pname*.

---

**Example 6** *Component Integration Services only* – Adds an entry for a remote Adaptive Server with the host IP 192.123.456.010 with port number 11222:

```
sp_addserver S3, direct_connect, "192.123.456.010:11222"
```

Usage

- The syssservers table identifies the name of the local server and its options, and any remote servers that the local server can communicate with.  
  
To execute a remote procedure call on a remote server, the remote server must exist in the syssservers table.
- If *lname* already exists as a server name in the syssservers table, sp\_addserver changes the remote server’s srvnetname to the name specified by *pname*. When it does this, sp\_addserver reports which server it changed, what the old network name was, and what the new network name is.
- The installation or upgrade process for your server adds an entry in syssservers for a Backup Server. If you remove this entry, you cannot back up your databases.
- Adaptive Server requires that the Backup Server have an *lname* of SYB\_BACKUP. If you do not want to use that as the name of your Backup Server, or if you have more than one Backup Server running on your system, modify the *pname* for server SYB\_BACKUP with sp\_addserver so that Adaptive Server can communicate with Backup Server for database dumps and loads.
- If you specify an *lname*, *pname* and *class* that already exist in syssservers, sp\_addserver prints an error message and does not update syssservers.
- Use sp\_serveroption to set or clear server options.

Permissions

Only a System Security Officer can execute sp\_addserver.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Documents** *Component Integration Services User's Guide.*

**System procedures** sp\_addremotelogin, sp\_droptremotelogin, sp\_dropserver, sp\_helptremotelogin, sp\_helpserver, sp\_serveroption

## sp\_addthreshold

Description	Creates a threshold to monitor space on a database segment. When free space on the segment falls below the specified level, Adaptive Server executes the associated stored procedure.
Syntax	<code>sp_addthreshold dbname, segname, free_space, proc_name</code>
Parameters	<p><i>dbname</i> is the database for which to add the threshold. This must be the name of the current database.</p> <p><i>segname</i> is the segment for which to monitor free space. Use quotes when specifying the “default” segment.</p> <p><i>free_space</i> is the number of free pages at which the threshold is crossed. When free space in the segment falls below this level, Adaptive Server executes the associated stored procedure.</p> <p><i>proc_name</i> is the stored procedure to be executed when the amount of free space on <i>segname</i> drops below <i>free_space</i>. The procedure can be located in any database on the current Adaptive Server or on an Open Server. Thresholds cannot execute procedures on remote Adaptive Servers.</p>
Examples	<p><b>Example 1</b> Creates a threshold for segment1. When the free space on segment1 drops below 200 pages, Adaptive Server executes the procedure pr_warning:</p> <pre>sp_addthreshold mydb, segment1, 200, pr_warning</pre> <p><b>Example 2</b> Creates a threshold for the user_data segment. When the free space on user_data falls below 100 pages, Adaptive Server executes a remote procedure call to the Open Server mail_me procedure:</p> <pre>sp_addthreshold userdb, user_data, 100, "o_server...mail_me"</pre> <p><b>Example 3</b> Creates a threshold on the indexes segment of the pubs2 database. You can issue this command from any database:</p> <pre>pubs2..sp_addthreshold pubs2, indexes, 100, pr_warning</pre>
Usage	<p>Crossing a threshold</p> <ul style="list-style-type: none"><li>When a threshold is crossed, Adaptive Server executes the associated stored procedure. Adaptive Server uses the following search path for the threshold procedure:</li></ul>



- If the procedure name does not specify a database, Adaptive Server looks in the database in which the threshold was crossed.
- If the procedure is not found in this database, and the procedure name begins with “sp\_”, Adaptive Server looks in the sybsystemprocs database.

If the procedure is not found in either database, Adaptive Server sends an error message to the error log.

- Adaptive Server uses a **hysteresis value**, the global variable @@*thresh\_hysteresis*, to determine how sensitive thresholds are to variations in free space. Once a threshold executes its procedure, it is deactivated. The threshold remains inactive until the amount of free space in the segment rises to @@*thresh\_hysteresis* pages above the threshold. This prevents thresholds from executing their procedures repeatedly in response to minor fluctuations in free space.

#### The last-chance threshold

- By default, Adaptive Server monitors the free space on the segment where the log resides and executes *sp\_thresholdaction* when the amount of free space is less than that required to permit a successful dump of the transaction log. This amount of free space, called the **last-chance threshold**, is calculated by Adaptive Server and cannot be changed by users.
- If the last-chance threshold is crossed before a transaction is logged, Adaptive Server suspends the transaction until log space is freed. Use *sp\_dboption* to change this behavior for a particular database. *sp\_dboption* "abort tran on log full", true causes Adaptive Server to roll back all transactions that have not yet been logged when the last-chance threshold is crossed.
- All databases have a last-chance threshold, including master. The threshold is an estimate of the number of free log pages that are required to back up the transaction log. As you allocate more space to the log segment, Adaptive Server automatically adjusts the last-chance threshold.

#### Creating additional thresholds

- Each database can have up to 256 thresholds, including the last-chance threshold.
- When you add a threshold, it must be at least 2 times @@*thresh\_hysteresis* pages from the closest threshold.

### Creating threshold procedures

- Any user with create procedure permission can create a threshold procedure in a database. Usually, a System Administrator creates sp\_thresholdaction in the sybsystemprocs database, and the Database Owners create threshold procedures in user databases.
- sp\_addthreshold does not verify that the specified procedure exists. It is possible to add a threshold before creating the procedure it executes.
- sp\_addthreshold checks to ensure that the user adding the threshold procedure has been directly granted the “sa\_role”. All system roles active when the threshold procedure is created are entered in systhresholds as valid roles for the user writing the procedure. However, only directly granted system roles are activated when the threshold fires. Indirectly granted system roles and user-defined roles are not activated.
- Adaptive Server passes four parameters to a threshold procedure:
  - @dbname, varchar(30), which identifies the database
  - @segmentname, varchar(30), which identifies the segment
  - @space\_left, int, which indicates the number of free pages associated with the threshold
  - @status, int, which has a value of 1 for last-chance thresholds and 0 for other thresholds

These parameters are passed by position rather than by name; your threshold procedure can use other names for them, but it must declare them in the order shown and with the correct datatypes.

- It is not necessary to create a different procedure for each threshold. To minimize maintenance, you can create a single threshold procedure in the sybsystemprocs database that is executed for all thresholds in Adaptive Server.
- Include print and raiserror statements in the threshold procedure to send output to the error log.

### Executing threshold procedures

- Tasks initiated when a threshold is crossed execute as background tasks. These tasks do not have an associated terminal or user session. If you execute sp\_who while these tasks are running, the status column shows “background”.

- Adaptive Server executes the threshold procedure with the permissions the user had at the time he or she added the threshold, minus any permissions that have since been revoked.
- Each threshold procedure uses one user connection, for as long as it takes for the procedure to execute.

#### Changing or deleting thresholds

- Use `sp_helpthreshold` for information about existing thresholds.
- Use `sp_modifythreshold` to associate a threshold with a new threshold procedure, free-space value, or segment. (You cannot change the free-space value or segment name associated with the last-chance threshold.)

Each time a user modifies a threshold, that user becomes the threshold owner. When the threshold is crossed, Adaptive Server executes the threshold with the permissions the owner had at the time he or she modified the threshold, minus any permissions that have since been revoked.

- Use `sp_dropthreshold` to drop a threshold from a segment.

#### Disabling free-space accounting

---

**Warning!** System procedures cannot provide accurate information about space allocation when free-space accounting is disabled.

---

- Use the `no free space acctg` option of `sp_dboption` to disable free-space accounting on non-log segments.
- You cannot disable free-space accounting on log segments.

#### Permissions

Only the Database Owner or a System Administrator can execute `sp_addthreshold`.

#### Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Documents** See the *System Administration Guide* for more information about using thresholds.

**Commands** create procedure, dump transaction

**Functions** lct\_admin

**System procedures** sp\_dboption, sp\_droptreshold, sp\_helpthreshold, sp\_modifythreshold, sp\_thresholdaction

## sp\_addtype

Description	Creates a user-defined datatype.
Syntax	<pre>sp_addtype <i>typename</i>,            <i>phystype</i> [(<i>length</i>)   (<i>precision</i> [, <i>scale</i>])]            [, "identity"   <i>nulltype</i>]</pre>
Parameters	<p><i>typename</i> is the name of the user-defined datatype. Type names must conform to the rules for identifiers and must be unique in each database.</p> <p><i>phystype</i> is the physical or Adaptive Server-supplied datatype on which to base the user-defined datatype. You can specify any Adaptive Server datatype except timestamp.</p> <p>The char, varchar, unichar, univarchar, nchar, nvarchar, binary, and varbinary datatypes expect a <i>length</i> in parentheses. If you do not supply one, Adaptive Server uses the default length of 1 character.</p> <p>The float datatype expects a binary <i>precision</i> in parentheses. If you do not supply one, Adaptive Server uses the default precision for your platform.</p> <p>The numeric and decimal datatypes expect a decimal <i>precision</i> and <i>scale</i>, in parentheses and separated by a comma. If you do not supply them, Adaptive Server uses a default precision of 18 and a scale of 0.</p> <p>Enclose physical types that include punctuation, such as parentheses or commas, within single or double quotes.</p> <p>identity indicates that the user-defined datatype has the IDENTITY property. Enclose the identity keyword within single or double quotes. You can specify the IDENTITY property only for numeric datatypes with a scale of 0.</p> <p>IDENTITY columns store sequential numbers, such as invoice numbers or employee numbers, that are generated by Adaptive Server. The value of the IDENTITY column uniquely identifies each row in a table. IDENTITY columns are not updatable and do not allow null values.</p>

*nulltype*

indicates how the user-defined datatype handles null value entries. Acceptable values for this parameter are null, NULL, nonull, NONULL, "not null", and "NOT NULL". Any *nulltype* that includes a blank space must be enclosed in single or double quotes.

If you omit both the IDENTITY property and the *nulltype*, Adaptive Server creates the datatype using the null mode defined for the database. By default, datatypes for which no *nulltype* is specified are created NOT NULL (that is, null values are not allowed and explicit entries are required). For compliance to the SQL standards, use the sp\_dboption system procedure to set the allow nulls by default option to true. This changes the database's null mode to NULL.

## Examples

**Example 1** Creates a user-defined datatype called ssn to be used for columns that hold social security numbers. Since the *nulltype* parameter is not specified, Adaptive Server creates the datatype using the database's default null mode. Notice that varchar(11) is enclosed in quotation marks, because it contains punctuation (parentheses):

```
sp_addtype ssn, "varchar(11) "
```

**Example 2** Creates a user-defined datatype called birthday that allows null values:

```
sp_addtype birthday, "datetime", null
```

**Example 3** Creates a user-defined datatype called temp52 used to store temperatures of up to 5 significant digits with 2 places to the right of the decimal point:

```
sp_addtype temp52, "numeric(5,2) "
```

**Example 4** Creates a user-defined datatype called row\_id with the IDENTITY property, to be used as a unique row identifier. Columns created with this datatype store system-generated values of up to 10 digits in length:

```
sp_addtype "row_id", "numeric(10,0)", "identity"
```

**Example 5** Creates a user-defined datatype with an underlying type of sysname. Although you cannot use the sysname datatype in a create table, alter table, or create procedure statement, you can use a user-defined datatype that is based on sysname:

```
sp_addtype systype, sysname
```

## Usage

- sp\_addtype creates a user-defined datatype and adds it to the systypes system table. Once a user-defined datatype is created, you can use it in create table and alter table statements and bind defaults and rules to it.

- Build each user-defined datatype in terms of one of the Adaptive Server-supplied datatypes, specifying the length or the precision and scale, as appropriate. You cannot override the length, precision, or scale in a create table or alter table statement.
- A user-defined datatype name must be unique in the database, but user-defined datatypes with different names can have the same definitions.
- If nchar or nvarchar is specified as the *phystype*, the maximum length of columns created with the new type is the length specified in sp\_addtype multiplied by the value of @@ncharsize at the time the type was added.
- If unichar or univarchar is specified as the *phystype*, the maximum length of columns created with the new type is the length specified in sp\_addtype multiplied by the value of 2 at the time the type was added.
- Each system type has a *hierarchy*, stored in the systypes system table. User-defined datatypes have the same datatype hierarchy as the physical types on which they are based. In a mixed-mode expression, all types are converted to a common type, the type with the lowest hierarchy.

Use the following query to list the hierarchy for each system-supplied and user-defined type in your database:

```
select name, hierarchy
from systypes
order by hierarchy
```

#### Datatypes with the IDENTITY property

- If a user-defined datatype is defined with the IDENTITY property, all columns created from it are IDENTITY columns. You can specify IDENTITY, NOT NULL, or neither in the create or alter table statement. Following are three different ways to create an IDENTITY column from a user-defined datatype with the IDENTITY property:

```
create table new_table (id_col IdentType)
create table new_table (id_col IdentType identity)
create table new_table (id_col IdentType not null)
```

- When you create a column with the create table or alter table statement, you can override the null type specified with the sp\_addtype system procedure:
  - Types specified as NOT NULL can be used to create NULL or IDENTITY columns.

- Types specified as NULL can be used to create NOT NULL columns, but not to create IDENTITY columns.

---

**Note** If you try to create a null column from an IDENTITY type, the create or alter table statement fails.

---

Permissions Any user can execute sp\_addtype.

Auditing Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>Roles – Current active roles</li> <li>Keywords or options – NULL</li> <li>Previous value – NULL</li> <li>Current value – NULL</li> <li>Other information – All input parameters</li> <li>Proxy information – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** create default, create rule, create table

**Datatypes** User-defined datatypes

**System procedures** sp\_bindefault, sp\_bindrule, sp\_dboption, sp\_droptype, sp\_rename, sp\_unbindefault, sp\_unbindrule



## sp\_addumpdevice

Description	Adds a dump device to Adaptive Server.
Syntax	<code>sp_addumpdevice {"tape"   "disk"}, <i>logicalname</i>, <i>physicalname</i> [, <i>tapesize</i>]</code>
Parameters	<p>"tape" for tape drives. Enclose tape in quotes.</p> <p>"disk" is for a disk or a file device. Enclose disk in quotes.</p> <p><i>logicalname</i> is the "logical" dump device name. It must be a valid identifier. Once you add a dump device to sysdevices, you can specify its logical name in the load and dump commands.</p> <p><i>physicalname</i> is the physical name of the device. You can specify either an absolute path name or a relative path name. During dumps and loads, the Backup Server resolves relative path names by looking in Adaptive Server's current working directory. Enclose names containing non-alphanumeric characters in quotation marks. For UNIX platforms, specify a non-rewinding tape device name.</p> <p><i>tapesize</i> is the capacity of the tape dump device, specified in megabytes. OpenVMS systems ignore the <i>tapesize</i> parameter if specified. Other platforms require this parameter for tape devices but ignore it for disk devices. The <i>tapesize</i> should be at least five database pages (each page requires 2048 bytes). Sybase recommends that you specify a capacity that is slightly below the rated capacity for your device.</p>
Examples	<p><b>Example 1</b> Adds a 40MB tape device. Dump and load commands can reference the device by its physical name, <code>/dev/nrmt8</code>, or its logical name, <code>mytapedump</code>:</p> <pre>sp_addumpdevice "tape", mytapedump, "/dev/nrmt8", 40</pre> <p><b>Example 2</b> Adds a disk device named <code>mydiskdump</code>. Specify an absolute or relative path name and a file name:</p> <pre>sp_addumpdevice "disk", mydiskdump, "/dev/rxy1d/dump.dat"</pre>
Usage	<ul style="list-style-type: none"> <li>• <code>sp_addumpdevice</code> adds a dump device to the <code>master.dbo.sysdevices</code> table. Tape devices are assigned a <code>cntrltype</code> of 3; disk devices are assigned a <code>cntrltype</code> of 2.</li> </ul>

- To use an operating system file as a dump device, specify a device of type disk and an absolute or relative path name for the *physicalname*. Omit the *tapesize* parameter. If you specify a relative path name, dumps are made to—or loaded from—the current Adaptive Server working directory at the time the dump or load command executes.
- Ownership and permission problems can interfere with the use of disk or file dump devices. sp\_addumpdevice adds the device to the sysdevices table, but does not guarantee that you can create a file as a dump device or that users can dump to a particular device.
- The with capacity = *megabytes* clause of the dump database and dump transaction commands can override the *tapesize* specified with sp\_addumpdevice. On platforms that do not reliably detect the end-of-tape marker, the Backup Server issues a volume change request after the specified number of megabytes have been dumped.
- When a dump device fails, use sp\_dropdevice to drop it from sysdevices. After replacing the device, use sp\_addumpdevice to associate the logical device name with the new physical device. This avoids updating backup scripts and threshold procedures each time a dump device fails.
- To add database devices to sysdevices, use the disk init command.

Permissions

Only a System Administrator can execute sp\_addumpdevice.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** disk init, dump database, dump transaction, load database, load transaction

**System procedures** sp\_dropdevice, sp\_helpdevice

## sp\_adduser

Description	Adds a new user to the current database.
Syntax	<code>sp_adduser loginname [, name_in_db [, grpname]]</code>
Parameters	<p><i>loginname</i> is the user's name in master.dbo.syslogins.</p> <p><i>name_in_db</i> is a new name for the user in the current database.</p> <p><i>grpname</i> adds the user to an existing group in the database.</p>
Examples	<p><b>Example 1</b> Adds "margaret" to the database. Her database user name is the same as her Adaptive Server login name, and she belongs to the default group, "public":</p> <pre>sp_adduser margaret</pre> <p><b>Example 2</b> Adds "haroldq" to the database. When "haroldq" uses the current database, his name is "harold." He belongs to the fort_mudge group, as well as to the default group "public":</p> <pre>sp_adduser haroldq, harold, fort_mudge</pre>
Usage	<ul style="list-style-type: none"> <li>• The Database Owner executes <code>sp_adduser</code> to add a user name to the <code>sysusers</code> table of the current database, enabling the user to access the current database under his or her own name.</li> <li>• Specifying a <i>name_in_db</i> parameter gives the new user a name in the database that is different from his or her login name in Adaptive Server. The ability to assign a user a different name is provided as a convenience. It is not an alias, as provided by <code>sp_addalias</code>, since it is not mapped to the identity and privileges of another user.</li> <li>• A user and a group cannot have the same name.</li> <li>• A user can be a member of only one group other than the default group, "public". Every user is a member of the default group, "public". Use <code>sp_changegroup</code> to change a user's group.</li> <li>• In order to access a database, a user must either be listed in <code>sysusers</code> (with <code>sp_adduser</code>) or mapped to another user in <code>sysalternates</code> (with <code>sp_addalias</code>), or there must be a "guest" entry in <code>sysusers</code>.</li> </ul>
Permissions	Only the Database Owner, a System Administrator, or a System Security Officer can execute <code>sp_adduser</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** grant, revoke, use

**System procedures** sp\_addalias, sp\_addgroup, sp\_changegroup, sp\_dropalias, sp\_dropgroup, sp\_helpuser

## sp\_altermessage

Description	Enables and disables the logging of a system-defined or user-defined message in the Adaptive Server error log.
Syntax	<code>sp_altermessage message_id, parameter, parameter_value</code>
Parameters	<p><i>message_id</i> is the message number of the message to be altered. This is the number of the message as it is recorded in the error column in the <code>sysmessages</code> or <code>sysusermessages</code> system table.</p> <p><i>parameter</i> is the message parameter to be altered. The maximum length is 30 bytes. The only valid parameter is <code>with_log</code>.</p> <p><i>parameter_value</i> is the new value for the parameter specified in <i>parameter</i>. The maximum length is 5 bytes. Values are <code>true</code> and <code>false</code>.</p>
Examples	<p>Specifies that message number 2000 in <code>sysmessages</code> should be logged in the Adaptive Server error log and also in the Windows NT Event Log (if logging is enabled):</p> <pre>sp_altermessage 2000, 'with_log', 'TRUE'</pre>
Usage	<ul style="list-style-type: none"> <li>If the <i>parameter_value</i> is <code>true</code>, the specified message is always logged. If it is <code>false</code>, the default logging behavior is used; the message may or may not be logged, depending on the severity of the error and other factors. Setting the <i>parameter_value</i> to <code>false</code> produces the same behavior that would occur if <code>sp_altermessage</code> had not been called.</li> <li>On Windows NT servers, <code>sp_altermessage</code> also enables and disables logging in the Windows NT Event Log.</li> </ul>
Permissions	Only the Database Owner or a System Administrator can execute <code>sp_altermessage</code> .
Auditing	Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also

**System procedures** sp\_addmessage, sp\_dropmessage

## sp\_audit

Description Allows a System Security Officer to configure auditing options.

Syntax `sp_audit option, login_name, object_name [,setting]`

Or:

`sp_audit 'restart'`

Parameters *option* is the name of the auditing option to set. Table 1-4 lists the valid auditing options.

**Table 1-4: Auditing options for sp\_audit**

Option	Description
adhoc	Allows users to use <code>sp_addauditrecord</code> to add their own user-defined audit records to the audit trail.
all	Audits all actions performed by a particular user or by users with a particular role. You can only use this option to specify system roles.  <b>Note</b> Auditing all actions does not affect whether users can add ad hoc audit records.
alter	Audits the execution of the <code>alter table</code> or <code>alter database</code> commands.
bcp	Audits the execution of the <code>bcp</code> in utility.
bind	Audits the execution of <code>sp_bindefault</code> , <code>sp_bindmsg</code> , and <code>sp_bindrule</code> system procedures.
cluster	Audits cluster commands.
cmdtext	Audits all actions of a particular user.  <b>Note</b> System stored procedures and command password parameters can be replaced with a fixed-length string of asterisks for security purposes. See “Hiding system stored procedure and command password parameters” on page 88 for more information.
create	Audits the creation of database objects.
dbaccess	Audits access to the current database from another database.
dbcc	Audits the execution of any <code>dbcc</code> command.
delete	Audits the deletion of rows from a table or view.
disk	Audits the execution of <code>disk init</code> , <code>disk refit</code> , <code>disk reinit</code> , <code>disk mirror</code> , <code>disk unmirror</code> , and <code>disk remirror</code> .
drop	Audits the dropping of database objects.
dump	Audits the execution of <code>dump database</code> or <code>dump transaction</code> .
encryption_key	Audits create encryption key, <code>sp_encryption</code> , drop encryption key, and alter encryption key
errors	Audits errors, whether fatal or not.
exec_procedure	Audits the execution of a stored procedure.

Option	Description
exec_trigger	Audits the execution of a trigger.
func_dbaccess	Audits access to a database via a Transact-SQL function.
func_obj_access	Audits access to a database object via a Transact-SQL function.
grant	Audits the execution of the grant.
insert	Audits the insertion of rows into a table or view.
install	Audits the installation of Java classes.
load	Audits the execution of the load database or load transaction
login	Audits all login attempts into Adaptive Server.
login_locked	Audits the hostname and network IP address when a login account is locked due to exceeding the configured number of failed login attempts.
logout	Audits all logout attempts from Adaptive Server.
mount	Audits mount database commands.
quiesce	Audits quiesce database commands.
reference	Audits references between tables.
remove	Audits the removal of Java classes.
revoke	Audits the execution of the revoke.
rpc	Audits the execution of remote procedure calls.
security	Audits the following security-relevant events: <ul style="list-style-type: none"> <li>• Starting up or shutting down the server</li> <li>• Activating or deactivating a role</li> <li>• Issuing any of the following commands: <ul style="list-style-type: none"> <li>addcert</li> <li>connect</li> <li>create and drop login</li> <li>dropcert</li> <li>create, drop, alter, grant, and revoke role</li> <li>kill</li> <li>online database</li> <li>set proxy</li> <li>set session authorization</li> <li>sp_configure</li> </ul> </li> <li>• The functions listed in Table 1-5 on page 85.</li> <li>• Using either of the functions: <ul style="list-style-type: none"> <li>valid_user</li> <li>proc_role (from within a system procedure)</li> </ul> </li> <li>• Regenerating the SSO passwords</li> </ul>
select	Audits the execution of the select.
setuser	Audits the execution of the setuser.



Option	Description
table_access	Audits access to any table by a specific user.
transfer table	Audits the execution of the transfer table command
truncate	Audits the execution of the truncate table.
unbind	Audits the execution of the sp_unbindrule, sp_unbindmsg, and sp_unbindefault.
unmount	Audits the execution of the umount database command.
update	Audits updates to rows in a table or view.
view_access	Audits access to any view by a specific user.

**Table 1-5: Functions that sp\_audit security audits**

config_admin	set_password	valid_user
attr_notify	ha_add_companion	ha_remove_companion
ha_check_alive	ha_getversion	ha_failback
ha_restrictionclass	ha_getrcs	ha_setrcs
ha_hacluster_verify	js_wakeup	unlock_admin_account
ssl_admin	ws_admin	

*login\_name*

is the parameter that lets you specify all, a system role, or the name of a specific login to be audited. However, system roles can only be specified if you use the all option. You cannot audit individual options for a system role.

*object\_name*

is the name of the object to be audited. Valid values, depending on the value you specified for *option*, are:

- The object name, including the owner's name if you do not own the object. For example, to audit a table named inventory that is owned by Joe, you would specify joe.inventory for *object\_name*.
- all for all objects.
- default table, default view, default procedure, or default trigger – audits access to any new table, view, procedure, or trigger.

default table and default view are valid values for *object\_name* when you specify delete, insert, select, or update for the option parameter. default procedure is valid when you specify the exec\_procedure option. default trigger is valid when you specify the exec\_trigger option.

•

See the *System Administration Guide* for more information about the *object\_name* values that are valid with each *option* value.

*setting*

is the level of auditing. If you do not specify a value for *setting*, Adaptive Server displays the current auditing setting for the option. Valid values for the *setting* parameter are described in the following table:

<b>setting value</b>	<b>Description</b>
on	Activates auditing for the specified option. Adaptive Server generates audit records for events controlled by this option, whether the event passes or fails permission checks.
off	Deactivates auditing for the specified option.
pass	Activates auditing for events that pass permission checks.
fail	Activates auditing for events that fail permission checks.

If you specify *pass* for an option and later specify *fail* for the same option, or vice versa, the result is equivalent to specifying *on*. Adaptive Server generates audit records regardless of whether events pass or fail permission checks.

Settings of:

- *on* or *off* – apply to all auditing options
- *pass* and *fail* – apply to all options except *cmdtext*, *errors*, and *adhoc*. For these options, only *on* or *off* applies. The initial, default value of all options is *off*. If you select the *cmdtext* option to either *pass* or *fail*, Adaptive Server replaces the value with *on*.

*restart*

If the audit process is forced to terminate due to an error, *sp\_audit* can be manually restarted by entering:

```
sp_audit restart
```

The audit process can be restarted provided that no audit was currently running, but that the audit process has been configured to run by entering *sp\_configure* "auditing" 1.

## Examples

**Example 1** Sets the *login\_locked* audit option to initiate auditing of hostname and network IP addresses when a login account is locked due to exceeding the configured number of failed login attempts:

```
sp_audit "login_locked", "all", "all", "ON"
```

If the audit tables are full and the event cannot be logged, a message with the information is sent to the *errorlog*.

Monitoring the audit logs for the Locked Login event (112) helps to identify attacks on login accounts.

**Example 2** Initiates auditing for SSL security-relevant events. Both successful and failed events are audited:

```
sp_audit "security", "all", "all", "on"
sample records added:
```

To view the events from sybsecurity:

```
select * from sybsecurity..sysaudits_01 where event=99
```

**Example 3** Displays the setting of the security auditing option:

```
sp_audit "security", "all", "all"
```

**Example 4** Initiates auditing for the creation of objects in the master database, including create database.

```
sp_audit "create", "all", master, "on"
```

**Example 5** Audits commands in the pubs2 database:

```
sp_audit "encryption_key", "all", "pubs2", "on"
```

**Example 6** Initiates auditing for the creation of all objects in the db1 database:

```
sp_audit "create", "all", db1, "on"
```

**Example 7** Initiates auditing for all failed executions by a System Administrator.

```
sp_audit "all", "sa_role", "all", "fail"
```

**Example 8** Initiates auditing for all updates to future tables in the current database. For example, if the current database is utility, all new tables created in utility will be audited for updates. The auditing for existing tables is not affected.

```
sp_audit "update", "all", "default table", "on"
```

**Example 9** Initiates auditing for all transfer table commands entered for the titles table:

```
sp_audit "transfer table", "all", "all", "titles", "on"
```

## Usage

- `sp_audit` determines what will be audited when auditing is enabled. No actual auditing takes place until you use `sp_configure` to set the auditing parameter to on. Then, all auditing options that have been configured with `sp_audit` take effect. For more information, see `sp_configure`.
- If you are not the owner of the object being specified, qualify the `object_name` parameter value with the owner's name, in the following format:

"ownername.objname"

- You cannot activate default auditing for the following options in the tempdb database:

delete	insert	select
update	exec_procedure	exec_trigger

- Table 1-6 lists the configuration parameters that control auditing.

**Table 1-6: Configuration parameters that control auditing**

Configuration parameter	Effect
auditing	Enables or disables auditing for the server.
audit queue size	Establishes the size of the audit queue.
current audit table	Sets the current audit table. Adaptive Server writes all audit records to that table.
suspend auditing when full	Controls the behavior of the audit process when an audit device becomes full.

All auditing configuration parameters are dynamic and take effect immediately.

**Hiding system stored procedure and command password parameters**

When auditing is configured and enabled, and the sp\_audit option 'cmdtext' is set, system stored procedure and command password parameters are replaced with a fixed length string of asterisks in the audit records contained in the audit logs.

For example, executing:

```
sp_password 'oldpassword', 'newpassword'
```

when auditing is enabled and sp\_audit cmdtext is set, results in output similar to:

```
sp_password '*****', '*****'
```

This protects passwords from being seen by other with access to the audit log.

**Permissions**

Only a System Security Officer can execute sp\_audit.

**Auditing**

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Documents** For more information about configuring Adaptive Server for auditing, see `sp_configure` in the *System Administration Guide*.

**System procedures** `sp_addauditrecord`, `sp_configure`, `sp_addauditable`

**Utility commands** `bcp`

## sp\_autoconnect

Description	<b>Component Integration Services only</b> Defines a passthrough connection to a remote server for a specific user, which allows the named user to enter passthrough mode automatically at login.
Syntax	sp_autoconnect <i>server</i> , {true   false} [, <i>loginame</i> ]
Parameters	<p><i>server</i></p> <p>is the name of a server to which an automatic passthrough connection is made. <i>server</i> must be the name of a remote server already added by sp_addserver. This server cannot be the local server.</p> <p>true   false</p> <p>determines whether the automatic passthrough connection is enabled or disabled for <i>server</i>. true enables the automatic connection. false disables it.</p> <p><i>loginame</i></p> <p>specifies the name of the user for which automatic connection is required. If no <i>loginame</i> is supplied, the autoconnect status is modified for the current user.</p>
Examples	<p><b>Example 1</b> The current user is automatically connected to the server SYBASE the next time that user logs in. The user's connection is placed in passthrough mode:</p> <pre>sp_autoconnect SYBASE, true</pre> <p><b>Example 2</b> Disables the autoconnect feature for the user "steve":</p> <pre>sp_autoconnect SYBASE, false, steve</pre>
Usage	<ul style="list-style-type: none"><li>• sp_autoconnect defines a passthrough connection to a remote server for a specific user, which allows the named user to enter passthrough mode automatically at login.</li><li>• The System Administrator must grant connect to permission to the login prior to executing sp_autoconnect.</li><li>• Use sp_autoconnect only when Component Integration Services is installed and configured.</li><li>• Do not change the autoconnect status of the "sa" login account.</li><li>• Changing the autoconnect status does not occur immediately for users who are currently connected. They must disconnect from the local server, then reconnect before the change is made.</li><li>• Use disconnect to exit passthrough mode.</li></ul>
Permissions	Only a System Administrator can execute sp_autoconnect.

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

## See also

**Commands** connect to...disconnect, grant

**System procedures** sp\_addlogin, sp\_addserver, sp\_passthru, sp\_remotesql

## sp\_autoformat

Description	A utility stored procedure that produces readable result set data, sp_autoformat reformats the width of variable-length character data to display only non-blank characters. Trailing blanks are truncated in the output.
Syntax	sp_autoformat <i>fulltablename</i> [, <i>selectlist</i> , <i>whereclause</i> , <i>orderby</i> ]
Parameters	<p><i>fulltablename</i> specifies the name of table from which data is being selected. Use owner names if the object owner is not the user running the command.</p> <p><i>selectlist</i> specifies the comma-separated list of columns to be selected in the result set. Columns in the table can be renamed using the <i>&lt;name&gt; = &lt;column&gt;</i> notation. See examples. If <i>selectlist</i> is not provided, all columns in the table specified are output in column ID order.</p> <p><i>whereclause</i> is a search predicate, specified as a where clause, that filters out rows from the table being selected.</p> <p><i>orderby</i> is an optional order by clause that specifies the order in which the output result set is presented.</p>
Examples	<p><b>Example 1</b> Returns a result set from a select statement similar to <code>select id, colid, name from syscolumns where id = 3</code>, where the character columns are autoformatted:</p>

```
1> sp_autoformat "syscolumns", "id, colid, name", "where id = 3"
2> go
```

id	colid	name
3	1	id
3	2	number
3	3	colid
3	4	status
3	5	type
3	6	length
3	7	offset
3	8	usertype
3	9	cdefault
3	10	domain
3	11	name
3	12	printfmt
3	13	prec
3	14	scale



```

3      15 remote_type
3      16 remote_name
3      17 xstatus
3      18 xtype
3      19 xdbid
3      21 accessrule
3      22 status2

```

**Example 2** Renames the output columns using the following syntax:

```
[ < AS-Name label of Column > ] [ ] * = [ ] * < column name >
```

<AS-Name label of Column> is optional, and you can use white spaces around the = separator:

```

1> sp_autoformat syscolumns, "Object Id' = id, 'Column Name'=name,
   'Column ID'=colid", "where id = 3"
2> go

```

Object Id	Column Name	Column ID
3	id	1
3	number	2
3	colid	3
3	status	4
3	type	5
3	length	6
3	offset	7
3	usertype	8
3	cdefault	9
3	domain	10
3	name	11
3	printfmt	12
3	prec	13
3	scale	14
3	remote_type	15
3	remote_name	16
3	xstatus	17
3	xtype	18
3	xdbid	19
3	accessrule	21
3	status2	22

(1 row affected)

**Example 3** Uses the *orderby* parameter to specify an ordering in the result output:

```
sp_autoformat @fulltabname = 'syscolumns',
              @selectlist = "id, name",
              @orderby = "ORDER BY name"
```

**Example 4** Generates an autoformatted result when you select from multiple tables, or if you have a complex SQL select statement with expressions in the select list, you must:

- 1 Use temporary tables to generate the result set:

The following generates the list of the columns with the highest column ID on all system catalogs:

```
select o.id, o.name, c.colid, c.name
from sysobjects o, syscolumns c
where o.id < 100 and o.id = c.id
      and c.colid = (select max(c2.colid) from syscolumns c2
                    where c2.id = c.id)
order by o.name
```

The following generates the same result set with auto-formatting of character data using a temporary table to produce readable output, and includes minor changes to provide column names in the temporary table:

```
select o.id, ObjectName = o.name, c.colid, ColumnName = c.name
into #result
from sysobjects o, syscolumns c
where o.id < 100 and o.id = c.id
      and c.colid = (select max(c2.colid) from syscolumns c2
                    where c2.id = c.id)
```

- 2 Use sp\_autoformat on that temporary table to produce formatted output:

The order by clause in the original select statement is skipped when generating the temporary table, and is instead added to the call to sp\_autoformat when generating the output result.

```
1> exec sp_autoformat @fulltabname = #result, @orderby = "order by
      ObjectName"
2> go
```

id	ObjectName	colid	ColumnName
11	sysalternates	2	altsuid
21	sysattributes	13	comments
55	syscertificates	6	suid
45	syscharsets	8	sortfile
3	syscolumns	22	status2
6	syscomments	8	status

```

37 sysconfigures          9 value4
17 sysconstraints         7 spare2
38 syscurconfigs         15 type
30 sysdatabases          19 status4
12 sysdepends             10 readobj
35 sysdevices            7 mirrorname
43 sysengines            12 starttime

```

```
...
```

```

(1 row affected)
(return status = 0)

```

You can further process the temporary table to report only on the required output for selected tables, as shown below:

```

1> exec sp_autoformat #result, "id, 'Object Name' = ObjectName,
   'Column Name' = ColumnName", "where id < 5"
2> go

```

```

id      Object Name Column Name
-----
1 sysobjects loginame
2 sysindexes crdate
3 syscolumns status2
4 systypes  accessrule

```

## Usage

- In Adaptive Server version 15.0.3 and higher, `sp_autoformat` accepts columns of datatypes `int` (`smallint`, `bigint`, `tinyint`, `unsigned int`), `numeric`, `money`, `date/time`, and `float`, `real`, and `double precision`.
- `sp_autoformat` looks for an object only in the current database. To use `sp_autoformat` on temporary tables, issue the procedure from `tempdb`.
- `sp_autoformat` does not validate that the columns referenced in any of the parameters actually exist in the table specified by the `fulltablename` parameter. `sp_autoformat` fails if you reference any nonexistent columns.
- Provide only one instance of a column in the select list.

## Return codes

- 0 – successful completion
- 1 – internal error, or usage error in invocation
- Other – any other errors raised by Adaptive Server during the execution of the generated SQL statement are returned back to the caller.

Restrictions

- sp\_autoformat uses internal SQL variables to generate SQL statements that are then executed using execute immediate. The length of the generated SQL statement is limited to 2K bytes. Auto-formatting result sets for a large column list, or columns with long names can sometimes cause an error due to insufficient size of the buffer for the generated SQL statement.
- Quoted identifiers are not supported for either the table or column names. If you have result sets that use quoted identifiers and that need autoformatting:
  - a Generate the required data in a temporary table, where the columns in the temporary table do not have any quoted identifiers.
  - b Use sp\_autoformat to produce the required output using the temporary table.
  - c Rename the columns in the *selectlist* in the desired output format.

Permissions

Any user can execute sp\_autoformat. However, users selecting from the tables must have appropriate select privileges.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

## sp\_bindcache

Description	Binds a database, table, index, text object, or image object to a data cache.
Syntax	<pre>sp_bindcache cachename, dbname            [, [ownername.]tablename            [, indexname   "text only"]]</pre>
Parameters	<p><i>cachename</i> is the name of an active data cache.</p> <p><i>dbname</i> is the name of the database to be bound to the cache or the name of the database containing the table, index, text or image object to be bound to the cache.</p> <p><i>ownername</i> is the name of the table's owner. If the table is owned by "dbo", the owner name is optional.</p> <p><i>tablename</i> is the name of the table to be bound to the cache, or the name of the table whose index, text object, or image object is to be bound to the cache.</p> <p><i>indexname</i> is the name of the index to be bound to the cache.</p> <p>text only binds text or image objects to a cache. When this parameter is used, you cannot give an index name at the same time.</p>
Examples	<p><b>Example 1</b> Binds the titles table to the cache named pub_cache:</p> <pre>sp_bindcache pub_cache, pubs2, titles</pre> <p><b>Example 2</b> Binds the clustered index titles.title_id_cix to the pub_ix_cache:</p> <pre>sp_bindcache pub_ix_cache, pubs2, titles, title_id_cix</pre> <p><b>Example 3</b> Binds pubs2 to the tempdb_cache:</p> <pre>sp_bindcache tempdb_cache, pubs2</pre> <p><b>Example 4</b> Binds the pubs2 transaction log, syslogs, to the cache named logcache:</p> <pre>sp_bindcache logcache, pubs2, syslogs</pre> <p><b>Example 5</b> Binds the image chain for the au_pix table to the cache named pub_cache:</p> <pre>sp_bindcache pub_cache, pubs2, au_pix, "text only"</pre>

Usage

- A database or database object can be bound to only one cache. You can bind a database to one cache and bind individual tables, indexes, text objects, or image objects in the database to other caches. The database binding serves as the default binding for all objects in the database that have no other binding. The data cache hierarchy for a table or index is as follows:
  - If the object is bound to a cache, the object binding is used.
  - If the object is not bound to a cache, but the object's database is bound to a cache, the database binding is used.
  - If neither the object nor its database is bound to a cache, the default data cache is used.
- The cache and the object or database being bound to it must exist before you can execute `sp_bindcache`. Create a cache with `sp_cacheconfig` and, if the operation is not dynamic, restart Adaptive Server before binding objects to the cache.
- Cache bindings take effect immediately, and do not require a restart of the server. When you bind an object to a data cache:
  - Any pages for the object that are currently in memory are cleared.
  - When the object is used in queries, its pages are read into the bound cache.
- You can bind an index to a different cache than the table it references. If you bind a clustered index to a cache, the binding affects only the root and intermediate pages of the index. It does not affect the data pages (which are, by definition, the leaf pages of the index).
- To bind a database, you must be using the master database. To bind tables, indexes, text objects, or image objects, you must be using the database where the objects are stored.
- To bind any system tables in a database, you must be using the database and the database must be in single-user mode. Use the command:

```
sp_dboption db_name, "single user", true
```

For more information, see `sp_dboption`.
- You do not have to unbind objects or databases in order to bind them to a different cache. Issuing `sp_bindcache` on an object that is already bound drops the old binding and creates the new one.

- `sp_bindcache` needs to acquire an exclusive table lock when you are binding a table or its indexes to a cache so that no pages can be read while the binding is taking place. If a user holds locks on a table, and you issue `sp_bindcache` on that object, the task doing the binding sleeps until the locks are released.
- When you bind or unbind an object, all stored procedures that reference the object are recompiled the next time they are executed. When you change the binding for a database, all stored procedures that reference objects in the bound database are recompiled the next time they are executed.
- When you drop a table, index, or database, all associated cache bindings are dropped. If you re-create the table, index, or database, you must use `sp_bindcache` again if you want it bound to a cache.
- If a database or a database object is bound to a cache, and the cache is dropped, the cache bindings are marked invalid, but remain stored in the `sysattributes` system table(s). Warnings are printed in the error log when Adaptive Server is restarted. If a cache of the same name is created, the bindings become valid when Adaptive Server is restarted.
- The following procedures provide information about the bindings for their respective objects: `sp_helpdb` for databases, `sp_help` for tables, and `sp_helpindex` for indexes. `sp_helpcache` provides information about all objects bound to a particular cache.
- Use `sp_spaceused` to see the current size of tables and indexes, and `sp_estspace` to estimate the size of tables that you expect to grow. Use `sp_cacheconfig` to see information about cache size and status, and to configure and reconfigure caches.
- Although you can still use `sp_bindcache` on a system tempdb, the binding of the system tempdb is now non-dynamic. Until you restart the server:
  - The changes do not take effect
  - `sp_helpcache` reports a status of “P” for pending, unless you have explicitly bound the system tempdb to the default data cache, in which case the status as “V” for valid, because by default the system tempdb is already bound to the default data cache.

#### Restrictions

- The master database, the system tables in master, and the indexes on the system tables in master cannot be bound to a cache. You can bind non-system tables from master, and their indexes, to caches.

- You cannot bind a database or an object to a cache if:
  - Isolation level 0 reads are active on the table
  - The task doing the binding currently has a cursor open on the table
- If a cache has the type log only, you can bind a syslogs table only to that cache. Use sp\_cacheconfig to see a cache's type.

Permissions

Only a System Administrator can execute sp\_bindcache.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

<b>Command or access</b>			
<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_cacheconfig, sp\_configure, sp\_help, sp\_helpcache, sp\_helppdb, sp\_helpindex, sp\_poolconfig, sp\_unbindcache, sp\_unbindcache\_all



## sp\_bindefault

Description	Binds a user-defined default to a column or user-defined datatype.
Syntax	<code>sp_bindefault <i>defname</i>, <i>objname</i> [, futureonly]</code>
Parameters	<p><i>defname</i> is the name of a default created with create default statements to bind to specific columns or user-defined datatypes.</p> <p><i>objname</i> is the name of the table and column, or user-defined datatype, to which the default is to be bound. If the <i>objname</i> parameter is not of the form “<i>table.column</i>”, it is assumed to be a user-defined datatype. If the object name includes embedded blanks or punctuation, or is a reserved word, enclose it in quotation marks.</p> <p>Existing columns of the user-defined datatype inherit the default <i>defname</i>, unless you specify <i>futureonly</i>.</p> <p>You cannot bind defaults to computed columns.</p> <p><i>futureonly</i> prevents existing columns of a user-defined datatype from acquiring the new default. This parameter is optional when you are binding a default to a user-defined datatype. It is never used to bind a default to a column.</p>
Examples	<p><b>Example 1</b> Assuming that a default named <i>today</i> has been defined in the current database with create default, this command binds it to the <i>startdate</i> column of the <i>employees</i> table. Each new row added to the <i>employees</i> table has the value of the <i>today</i> default in the <i>startdate</i> column, unless another value is supplied:</p> <pre>sp_bindefault today, "employees.startdate"</pre> <p><b>Example 2</b> Assuming that a default named <i>def_ssn</i> and a user-defined datatype named <i>ssn</i> exist, this command binds <i>def_ssn</i> to <i>ssn</i>. The default is inherited by all columns that are assigned the user-defined datatype <i>ssn</i> when a table is created. Existing columns of type <i>ssn</i> also inherit the default <i>def_ssn</i>, unless you specify <i>futureonly</i> (which prevents existing columns of that user-defined datatype from inheriting the default), or unless the column’s default has previously been changed (in which case the changed default is maintained):</p> <pre>sp_bindefault def_ssn, ssn</pre> <p><b>Example 3</b> Binds the default <i>def_ssn</i> to the user-defined datatype <i>ssn</i>. Because the <i>futureonly</i> parameter is included, no existing columns of type <i>ssn</i> are affected:</p>

sp\_bindefault def\_ssn, ssn, futureonly

Usage

- You can create column defaults in two ways: by declaring the default as a column constraint in the create table or alter table statement or by creating the default using the create default statement and binding it to a column using sp\_bindefault. Using create default, you can bind that default to more than one column in the database.
- You cannot bind a default to an Adaptive Server-supplied datatype.
- You cannot bind a default to a system table.
- Defaults bound to a column or user-defined datatype with the IDENTITY property have no effect on column values. Each time you insert a row into the table, Adaptive Server assigns the next sequential number to the IDENTITY column.
- If binding a default to a column, give the *objname* argument in the form “*table.column*”. Any other format is assumed to be the name of a user-defined datatype.
- If a default already exists on a column, you must remove it before binding a new default. Use sp\_unbindefault to remove defaults created with sp\_bindefault. To remove defaults created with create table or alter table, use alter table to replace the default with NULL.
- Existing columns of the user-defined datatype inherit the new default unless you specify futureonly. New columns of the user-defined datatype always inherit the default. Binding a default to a user-defined datatype overrides defaults bound to columns of that type; to restore column bindings, unbind and rebind the column default.
- Statements that use a default cannot be in the same batch as their sp\_bindefault statement.

Permissions

Only the object owner can execute sp\_bindefault.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
6	bind	sp_bindefault	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – Name of default</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** create default, create table, drop default

**System procedures** sp\_unbindefault

## sp\_bindexeclass

Description	Associates an execution class with a client application, login, or stored procedure.
Syntax	sp_bindexeclass " <i>object_name</i> ", " <i>object_type</i> ", " <i>scope</i> ", " <i>classname</i> "
Parameters	<p><i>object_name</i> is the name of the client application, login, or stored procedure to be associated with the execution class, <i>classname</i>.</p> <p><i>object_type</i> identifies the type of <i>object_name</i>. Use ap for application, lg for login, or pr for stored procedure.</p> <p><i>scope</i> is the name of a client application or login, or it can be NULL for ap and lg objects. It is the name of the stored procedure owner (user name) for objects. When the object with <i>object_name</i> interacts with the application or login, <i>classname</i> attributes apply for the scope you set.</p> <p><i>classname</i> specifies the type of class to associate with <i>object_name</i>. Values are:</p> <ul style="list-style-type: none"><li>• EC1, EC2, or EC3</li><li>• The name of a user-defined execution class</li><li>• ANYENGINE</li></ul>

**Examples** **Example 1** This statement specifies that Transact-SQL applications will execute with EC3 attributes for any login or application process (because the value of *scope* is NULL) that invokes isql, unless the login or application is bound to a higher execution class:

```
sp_bindexeclass 'isql', 'ap', NULL, 'EC3'
```

**Example 2** This statement specifies that when a login with the System Administrator role executes Transact-SQL applications, the login process executes with EC1 attributes. If you have already executed the statement in the first example, then any other login or client application that invokes isql will execute with EC3 attributes:

```
sp_bindexeclass 'sa', 'lg', 'isql', 'EC1'
```

**Example 3** This statement assigns EC3 attributes to the stored procedure named *my\_proc* owned by user *kundu*:

```
sp_bindexeclass 'my_proc', 'PR', 'kundu', 'EC3'
```

Usage	<ul style="list-style-type: none"> <li>• <code>sp_bindexclass</code> associates an execution class with a client application, login, or stored procedure. Create execution classes with <code>sp_addexclass</code>.</li> <li>• When <code>scope</code> is <code>NULL</code>, <code>object_name</code> has no scope. <code>classname</code>'s execution attributes apply to all of its interactions. For example, if <code>object_name</code> is an application name, the attributes apply to any login process that invokes the application. If <code>object_name</code> is a login name, the attributes apply to a particular login process for any application invoked by the login process.</li> <li>• When binding a stored procedure to an execution class, you must use the name of the stored procedure owner (user name) for the <code>scope</code> parameter. This narrows the identity of a stored procedure when there are multiple invocations of it in the same database.</li> <li>• Due to precedence and scoping rules, the execution class being bound may or may not have been in effect for the object called <code>object_name</code>. The object automatically binds itself to another execution class, depending on other binding specifications, precedence, and scoping rules. If no other binding is applicable, the object binds to the default execution class, <code>EC2</code>.</li> <li>• It is possible to use <code>sp_bindexclass</code> to bind a <code>RepAgent</code> thread to an execution class using <code>rep agent</code> as the application without generating an error. However, because of restrictions in Adaptive Server, the <code>priority</code> attribute is set to medium, and the binding has no effect.</li> <li>• Binding fails when you attempt to bind an active process to an engine group with no online engines.</li> <li>• Adaptive Server creates a row in the <code>sysattributes</code> table containing the object ID and user ID in the row that stores data for the binding.</li> <li>• A stored procedure must exist before it can be bound.</li> <li>• Stored procedure bindings must be done in the database in which the stored procedure resides. Therefore, when binding system procedures, execute <code>sp_bindexclass</code> from within the <code>sybsystemprocs</code> database.</li> <li>• Only the “priority attribute” of the execution class is used when you bind the class to a stored procedure.</li> <li>• The name of the owner of a stored procedure must be supplied as the <code>scope</code> parameter when you are binding a stored procedure to an execution class. This helps to uniquely identify a stored procedure when multiple stored procedures with the same name (but different owners) exist in the database.</li> </ul>
Permissions	Only a System Administrator can execute <code>sp_bindexclass</code> .
Auditing	Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_addexeclass, sp\_showexeclass, sp\_unbindexeclass

**Utility** isql

## sp\_bindmsg

Description	Binds a user message to a referential integrity constraint or check constraint.
Syntax	<code>sp_bindmsg <i>constrname</i>, <i>msgid</i></code>
Parameters	<p><i>constrname</i> is the name of the integrity constraint to which you are binding a message. Use the constraint clause of the create table command, or the add constraint clause of the alter table command to create and name constraints.</p> <p><i>msgid</i> is the number of the user message to be bound to an integrity constraint. The message must exist in the sysusermessages table in the local database prior to calling sp_bindmsg.</p>
Examples	<pre>sp_bindmsg positive_balance, 20100</pre> <p>Binds user message number 20100 to the positive_balance constraint.</p>
Usage	<ul style="list-style-type: none"> <li>• sp_bindmsg binds a user message to an integrity constraint by adding the message number to the constraint row in the sysconstraints table.</li> <li>• Only one message can be bound to a constraint. To change the message for a constraint, just bind a new message. The new message number replaces the old message number in the sysconstraints table.</li> <li>• You cannot bind a message to a unique constraint because a unique constraint does not have a constraint row in sysconstraints (a unique constraint is a unique index).</li> <li>• Use the sp_addmessage procedure to insert user messages into the sysusermessages table.</li> <li>• The sp_getmessage procedure retrieves message text from the sysusermessages table.</li> <li>• sp_help <i>tablename</i> displays all constraint names declared on <i>tablename</i>.</li> </ul>
Permissions	Only the object owner can execute sp_bindmsg.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
7	bind	sp_bindmsg	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – Message ID</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** alter table, create table

**System procedures** sp\_addmessage, sp\_getmessage, sp\_unbindmsg



## sp\_bindrule

Description	Binds a rule to a column or user-defined datatype.
Syntax	<code>sp_bindrule rulename, objname [, futureonly]</code>
Parameters	<p><i>rulename</i> is the name of a rule. Create rules with create rule statements and bind rules to specific columns or user-defined datatypes with <code>sp_bindrule</code>.</p> <p><i>objname</i> is the name of the table and column, or user-defined datatype, to which the rule is to be bound. If <i>objname</i> is not of the form “<i>table.column</i>”, it is assumed to be a user-defined datatype. If the object name has embedded blanks or punctuation, or is a reserved word, enclose it in quotation marks.</p> <p><i>futureonly</i> prevents existing columns of a user-defined datatype from inheriting the new rule. This parameter is optional when you bind a rule to a user-defined datatype. It is meaningless when you bind a rule to a column.</p>
Examples	<p><b>Example 1</b> Assuming that a rule named <code>today</code> has been created in the current database with create rule, this command binds it to the <code>startdate</code> column of the <code>employees</code> table. When a row is added to <code>employees</code>, the data for the <code>startdate</code> column is checked against the rule <code>today</code>:</p> <pre>sp_bindrule today, "employees.startdate"</pre> <p><b>Example 2</b> Assuming the existence of a rule named <code>rule_ssn</code> and a user-defined datatype named <code>ssn</code>, this command binds <code>rule_ssn</code> to <code>ssn</code>. In a create table statement, columns of type <code>ssn</code> inherit the rule <code>rule_ssn</code>. Existing columns of type <code>ssn</code> also inherit the rule <code>rule_ssn</code>, unless <code>ssn</code>'s rule was previously changed (in which case the changed rule is maintained in the future only):</p> <pre>sp_bindrule rule_ssn, ssn</pre> <p><b>Example 3</b> The rule <code>rule_ssn</code> is bound to the user-defined datatype <code>ssn</code>, but no existing columns of type <code>ssn</code> are affected. <code>futureonly</code> prevents existing columns of type <code>ssn</code> from inheriting the rule:</p> <pre>sp_bindrule rule_ssn, ssn, futureonly</pre>
Usage	<ul style="list-style-type: none"> <li>• Create a rule using the create rule statement. Then execute <code>sp_bindrule</code> to bind it to a column or user-defined datatype in the current database.</li> <li>• Rules are enforced when an insert is attempted, not when <code>sp_bindrule</code> is executed. You can bind a character rule to a column with an exact or approximate numeric datatype, even though such an insert is illegal.</li> </ul>

- You cannot use sp\_bindrule to bind a check constraint for a column in a create table statement.
- You cannot bind a rule to an Adaptive Server-supplied datatype or to a text or an image column.
- You cannot bind a rule to a system table.
- You cannot bind a rule to a computed column.
- If you are binding to a column, the *objname* argument must be of the form “*table.column*”. Any other format is assumed to be the name of a user-defined datatype.
- Statements that use a rule cannot be in the same batch as their sp\_bindrule statement.
- You can bind a rule to a column or user-defined datatype without unbinding an existing rule. Rules bound to columns always take precedence over rules bound to datatypes. Binding a rule to a column replaces a rule bound to the datatype of that column; however, binding a rule to a datatype does not replace a rule bound to a column of that user-defined datatype.
- Existing columns of the user-defined datatype inherit the new rule unless their rule was previously changed, or the value of the optional third parameter is futureonly. New columns of the user-defined datatype always inherit the rule.

Permissions Only the object owner can execute sp\_bindrule.

Auditing Values in event and extrainfo columns from the sysaudits table are:

Command or access			
Event	Audit option	Command or access audited	Information in extrainfo
8	bind	sp_bindrule	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – Name of the rule</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** create rule, drop rule

**System procedures** sp\_unbindrule

## sp\_cacheconfig

Description	Creates, configures, reconfigures, and drops data caches, and provides information about them.
Syntax	<pre>sp_cacheconfig [cachename [, "cache_size[P   K   M   G]"                 [, logonly   mixed   inmemory_storage][, strict   relaxed]]                 [, "cache_partition=[1   2   4   8   16   32   64]"                 [, instance instance_name]</pre>
Parameters	<p><i>cachename</i> is the name of the data cache to be created or configured. Cache names must be unique, and can be up to 30 characters long. A cache name does not have to be a valid Adaptive Server identifier, that is, it can contain spaces and other special characters.</p> <p><i>cache_size</i> is the size of the data cache to be created or, if the cache already exists, the new size of the data cache. The minimum size of a cache is 256 times the logical page size of the server. Size units can be specified with P for pages, K for kilobytes, M for megabytes, or G for gigabytes. The default is K. For megabytes and gigabytes, you can specify floating-point values. The cache size is in multiples of the logical page size.</p> <p>logonly   mixed   inmemory_storage specifies the type of cache. inmemory_storage indicates you are creating a cache for an in-memory or relaxed-durability database.</p> <p>strict   relaxed specifies the cache replacement policy.</p> <p>cache_partition specifies the number of partitions to create in the cache.</p> <p><i>instance_name</i> <i>in cluster environments</i> – name of the instance whose cache you are adjusting.</p>
Examples	<p><b>Example 1</b> Creates the data cache pub_cache with 10MB of space. All space is in the default logical page size memory pool:</p> <pre>sp_cacheconfig pub_cache, "10M"</pre> <p><b>Example 2</b> Reports the current configuration of pub_cache and any memory pools in the cache:</p> <pre>sp_cacheconfig pub_cache</pre> <p><b>Example 3</b> Drops pub_cache at the next start of Adaptive Server:</p>

```
sp_cacheconfig pub_cache, "0"
```

**Example 4** Creates pub\_log\_cache and sets its type to logonly in a single step:

```
sp_cacheconfig pub_log_cache, "2000K", logonly
```

**Example 5** The first command creates the cache pub\_log\_cache with the default type mixed. The second command changes its status to logonly. The resulting configuration is the same as that in example 4:

```
sp_cacheconfig pub_log_cache, "2000K"  
sp_cacheconfig pub_log_cache, logonly
```

**Example 6** Creates a cache and sets the size, type, replacement policy and number of cache partitions:

```
sp_cacheconfig 'newcache', '50M', mixed, strict, "cache_partition=2"
```

**Example 7** Creates an in-memory storage named pubs3\_imdb:

```
sp_cacheconfig pubs_imdb, '500M', inmemory_storage
```

**Example 8** *In cluster environments* – displays the cache for instance blade1:

```
sp_cacheconfig 'instance blade1'
```

**Example 9** *In cluster environments* – sets the size of the Sales Cache size on blade1 to 100 megabytes:

```
sp_cacheconfig 'Sales Cache', '100M', 'instance blade1'
```

**Example 10** *In cluster environments* – sets the size of the Sales Cache size on blade1 to 0 megabytes, effectively dropping the cache.

```
sp_cacheconfig 'Sales Cache', '0M', 'instance blade1'
```

## Usage

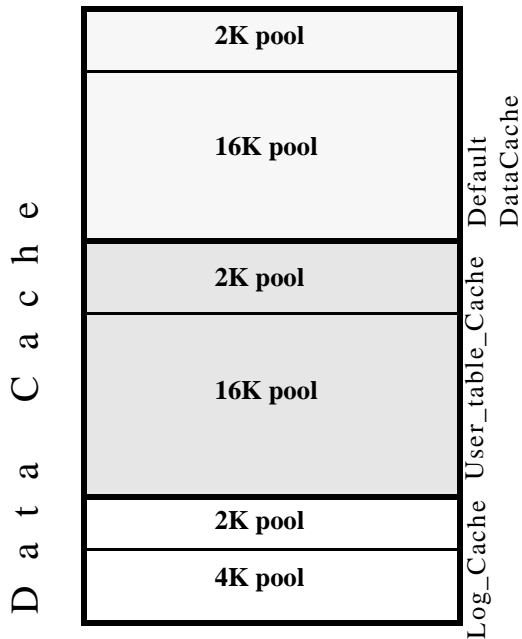
- The minimum cache size is 256 times the logical page size. For example, a 4K server would have a minimum cache size of 1024K.
- If Adaptive Server is unable to allocate all the memory requested while you are creating a new cache or adding memory to an existing cache, it allocates all the available memory. However, this additional memory is allocated at the next reboot of Adaptive Server.
- If there are objects bound to cache (including the default cache), you cannot delete the cache until you unbind the objects.
- *In cluster environments* – if you do not specify an instance\_name, the cache for the cluster is displayed.
- Some of the actions you perform with sp\_cacheconfig are dynamic (do not require a reboot of Adaptive Server) and some are static (require a reboot). Table 1-7 describes which are dynamic and which are static:

**Table 1-7: Dynamic and static sp\_cacheconfig actions**

<b>Dynamic sp_cacheconfig actions</b>	<b>Static sp_cacheconfig actions</b>
Adding a new cache	Changing the number of cache partitions
Adding memory to an existing cache	Reducing a cache size
Deleting a cache	Changing the replacement policy
Changing a cache type	

- When you first create a data cache:
  - All space is allocated to the logical page size memory pool.
  - The default type is mixed.
- Figure 1-1 on page 114 shows a data cache for a 2K server with two user-defined data caches configured and the following pools:
  - The default data cache with a 2K pool and a 16K pool
  - A user cache with a 2K pool and a 16K pool
  - A log cache with a 2K pool and a 4K pool

**Figure 1-1: Data cache with default and user-defined caches**



- The default data cache must always have the type default, and no other cache can have the type default.
- The Adaptive Server housekeeper task does not do any buffer washing in caches with a type of logonly or in caches with a relaxed LRU replacement policy.
- The following commands perform only 2K I/O: disk init, some dbcc commands, and drop table. The dbcc checkdb and dbcc checktable commands can perform large I/O for tables, but perform 2K I/O on indexes. Table 1-8 shows cache usage, depending on the binding of the database or object.

**Table 1-8: Cache usage for Transact-SQL commands**

Command	Database bound	Table or index is bound	Database or object not bound
create index	Bound cache	N/A	Default data cache
disk init	N/A	N/A	Default data cache
dbcc checkdb	Bound cache	N/A	Default data cache
dbcc checktable, indexalloc, tablealloc	Bound cache	Bound cache	Default data cache
drop table	Bound cache	Bound cache	Default data cache

- Recovery uses only the logical page size pool of the default data cache. All pages for all transactions that must be rolled back or rolled forward are read into and changed in this pool. Be sure that your default logical page size pool is large enough for these transactions.
- When you use `sp_cacheconfig` with no parameters, it reports information about all of the caches on the server. If you specify only a cache name, it reports information about only the specified cache. If you use a fragment of a cache name, it reports information for all names matching “%fragment%”.

All reports include a block of information that reports information about caches, and a separate block of data for each cache that provides information about the pools within the cache.

The output below, from a server using 2K, shows the configuration for:

- The default data cache with two pools: a 2K pool and a 16K pool. The default data cache has 2 partitions.
- `pubs_cache` with two pools: 2K and 16K
- `pubs_log`, with the type set to `logonly` and cache replacement policy set to `relaxed`, with a 2K pool and a 4K pool

```

Cache Name           Status      Type        Config Value  Run Value
-----
default data cache   Active     Default     0.00 Mb      26.09 Mb
pubs_cache           Active     Mixed       10.00 Mb     10.00 Mb
pubs_log             Active     Log Only    2.40 Mb      2.40 M
-----
Total                12.40 Mb   38.49 Mb
=====
Cache: default data cache, Status: Active, Type: Default
      Config Size: 0.00 Mb, Run Size: 26.09 Mb
      Config Replacement: strict LRU, Run Replacement: strict LRU

```

```

        Config Partition:          2,   Run Partition:          2
IO Size  Wash Size Config Size  Run Size      APF Percent
-----
      2 Kb   3704 Kb      0.00 Mb    18.09 Mb     10
     16 Kb   1632 Kb      8.00 Mb     8.00 Mb     10
=====
Cache: pubs_cache,   Status: Active,   Type: Mixed
      Config Size: 10.00 Mb,   Run Size: 10.00 Mb
      Config Replacement: strict LRU,   Run Replacement: strict LRU
      Config Partition:          1,   Run Partition:          1
IO Size  Wash Size Config Size  Run Size      APF Percent
-----
      2 Kb   1228 Kb      0.00 Mb     6.00 Mb     10
     16 Kb    816 Kb      4.00 Mb     4.00 Mb     10
=====
Cache: pubs_log,   Status: Active,   Type: Log Only
      Config Size: 2.40 Mb,   Run Size: 2.40 Mb
      Config Replacement: relaxed LRU,   Run Replacement: relaxed LRU
      Config Partition:          1,   Run Partition:          1
IO Size  Wash Size Config Size  Run Size      APF Percent
-----
      2 Kb    206 Kb      0.00 Mb     1.01 Mb     10
     16 Kb    272 Kb      1.40 Mb     1.39 Mb     10

```

Table 1-9 lists the meaning of the columns in the output:

**Table 1-9: sp\_cacheconfig output**

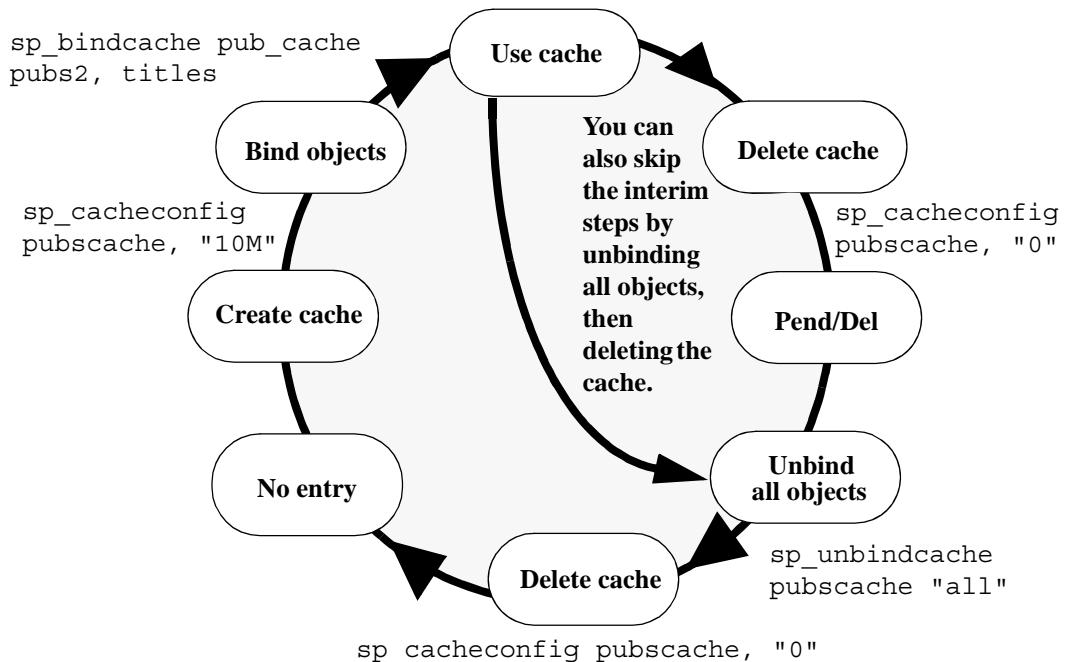
Column	Meaning
Cache Name	The name of the cache.
Status	One of the following: <ul style="list-style-type: none"> <li>• “Active”</li> <li>• “Pend/Act”</li> <li>• “Pend/Del”</li> </ul> These are explained following this table.
Type	“Mixed” or “Log Only” for user-defined caches, “Default” for the default data cache.
I/O Size	The size of I/O for a memory pool. This column is blank on the line that shows that cache configuration.
Wash Size	The size of the wash area for the pool. As pages enter the wash area of the cache, they are written to disk. This column is blank on the line that shows the cache configuration.
Config Value or Config Size	The size that the cache or pool. If the value is 0, the size has not been explicitly configured, and a default value will be used.
Run Value or Run Size	The size of the cache or pool now in use on Adaptive Server.



Column	Meaning
Config/ Run Replacement	The cache policy (strict or relaxed) that will be used for the cache after the next restart, and the current replacement policy. These will be different only if the policy has been changed since the last reboot.
Config/Run Partition	The number of cache partitions that will be used for the cache, and the current number of partitions. These will be different if <code>sp_cacheconfig</code> has been used to change the number of partitions since the last reboot.
APF Percent	The percentage of buffers in the pool that can hold buffers that have been fetched by asynchronous prefetch, but have not been used.
Total	The total size of data cache, if the report covers all caches, or the current size of the particular cache, if you specify a cache name.

The status “Pend” is short for pending. It always occurs in combination with either “Act” for Active or “Del” for Delete. It indicates that a configuration action has taken place, but that the server must be restarted in order for the changes to take effect.

**Figure 1-2: Effects of restarts and `sp_cacheconfig` on cache status**



- You can also configure caches and pools by editing the configuration file. For more information, see the *System Administration Guide*.

### Data cache memory

- When Adaptive Server is first installed, all data cache memory is assigned to the logical page size pool of the cache named default data cache. The default data cache is used by all objects that are not explicitly bound to a data cache with `sp_bindcache` or whose databases are not bound to a cache.
- When you create data caches, the memory allocation is validated against max memory. Memory for caches is allocated out of the memory allocated to Adaptive Server with the `total_logical_memory` configuration parameter. To increase the amount of space available for caches, increase total logical memory, or decrease other configuration settings that use memory. If the sum of total logical memory and additional memory requested is greater than max memory, then Adaptive Server issues an error and does not perform the changes.

The default cache is used for all objects, including system tables, that are not bound to another cache, and is the only cache used during recovery. For more information, see the *System Administration Guide*.

- A data cache requires a small percentage of overhead for structures that manage the cache. All cache overhead is taken from free memory. To see the amount of overhead required for a specific size of cache, use `sp_helpcache`, giving the size:

```
sp_helpcache "200M"
```

```
10.38Mb of overhead memory will be needed to manage  
a cache of size 200M
```

This is only an estimate of the overhead. The actual overhead may be larger because of runtime issues.

### Creating cache for in-memory or relaxed durability databases

- The cache name cannot be longer than 127 bytes.
- The minimum size of in-memory storage cache is 256 logical pages (512K on a server using 2K logical pages).
- You cannot:
  - Include the strict or relaxed replacement strategies for in-memory storage. By default, `sp_cacheconfig` uses a replacement strategy of none for in-memory storage cache.
  - Create large I/O pools for in-memory storage cache (in-memory databases do not perform I/O). Adaptive Server issues an error if you use `sp_poolconfig` to create buffer pools in an in-memory storage cache.

- Change the cache type from mixed to logonly, or vice-versa.

#### Changing existing caches

- To change the size of an existing cache, specify the cache's name and the new size.
  - If you increase the size of an existing cache, all of the added space is placed in the smallest pool.
  - To reduce the size of an existing cache, all of the space must be available in the logical page size pool. You may need to use `sp_poolconfig` to move space from other pools to this pool.
- If you have a database or any nonlog objects bound to a cache, you cannot change its type to logonly.

#### Using cache partitions

- Cache partitions can be used to reduce cache spinlock contention without needing to create separate caches and bind database objects to them. For more information on monitoring cache spinlock contention, see the *Performance and Tuning Guide*.
- You can set the default number of cache partitions for all caches with the configuration parameter global cache partition number. See the *System Administration Guide*.

#### Dropping caches

- To drop or delete a data cache, change its size to 0, as shown in example 3. When you set a cache's size to 0, the cache is marked for deletion. The cache remains active, and all objects that are bound to that cache continue to use it.

You cannot drop the default data cache.

- If you delete a data cache, and there are objects bound to the cache, the cache is left as-is in memory and Adaptive Server issues the following message:

```
Cache (nmc3) not deleted dynamically. Objects are bound to the cache. Use
sp_unbindcache_all to unbind all objects bound to the cache.
```

The entry corresponding to the cache in the configuration file is deleted, as well as the entries corresponding to the cache in `sysconfigures`, and the cache is deleted the next time Adaptive Server is restarted.

- You cannot run `sp_cacheconfig` within a transaction.

Permissions Only a System Administrator can execute sp\_cacheconfig to change cache configurations. Any user can execute sp\_cacheconfig to view cache configurations.

Auditing Values in event and extrainfo columns from the sysaudits table are:

<b>Command or access</b>			
<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also **System procedures** sp\_bindcache, sp\_helpcache, sp\_poolconfig, sp\_unbindcache, sp\_unbindcache\_all

## sp\_cachestrategy

Description	Enables or disables prefetching (large I/O) and MRU cache replacement strategy for a table, index, text object, or image object.
Syntax	<code>sp_cachestrategy dbname, [ownername.]tablename [, indexname   "text only"   "table only" [, {prefetch   mru}, {"on"   "off"}]]</code>
Parameters	<p><i>dbname</i> is the name of the database where the object is stored.</p> <p><i>ownername</i> is the name of the table's owner. If the table is owned by "dbo", the owner name is optional.</p> <p><i>tablename</i> is the name of the table.</p> <p><i>indexname</i> is the name of the index on the table.</p> <p>text only changes the cache strategy for a text or image object.</p> <p>table only changes the cache strategy for a table.</p> <p>prefetch   mru is prefetch or mru, and specifies which setting to change.</p> <p>on   off specifies the setting, "on" or "off", enclosed in quotes.</p>

**Examples** **Example 1** Displays information about cache strategies for the titles table:

```
sp_cachestrategy pubs2, titles

object name      index name      large IO  MRU
-----
dbo.titles       titleidind     ON        ON
```

**Example 2** Displays information about cache strategies for the titleind index:

```
sp_cachestrategy pubs2, titles, titleind
```

**Example 3** Disables prefetch on the titleind index of the titles table:

```
sp_cachestrategy pubs2, titles, titleind, prefetch, "off"
```

**Example 4** Reenables MRU replacement strategy on the authors table:

```
sp_cachestrategy pubs2, authors, "table only", mru, "on"
```

**Example 5** Reenables prefetching on the text pages of the blurbs table:

```
sp_cachestrategy pubs2, blurbs, "text only", prefetch, "on"
```

#### Usage

- If memory pools for large I/O are configured for the cache used by a table or an index, the optimizer can choose to prefetch data or index pages by performing large I/Os of up to eight data pages at a time. This prefetch strategy can be used on the data pages of a table or on the leaf-level pages of a nonclustered index. By default, prefetching is enabled for all tables, indexes, and text or image objects. Setting the prefetch option to “off” disables prefetch for the specified object.
- The optimizer can choose to use **MRU replacement strategy** to fetch and discard buffers in cache for table scans and index scans for I/O of any size. By default, this strategy is enabled for all objects. Setting mru to “off” disables this strategy. If you turn mru off for an object, all pages are read into the MRU/LRU chain in cache, and they remain in the cache until they are flushed by additional I/O. For more information on cache strategies, see the *Performance and Tuning Guide*.
- You can change the cache strategy only for objects in the current database.
- When you use sp\_cachestrategy without specifying the strategy and setting, it reports the current settings for the object, as shown in Example 1.
- To see the size, status and I/O size of all data caches on the server, use sp\_cacheconfig.
- Setting prefetch "on" has no effect on tables or indexes that are read into a cache that allows only 2K I/O. The mru strategy can be used in all caches, regardless of available I/O size.

#### Overrides

- If prefetching is turned on for a table or an index, you can override the prefetching for a session with set prefetch "off". If prefetching is turned off for an object, you cannot override that setting.
- The prefetch, lru, and mru options to the select, delete and update commands suggest the I/O size and cache strategy for individual statements. If prefetching or MRU strategy is enabled for a table or an index, you can override it for a query by specifying I/O the size of the logical page size for prefetch, and by specifying lru strategy. For example, the following command forces LRU strategy, logical page size I/O, and a table scan of the titles table:

```
select avg(advance)
from titles (index titles prefetch 2 lru)
```

If you request a prefetch size, and the object's cache is not configured for I/O of the requested size, the optimizer chooses the best available I/O size.

- If prefetching is enabled for an object with `sp_cachestrategy`, using a prefetch specification of the logical page size in a select, update or delete command overrides an earlier set prefetch "on" statement. Specifying a larger I/O size in a select, update or delete command does not override a set prefetch "off" command.

**Permissions** Only a System Administrator or the object owner can execute `sp_cachestrategy`.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

**See also** **Commands** delete, select, set, update

**Stored procedures** `sp_cacheconfig`, `sp_poolconfig`

## sp\_changedbowner

Description	Changes the owner of a user database.
Syntax	sp_changedbowner <i>loginame</i> [, true]
Parameters	<i>loginame</i> is the login name of the new owner of the current database.  true transfers aliases and their permissions to the new database owner. Values are “true” and “TRUE”.
Examples	Makes the user “albert” the owner of the current database:  <pre>sp_changedbowner albert</pre>
Usage	<ul style="list-style-type: none"><li>• The new owner must not already be known as either a user or alias (that is, the new owner must not already be listed in sysusers or sysalternates). Executing sp_changedbowner with the single parameter <i>loginame</i> changes the database ownership to <i>loginame</i> and drops aliases of users who could act as the old “dbo.”</li><li>• After executing sp_changedbowner, the new owner is known as the Database Owner inside the database.</li><li>• sp_changedbowner cannot transfer ownership of the system databases.</li><li>• The new owner must already have a login name in Adaptive Server, but must <b>not</b> have a database user name or alias name in the database. To assign database ownership to such a user, drop the user name or alias entry before executing sp_changedbowner.</li><li>• To grant permissions to the new owner, a System Administrator must grant them to the Database Owner, since the user is no longer known inside the database under any other name.</li></ul>
Permissions	A user with sa_role or sso_role privileges can execute sp_changedbowner.  sp_changedbowner is used to change the owner of a database. You can execute it with either sa_role or sso_role privileges.
Auditing	Values in event and extrainfo columns from the sysaudits table are:



<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** create database

**System procedures** sp\_addlogin, sp\_dropalias, sp\_dropuser, sp\_helpdb

## sp\_changegroup

Description	Changes a user's group.
Syntax	sp_changegroup <i>grpname</i> , <i>username</i>
Parameters	<p><i>grpname</i> is the name of the group. The group must already exist in the current database. If you use "public" as the <i>grpname</i>, enclose it in quotes, because it is a keyword.</p> <p><i>username</i> is the name of the user to be added to the group. The user must already exist in the current database.</p>
Examples	<p><b>Example 1</b> The user "albert" is now a member of the "fort_mudge" group. It doesn't matter what group "albert" belonged to before:</p> <pre>sp_changegroup fort_mudge, albert</pre> <p><b>Example 2</b> Removes "albert" from the group he belonged to without making him a member of a new group (all users are always members of "public"):</p> <pre>sp_changegroup "public", albert</pre>
Usage	<ul style="list-style-type: none"><li>• Executing sp_changegroup adds the specified user to the specified group. The user is dropped from the group he or she previously belonged to and is added to the one specified by <i>grpname</i>.</li><li>• New database users can be added to groups at the same time they are given access to the database with sp_adduser.</li><li>• Groups are used as a collective name for granting and revoking privileges. Every user is always a member of the default group, "public", and can belong to only one other group.</li><li>• To remove someone from a group without making that user a member of a new group, use sp_changegroup to change the user's group to "public", as shown above in Example 2.</li><li>• When a user changes from one group to another, the user loses all permissions that he or she had as a result of belonging to the old group and gains the permissions granted to the new group.</li></ul>
Permissions	Only the Database Owner, a System Administrator, or a System Security Officer can execute sp_changegroup.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** grant, revoke

**System procedures** sp\_addgroup, sp\_adduser, sp\_dropgroup, sp\_helpgroup

## sp\_checknames

**Description** Checks the current database for names that contain characters not in the 7-bit ASCII set.

**Syntax** sp\_checknames [help | silent]

**Parameters** help  
shows information about the system tables that are scanned.

silent  
checks the current database in a silent mode, returning either:

- 0 – if there are no names with non-7 bit ASCII characters, or
- 1 – if there is at least one name with a non-7 bit ASCII character

**Examples** **Example 1** Checks the master database for names that contain characters not in the 7-bit ASCII set:

```
sp_checknames
```

```
Looking for non 7-bit ASCII characters in the system tables of database:  
"master"
```

```
=====  
Table.Column name: "syslogins.password"
```

The following logins have passwords that contain non 7-bit ASCII characters. If you wish to change them use "sp\_password"; Remember, only the sa and the login itself may examine or change the syslogins.password column:

```
suid   name  
-----  
1 sa  
2 probe  
3 bogususer
```

**Example 2** Displays information about the system tables scanned:

```
1> sp_checknames help  
2> go
```

```
sp_checknames is used to search for non 7-bit ASCII characters  
several important columns of system tables. The following  
columns are searched:
```

```
In "master":  
sysdatabases.name  
sysdevices.name
```

```

syslogins.name
syslogins.dbname
syslogins.password
sysremotelogins.remoteusername
syssservers.srvname
syssservers.srvnetname

```

In all databases:

```

syscolumns.name
sysindexes.name
sysobjects.name
syssegments.name
systypes.name
sysusers.name

```

```

(return status = 0)
1>

```

**Example 3** Suppresses the output of system table names, and displays just the return status:

```

1> sp_checknames silent
2> go

(return status = 1)

```

#### Usage

- `sp_checknames` examines the names of all objects, columns, indexes, user names, group names, and other elements in the current database for characters outside of the 7-bit ASCII set. It reports illegal names and gives instructions to make them compatible with the 7-bit ASCII set.
- Run `sp_checknames` in every database on your server after upgrading from a SQL Server of release 4.0.x or 4.2.x, and after using a default character set that was not 7-bit ASCII.
- Follow the instructions in the `sp_checknames` report to correct all non-ASCII names.

#### Permissions

Any user can execute `sp_checknames`.

#### Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

---

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also

**Commands** update

**System procedures** sp\_password, sp\_rename, sp\_renamedb

## sp\_checkreswords

Description	Detects and displays identifiers that are Transact-SQL reserved words. Checks server names, device names, database names, segment names, user-defined datatypes, object names, column names, user names, login names, and remote login names.
Syntax	<code>sp_checkreswords [user_name_param]</code>
Parameters	<i>user_name_param</i> is the name of a user in the current database. If you supply <i>user_name_param</i> , <code>sp_checkreswords</code> checks only for objects that are owned by the specified user.
Examples	<b>Example 1</b> Shows the results if <code>sp_checkreswords</code> is executed in the master database:

```

1> /* executed in the master database */
2> sp_checkreswords

Reserved Words Used as Database Object Names for Database master

Upgrade renames sysobjects.schema to sysobjects.schemacnt.

Owner
-----
dbo

Table                                     Reserved Word Column Names
-----
authorization                             cascade

Object Type                               Reserved Word Object Names
-----
rule                                       constraint
stored procedure                          check
user table                                arith_overflow
user table                                authorization

-----
-----

Owner
-----
lemur

Table                                     Reserved Word Column Names
-----

```

key	close
-----	-------

Table	Reserved Word Index Names
-----	
key	isolation

Object Type	Reserved Word Object Names
-----	
default	isolation
rule	level
stored procedure	mirror
user table	key

Reserved Word Datatype Names

-----

identity

-----

-----

Database-wide Objects

-----

Reserved Word User Names

-----

at

identity

Reserved Word Login Names

-----

at

identity

Reserved Word as Database Names

-----

work

Reserved Word as Language Names

-----

national

Reserved Word as Server Names

-----

mirror



```
primary
```

```
Reserved Word ServerNetNames
```

```
-----
```

```
mirror
```

```
primary
```

**Example 2** Shows the results if `sp_checkreswords` is executed in the user database `user_db`:

```
1> /* executed in the user database, user_db */
```

```
2> sp_checkreswords
```

```
Reserved Words Used as Database Object Names for Database user_db
```

```
Upgrade renames sysobjects schema to sysobjects.schemact.
```

```
Owner
```

```
-----
```

```
tamarin
```

```
Table
```

```
Reserved Word Column Names
```

```
-----
```

```
cursor
```

```
current
```

```
endtran
```

```
current
```

```
key
```

```
identity
```

```
key
```

```
varying
```

```
schema
```

```
primary
```

```
schema
```

```
references
```

```
schema
```

```
role
```

```
schema
```

```
some
```

```
schema
```

```
user
```

```
schema
```

```
work
```

```
Table
```

```
Reserved Word Index Names
```

```
-----
```

```
key
```

```
double
```

```
Object Type
```

```
Reserved Word Object Names
```

```
-----
```

```
default
```

```
escape
```

```
rule
```

```
fetch
```

```
stored procedure
```

```
foreign
```

```
user table
```

```
cursor
```

```
user table
```

```
key
```

```
user table
```

```
schema
```

```
view
```

```
endtran
```

-----  
-----  
Database-wide Objects  
-----

Found no reserved words used as names for database-wide objects.

Usage

- sp\_checkreswords reports the names of existing objects that are reserved words. Transact-SQL does not allow words that are part of any command syntax to be used as identifiers, unless you are using delimited identifiers. Reserved words are pieces of SQL syntax, and they have special meaning when you use them as part of a command. For example, in pre-release 10.0 SQL Server, you could have a table called work, and select data from it with this query:

```
select * from work
```

work was a new reserved word in SQL Server release 10.0, part of the command commit work. Issuing the same select statement in release 10.0 or later causes a syntax error. sp\_checkreswords finds identifiers that would cause these problems.

- sp\_checkreswords also finds reserved words, used as identifiers, that were created using the set quoted\_identifier option.
- Use sp\_checkreswords before or immediately after upgrading to a new release of Adaptive Server. For information on installing and running this procedure before performing the upgrade, see the installation documentation for your platform.

Run sp\_checkreswords in the master database and in each user database. Also run it in model and sybssystemprocs, if you have added users or objects to those databases.

- The return status indicates the number of items found.
- If you supply a user name, sp\_checkreswords checks for all of the objects that can be owned by a user tables, indexes, views, procedures, triggers, rules, defaults, and user-defined datatypes. It reports all identifiers that are reserved words.

- If your current database is not the master database, and you do not provide a user name, `sp_checkreswords` checks for all of the objects above, with a separate section in the report for each user name. It also checks `sysusers` and `syssegments` for user names and segment names that are reserved words. You only need to check `model` and `sysystemprocs` if you have added objects, users, or user-defined datatypes.
- If your current database is master, and you do not provide a user name, `sp_checkreswords` performs all of the checks above and also checks `sysdatabases`, `syslogins`, `syscharsets`, `sysservers`, `sysremotelogins`, `sysdevices`, and `syslanguages` for reserved words used as the names of databases, local or remote logins, local and remote servers, character sets, and languages.

#### Handling reported instances of reserved words

- If `sp_checkreswords` reports that reserved words are used as identifiers, you have two options:
  - Use `sp_rename`, `sp_renamedb`, or update the system tables to change the name of the identifier.
  - Use `set quoted_identifier` on if the reserved word is a table name, view name, or column name. If most of your applications use stored procedures, you can drop and re-create these procedures with `set quoted_identifier` on, and quote all identifiers. All users will be able to run the procedures, without having to use `set quoted_identifier` on for their session. You can use `set quoted_identifier` on, create views that give alternative names to tables or columns, and change your applications to reference the view instead.

The following example provides alternatives for the new reserved words “key”, “level”, and “work”:

```
create view keyview
as
select lvl = "level", wrk = "work"
from "key"
```

The syntax for the set command is:

```
set quoted_identifier on
```

- If you do not either change the identifiers or use delimited identifiers, any query that uses the reserved words as identifiers reports an error, usually a syntax error. For example:

```
select level, work from key
Msg 156, Level 15, State 1:
```

```
Server 'rosie', Line 1:  
Incorrect syntax near the keyword 'level'.
```

---

**Note** The quoted identifier option is a SQL92 option and may not be supported by many client products that support other Adaptive Server features. For example, you cannot use bcp on tables whose names are reserved words.

Before choosing the quoted identifier option, perform a test on various objects using all the tools you will use to access Adaptive Server. Use `set quoted_identifier on`, create a table with a reserved word for a name and reserved words for column names. If the client product generates SQL code, it must enclose identifiers in double quotes (if they are reserved words) and character constants in single quotes.

---

- Procedures, triggers, and views that depend on objects whose names have been changed may work after the name change, but will stop working when the query plan is recompiled. Recompilation takes place for many reasons, without notification to the user. To avoid unsuspected loss of functionality, change the names of objects in procedures, triggers, and views immediately after you change the object name.
- Whether you change the object names or use delimited identifiers, you must change all stored procedures, views, triggers, and applications that include the reserved word. If you change object names, you must change identifiers; if you use delimited identifiers, you must add the `set quoted_identifier` option and quotation marks.
- If you do not have the text of your procedures, triggers, views, rules, and defaults saved in operating system files, you can use `defncopy` to copy the definitions from the server to files. See `defncopy` in the *Utility Guide*.

#### Changing identifiers

- If you change the names of the items reported by `sp_checkreswords`, you must change the names in all procedures, triggers, views, and applications that reference the object using the reserved word.
- Dump your database before changing identifier names. After you change the identifier names, run `dbcc` to determine that there are no problems, and dump the database again.
- If you are changing identifiers on an active production database:
  - Perform the changes when the system is least busy, so that you will disrupt as few users as possible.

- Prepare carefully by finding all Open Client DB-Library™ programs, windowing applications, stored procedures, triggers, and scripts that use a particular identifier. This way, you can make the edits needed in the source code, then change the identifiers and replace the procedures and code as quickly as possible.
- The procedure `sp_depends` can help find procedures, views, and triggers that use table and view names.

Using `sp_rename` to change identifiers

- The system procedure `sp_rename` renames tables, indexes, views, procedures, triggers, rule, defaults, user-defined datatypes, and columns. Use `sp_renamedb` to rename databases.
- Table 1-10 shows the types of identifiers that you can change with `sp_rename` and lists other changes that may have to be made on the server and in your application programs.

**Table 1-10: `sp_rename` and changing identifiers**

Identifier	Remember To
Table name	<ul style="list-style-type: none"> <li>• Drop all procedures, triggers and views that reference the table, and re-create them with the new name. Use <code>sp_depends</code> to find the objects that depend on the table.</li> <li>• Change all applications or SQL source scripts that reference the table to use the new table name.</li> <li>• Change <code>dbcc</code> scripts that perform table-level checks using table names.</li> </ul>
Index name	<ul style="list-style-type: none"> <li>• Drop any stored procedures that create or drop the index, and re-create them with the new name.</li> <li>• Change all applications or SQL source scripts that create or drop the index.</li> <li>• Change <code>dbcc</code> scripts that perform index-level checks using index names.</li> </ul>
View name	<ul style="list-style-type: none"> <li>• Drop all procedures, triggers, and views that reference the view, and re-create them with the new name. Use <code>sp_depends</code> to find the objects that depend on the view.</li> <li>• Change all applications or SQL source scripts that reference the view to use the new view name.</li> </ul>
Procedure name	<ul style="list-style-type: none"> <li>• Drop and re-create with the new procedure name all procedures and triggers that reference the procedure.</li> <li>• Change all applications or SQL source scripts that execute the procedure to use the new name.</li> <li>• If another server remotely calls the procedure, change applications on the remote server to use the new procedure name.</li> </ul>
Trigger name	<ul style="list-style-type: none"> <li>• Change any SQL source scripts that create the trigger.</li> </ul>
Rule name	<ul style="list-style-type: none"> <li>• Change any SQL source scripts that create the rule.</li> </ul>
Default name	<ul style="list-style-type: none"> <li>• Change any SQL source scripts that create the default.</li> </ul>

Identifier	Remember To
User-defined datatype name	<ul style="list-style-type: none"><li>• Drop all procedures that create tables with user-defined datatypes, and re-create them with the new name.</li><li>• Change any applications that create tables with user-defined datatypes.</li></ul>
Column name	<ul style="list-style-type: none"><li>• Drop all procedures, triggers and views that reference the column, and re-create them with the new column name.</li><li>• sp_depends cannot find column name references. The following query displays the names of procedures, triggers, and views that reference a column named "key": <pre>select distinct sysobjects.name from sysobjects, syscomments where sysobjects.id = syscomments.id and syscomments.text like "%key%"</pre></li><li>• Change all applications and SQL source scripts that reference the column by name.</li></ul>

The following command changes the name of the view isolation to isolated:

```
sp_rename "isolation", isolated
```

The following command changes the name of a column in the renamed view isolated:

```
sp_rename "isolated.key", keyname
```

- Use sp\_depends to get a list of all views, procedures, and triggers that reference a view, procedure, or table that will be renamed. To use sp\_depends after renaming an object, give the new name. For example:

```
sp_depends new_name
```

#### Renaming databases with *sp\_renamedb*

To change the name of a database, use sp\_renamedb. The database must be in single-user mode. Drop and re-create any procedures, triggers, and views that explicitly reference the database name. For more information, see sp\_renamedb.

#### Changing other identifiers

- To change user names, login names, device names, remote server names, remote server user names, segment names, and character set and language names, first determine if you can drop the object or user, then add or create it again. If you cannot do that, use the following command to allow direct updates to system tables:

```
sp_configure "allow updates to system tables", 1
```

Only a System Security Officer can set the allow updates to system tables configuration parameter.

Errors during direct updates to system tables can create severe problems in Adaptive Server. To determine whether you can drop the objects or user, then re-create them, see Table 1-11.

Table 1-13 on page 141 shows possible dependencies on this set of identifiers. See this table for possible dependencies, whether you choose to upgrade by dropping and recreating objects, by using delimited identifiers, or by performing direct updates to system tables.

**Table 1-11: Alternatives to direct system tables updates when changing identifiers**

Identifier type	Suggested actions to avoid updates to system tables
User names and login names	To change the name of a user with no objects, first use <code>sp_helpprotect username</code> in each database to record the user's permissions. Then, drop the user from all of the databases ( <code>sp_dropuser</code> ), and drop the login ( <code>sp_droplogin</code> ). Finally, add the new login name ( <code>sp_addlogin</code> ), add the new user name to the databases ( <code>sp_adduser</code> ), and restore the user's permissions with <code>grant</code> .
Device names	If this device is completely allocated, you will not need to use its name in a <code>create database</code> command, so you can leave the name unchanged.
Remote server names	Unless there are large numbers of remote login names from the remote server, drop the remote server ( <code>sp_dropserver</code> ) and add it with a new name ( <code>sp_addserver</code> ).
Remote server logins	Drop the remote login with <code>sp_dropremotelogin</code> , add it with a new name using <code>sp_addremotelogin</code> , and restore the user's permission to execute procedures with <code>grant</code> .
Segment names	These are rarely used, once objects have been created on the segments.
Character set and language names	Languages and character sets have reserved words as identifiers only if a System Administrator has created alternative languages with <code>sp_addlanguage</code> . Drop the language with <code>sp_droplanguage</code> , and add it with a new name.

---

**Warning!** Direct updates to system tables can be very dangerous. You can make mistakes that make it impossible for Adaptive Server to run or make it impossible to access objects in your databases. Undertake this effort when you are calm and collected, and when little or no production activity is taking place on the server. If possible, use the alternative methods described Table 1-11.

---

- The following example shows a “safe” procedure for updating a user name, with all data modification preceded by a begin transaction command. The System Security Officer executes the following command:

```
sp_configure "allow updates to system tables", 1
```

Then you can execute the following:

```
begin transaction
update sysusers
```

```
set name = "workerbee"  
where name = "work"
```

At this point, run the query, and check to be sure that the command affected only the row that you intended to change. The only identifier change that affects more than one row is changing the language name in syslogins. If the query affected:

- Only the correct row – use commit transaction.
- More than one row or the incorrect row – use rollback transaction, determine the source of the problem, and execute the command correctly.

When you are finished, the System Security Officer turns off the allow updates to system tables configuration parameter with this command:

```
sp_configure "allow updates to system tables", 0
```

---

**Warning!** Only update system tables in a single database in each user defined transaction. Do not issue a begin transaction command and then update tables in several databases. Such actions can make recovery extremely difficult.

---

Table 1-12 shows the system tables and columns that you should update to change reserved words. The tables preceded by “master.dbo.” occur only in the master database. All other tables occur in master and in user databases. Be certain you are using the correct database before you attempt the update. You can check for the current database name with this command:

```
select db_name()
```



**Table 1-12: System table columns to update when changing identifiers**

Type of identifier	Table to update	Column name
User name	sysusers	name
Login names	master.dbo.syslogins	name
Segment names	syssegments	name
Device name	sysdevices	name
Remote server name	syssservers	srvname
Remote server network name	syssservers	srvnetname
Character set names	master.dbo.syscharsets	name
Language name	master.dbo.syslanguages	name
	master.dbo.syslogins	language

Table 1-13 shows other changes that may have to be made on the server and in your application programs:

**Table 1-13: Considerations when changing identifiers**

Identifier	Remember to
Login name	Change the user name in each database where this person is a user.
User name	Drop, edit, and re-create all procedures, triggers, and views that use qualified ( <i>owner_name.object_name</i> ) references to objects owned by this user. Change all applications and SQL source scripts that use qualified object names to use the new user name. You do not have to drop the objects themselves; sysusers is linked to sysobjects by the column that stores the user's ID, not the user's name.
Device name	Change any SQL source scripts or applications that reference the device name to use the new name.
Remote server name	Change the name on the remote server. If the name that sp_checkreswords reports is the name of the local server, you must restart the server before you can issue or receive remote procedure calls.
Remote server network name	Change the server's name in the interfaces files.
Remote server login name	Change the name on the remote server.
Segment name	Drop and re-create all procedures that create tables or indexes on the segment name. Change all applications that create objects on segments to use the new segment name.
Character set name	None.
Language name	Change both master.dbo.syslanguages and master.dbo.syslogins. The update to syslogins may involve many rows. Also, change the names of your localization files.

#### Using delimited identifiers

- You can use delimited identifiers for table names, column names, and view names. You cannot use delimited identifiers for other object names.

- If you choose to use delimited identifiers, use `set quoted_identifier on`, and drop and re-create all the procedures, triggers, and views that use the identifier. Edit the text for those objects, enclosing the reserved words in double quotes and enclosing all character strings in single quotes.

The following example shows the changes to make to queries in order to use delimited identifiers. This example updates a table named `work`, with columns named `key` and `level`. Here is the pre-release 10.0 query, which encloses character literals in double quotes, and the edited version of the query for use with delimited identifiers:

```
/* pre-release 10.0 version of query */
update work set level = "novice"
    where key = "19-732"
/* 10.0 or later version of query, using
** the quoted identifier option
*/
update "work" set "level" = 'novice'
    where "key" = '19-732'
```

- All applications that use the reserved word as an identifier must be changed as follows:
  - The application must set the quoted identifier option on.
  - All uses of the reserved word must be enclosed in double quotes.
  - All character literals used by the application while the quoted identifier option is turned on must be enclosed in single quotes. Otherwise, Adaptive Server attempts to interpret them as object names.

For example, the following query results in an error message:

```
set quoted_identifier on
select * from titles where title_id like "BU%"
```

Here is the correct query:

```
select * from titles where title_id like 'BU%'
```

- Stored procedures that you create while the delimited identifiers are in effect can be run without turning on the option. (The `allow updates to system tables` option also works this way.) This means that you can turn on quoted identifier mode, drop a stored procedure, edit it to insert quotation marks around reserved words used as identifiers, and re-create the procedure. All users can execute the procedure without using `set quoted_identifier`.

Permissions Only a System Administrator can execute `sp_checkreswords`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** `set`

**System procedures** `sp_configure`, `sp_depends`, `sp_rename`, `sp_renamedb`

**Utilities** `defncopy`

## sp\_checksource

Description	Checks for the existence of the source text of the compiled object, and for the existence of computed column source text.
Syntax	sp_checksource [objname [, tabname [, username]]]
Parameters	<p><i>objname</i> is the compiled object to be checked for the existence of its source text.</p> <p><i>tabname</i> is the name of the table or view to be checked for the existence of all check constraints, defaults, and triggers defined on it.</p> <p><i>username</i> is the name of the user who owns the compiled objects to be checked for the existence of the source text.</p>
Examples	<p><b>Example 1</b> Checks for the existence of the source text of all compiled objects in the current database:</p> <pre>sp_checksource</pre> <p><b>Example 2</b> Checks for the existence of the source text of the view named titleview:</p> <pre>sp_checksource titleview</pre> <p><b>Example 3</b> Checks for the existence of the source text of the view named titles_vu that is owned by Mary:</p> <pre>sp_checksource titles_vu, @username = Mary</pre> <p><b>Example 4</b> Checks for the existence of the source text of the custom stored procedure list_phone_proc:</p> <pre>sp_checksource list_phone_proc</pre> <p><b>Example 5</b> Checks for the existence of the source text of all the check constraints, triggers, and declarative defaults defined on the table named my_tab:</p> <pre>sp_checksource @tabname = "my_tab"</pre> <p><b>Example 6</b> Checks for the existence of the source text of the view my_vu and all check constraints, triggers, and defaults defined on the table my_tab:</p> <pre>sp_checksource @objname = "my_vu", @tabname = "my_tab"</pre> <p><b>Example 7</b> Checks for the existence of the source text of all compiled objects owned by Tom:</p>

- `sp_checksourc @username = "Tom"`
- Usage**
- `sp_checksourc` checks for the existence of the source text of the specified compiled object. If the source text exists for the specified object, `sp_checksourc` returns 0. If the source text does not exist for the specified object, `sp_checksourc` returns 1.
  - If you do not provide any parameters, `sp_checksourc` checks the existence of the source text for all compiled objects in the current database.
  - To use `sp_checksourc` with no parameters, you must be the Database Owner or System Administrator.
  - `sp_checksourc` encrypts the text of user-defined functions.
- Permissions**
- Only a Database Owner or System Administrator can execute `sp_checksourc` to check for the existence of the source text of compiled objects that are owned by another user. Any user can execute `sp_checksourc` to check for the existence of the source text for his or her own compiled objects.
- Auditing**
- Values in event and extrainfo columns from the `sysaudits` table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_hidetext`

## sp\_chgattribute

Description	Changes the <code>max_rows_per_page</code> , <code>fillfactor</code> , <code>reservepagegap</code> , or <code>exp_row_size</code> value for future space allocations of a table or an index; sets the <code>concurrency_opt_threshold</code> for a table. Provides the user interface for optimistic index locking.
Syntax	<pre>sp_chgattribute <i>objname</i>,     {"max_rows_per_page"   "fillfactor"   "reservepagegap"       "exp_row_size"   "concurrency_opt_threshold"       "optimistic_index_lock"   "identity_burn_max"   "plldegree"}     , <i>value</i>, <i>optvalue</i>  sp_chgattribute <i>objname</i>,     {"identity_gap", <i>set_number</i>       "dealloc_first_txdpg", <i>value</i>}</pre>
Parameters	<p><i>objname</i> is the name of the table or index for which you want to change attributes.</p> <p><code>max_rows_per_page</code> specifies the row size. Use this option for tables with variable-length columns.</p> <p><code>fillfactor</code> specifies how full Adaptive Server will make each page when it is re-creating an index or copying table pages as a result of a reorg rebuild command or an alter table command to change the locking scheme. The <code>fillfactor</code> percentage is relevant only at the time the index is rebuilt. Valid values are 0–100.</p> <p><code>reservepagegap</code> specifies the ratio of filled pages to empty pages that are to be left during extent I/O allocation operations. For each specified <i>num_pages</i>, an empty page is left for future expansion of the table. Valid values are 0–255. The default value is 0.</p> <p><code>exp_row_size</code> reserves a specified amount of space for the rows in data-only locked tables. Use this option to reduce the number of rows being forwarded, which can be expensive during updates. Valid values are 0, 1, and any value between the minimum and maximum row length for the table. 0 means a server-wide setting is applied, and 1 means to fully pack the rows on the data pages.</p>

**concurrency\_opt\_threshold**

specifies the table size, in pages, at which access to a data-only-locked table should begin optimizing for reducing I/O, rather than for concurrency. If the table is smaller than the number of pages specified by **concurrency\_opt\_threshold**, the query is optimized for concurrency by always using available indexes; if the table is larger than the number of pages specified by **concurrency\_opt\_threshold**, the query is optimized for I/O instead. Valid values are -1 to 32767. Setting the value to 0 disables concurrency optimization. Use -1 to enforce concurrency optimization for tables larger than 32767 pages. The default is 15 pages.

**optimistic\_index\_lock**

enables a performance optimization that eliminates contention on the root page of an index. If the root page must change because of index splits, an exclusive table is acquired. For this reason, **optimistic\_index\_lock** is appropriate for tables where the number of modifications is relatively small. Valid values are 1 to turn on optimistic index locking or 0 to turn off optimistic index locking which is the default.

**identity\_burn\_max**

Allows you to set the identity burn max value of a table. This parameter uses a varchar datatype.

**identity\_gap**

indicates that you want to change the identity gap.

**value**

is the numeric input value for the various options you specify in the **sp\_chgattribute**.

**optvalue**

is the new value. Valid values and default values depend on which parameter is specified. This parameter is only used by the **identity\_burn\_max** parameter. For other parameters, this value is NULL.

**set\_number**

is the new size of the identity gap.

**dealloc\_first\_txdpg**

updates a text or image column to null. Sets the corresponding text pointer to null after deallocating the previously referenced text or image pages. This result in reduced space allocation for null text/images columns. Valid values are default 0, which does not deallocate text or image pages on null update, and 1, which sets the deallocation on.

plldegree

specifies the maximum number of threads the query optimizer can use.

Examples

**Example 1** Sets the `max_rows_per_page` to 1 for the authors table for all future space allocations:

```
sp_chgattribute authors, "max_rows_per_page", 1
```

**Example 2** Sets the `max_rows_per_page` to 4 for the titleidind index for all future space allocations:

```
sp_chgattribute "titles.titleidind", "max_rows_per_page", 4
```

**Example 3** Specifies a fillfactor of 90 percent for pages in title\_ix:

```
sp_chgattribute "titles.title_ix", "fillfactor", 90
```

**Example 4** Sets the `exp_row_size` to 120 for the authors table for all future space allocations:

```
sp_chgattribute "authors", "exp_row_size", 120
```

**Example 5** Sets the `reservepagegap` to 16 for the titleidind index for all future space allocations:

```
sp_chgattribute "titles.titleidind", "reservepagegap", 16
```

**Example 6** Turns off concurrency optimization for the titles table:

```
sp_chgattribute "titles", "concurrency_opt_threshold", 0
```

**Example 7** Sets the identity gap for mytable to 20:

```
sp_chgattribute "mytable", "identity_gap", 20
```

**Example 8** Changes mytable to use the identity burning set factor setting instead of the identity\_gap setting:

```
sp_chgattribute "mytable", "identity_gap", 0
```

Sets the value of `sp_chgattribute` to 1, turning the optimistic index locking feature on.

```
sp_chgattribute "mytable", "optimistic_index_lock", 1
```

Sets the value of `sp_chgattribute` to 0, turning the optimistic index locking feature off.

```
sp_chgattribute "mytable", "optimistic_index_lock", 0
```

**Example 9** Switches the deallocation for text and image space on using `dealloc_first_txdpg`:

```
sp_chgattribute "dealloc_first_txdpg", 1
```



To switch the feature off:

```
sp_chgattribute "dealloc_first_txtpg", 0
```

**Example 10** Changes the `identity_burn_max` value for the `authors` table to 5:

```
sp_chgattribute "authors", "identity_burn_max", 0, 5
```

**Example 11** Tells the query optimizer to use a maximum of four threads:

```
sp_chgattribute my_table, "plldegree", 4
```

The query optimizer may choose less than four threads if it does not find enough resources. The same mechanism can be applied to an index. For example, the following example uses an index called `auth_ind` exists on `authors` to use two threads to access it:

```
sp_chgattribute "authors.auth_ind", "plldegree", 4
```

You must run `sp_chgattribute` from the current database.

#### Usage

- `sp_chgattribute` changes the `max_rows_per_page`, `fillfactor`, `reservepagegap`, `exp_row_size`, or `dealloc_first_txtpg` value for future space allocations or data modifications of the table or index. It does not affect the space allocations of existing data pages. You can change these values for an object only in the current database.
- Use `sp_help` to see the stored space management values for a table. Use `sp_helpindex` to see the stored space management values for an index.
- Setting `max_rows_per_page` to 0 tells Adaptive Server to fill the data or index pages and not to limit the number of rows (this is the default behavior of Adaptive Server if `max_rows_per_page` is not set).
- The `identity_burn_max` value stored in `sysobjects` as well as the current identity value are set to the new value.
- If the table is not empty, the new value of `identity_burn_max` is required to be greater than or equal to the current maximum value of the identity column. If the table is empty, you can set the value to any positive value in the valid range.
- Low values of `max_rows_per page` cause page splits. Page splits occur when new data or index rows need to be added to a page, and there is not enough room for the new row. Usually, the data on the existing page is split fairly evenly between the newly allocated page and the existing page. To approximate the maximum value for a nonclustered index, subtract 32 from the page size and divide the resulting number by the index key size. The following statement calculates the maximum value of `max_rows_per_page` for the nonclustered index `titleind`:

```

select
    (select @@pagesize - 32) / minlen
from sysindexes where name = "titleind"
-----
                288
    
```

- If you specify an incorrect value for max\_rows\_per\_page, fillfactor, reservepagegap, or exp\_row\_size, sp\_chgattribute returns an error message specifying the valid values.
- For more information on max\_rows\_per\_page, fillfactor, reservepagegap, exp\_row\_size, and concurrency\_opt\_threshold, see the Performance and Tuning Guide.
- For more information about identity gaps, see the section “Managing Identity Gaps in Tables” in Chapter 7, “Creating Databases and Tables” in the *Transact-SQL User’s Guide*.
- You cannot run this stored procedure from within a transaction.
- Only a user with sa\_role privileges can execute this stored procedure.
- You cannot set the optimistic index locking option for tables with datapages or datarow locking schemes.
- You cannot set the optimistic index locking option for tables in system databases, such as master or tempdb. You can set it only on user-defined tables.
- text and image pages are allocated space even when you perform a NULL update. You can use dealloc\_first\_txtpg to remove these empty text pages from the table.

A new update to the column results in reallocation of a text or image page.

Permissions

Only the object owner can execute sp\_chgattribute.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Commands** alter table, create index, create table

**System procedures** sp\_helpindex

## **sp\_cleanpwdchecks**

Description	sp_cleanpwdchecks is a custom stored procedure that allows you to define when and how to remove login and password-related attributes stored in user-defined tables.
Syntax	sp_cleanpwdchecks, <i>login_name</i>
Parameters	<i>login_name</i> specifies the login name of the cleanup to be performed.
Usage	sp_cleanpwdchecks is user-defined, and is dynamically called in the master database when you drop a login.

## sp\_clearpsex

Description	Clears the execution attributes of an Adaptive Server session that was set by <code>sp_setpsex</code> .
Syntax	<code>sp_clearpsex</code> <i>spid</i> , <i>exeattr</i>
Parameters	<p><i>spid</i> is the process ID of the session for which execution attributes are to be cleared.</p> <p><i>exeattr</i> identifies the execution attributes to be cleared. Values for <i>exeattr</i> are “priority” and “enginegroup”.</p>
Examples	<p>Drops the engine group entry for process 12.</p> <pre>sp_clearpsex 12, 'enginegroup'</pre>
Usage	<ul style="list-style-type: none"> <li>• If the execution attributes are not cleared during the lifetime of the session, they are cleared when the session exits or terminates abnormally.</li> <li>• <code>sp_clearpsex</code> fails if there are no online engines in the associated engine group.</li> <li>• When you drop an engine group entry, the session executes on an engine group determined by a class definition or by the default class.</li> <li>• Use <code>sp_who</code> to list process IDs (spids).</li> </ul>
Permissions	Only a System Administrator can execute <code>sp_clearpsex</code> to clear priority attributes for all users. Any user can execute <code>sp_clearpsex</code> to clear the priority attributes of tasks owned by that user.
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Documents** `sp_clearpsex` clears the execution attributes of the session that was set by `sp_setpsex`. For more information, see the *Performance and Tuning Guide*.

**System procedures** `sp_addexeclass`, `sp_bindexeclass`, `sp_dropexeclass`, `sp_showexeclass`, `sp_unbindexeclass`

## sp\_clearstats

**Description** Initiates a new accounting period for all server users or for a specified user. Prints statistics for the previous period by executing `sp_reportstats`.

**Syntax** `sp_clearstats [loginame]`

**Parameters** *loginame*  
is the user's login name.

**Examples** **Example 1** Initiates a new accounting period for all users.

```
sp_clearstats
Name      Since          CPU  Percent CPU      I/O      Percent I/O
-----  -
probe    Jun 19 1990         0         0%         0         0%
julie    Jun 19 1990    10000    24.9962%     5000    24.325%
jason    Jun 19 1990    10002    25.0013%     5321    25.8866%
ken      Jun 19 1990    10001    24.9987%     5123    24.9234%
kathy    Jun 19 1990    10003    25.0038%     5111    24.865%
(5 rows affected)
Total CPU      Total I/O
-----
40006          20555
5 login accounts cleared.
```

**Example 2** Initiates a new accounting period for the user "kathy."

```
sp_clearstats kathy
Name  Since          CPU  Percent CPU      I/O      Percent I/O
-----
KATHY Jul 24 1990    498    49.8998%     483924    9.1829%
(1 row affected)
Total CPU      Total I/O
-----
998            98392
1 login account cleared.
```

**Usage**

- `sp_clearstats` creates an accounting period and should be run only at the end of a period.
- Because `sp_clearstats` clears out the accounting statistics, you must record the statistics **before** running the procedure.
- `sp_clearstats` updates the `syslogins` field `accddate` and clears the `syslogins` fields `totcpu` and `totio`.

**Permissions** Only a System Administrator can execute `sp_clearstats`.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also

**System procedures** sp\_reportstats



## sp\_client\_addr

**Description** Displays the IP (Internet Protocol) address of every Adaptive Server task with an attached client application, including the spid and the client host name.

**Syntax** sp\_client\_addr [*spid*]

**Parameters** *spid*  
specifies one task for which you require an IP address.

**Examples** **Example 1** Lists IP addresses for all tasks:

```
sp_client_addr
-----
spid  hostname  ipaddr
-----
11    FRED       162.66.131.36
21    BARNEY     162.66.100.233
22    WILMA     162.66.100.206
23    BETTY     162.66.100.119
24    PEBBLES  162.66.100.125
25    BAMBAM   162.66.100.124
(6 rows affected)
(return status = 0)
```

**Example 2** Shows IP addresses for spid 21:

```
sp_client_addr 21
-----
spid  hostname  ipaddr
-----
21    BARNEY     162.66.100.233
(1 row affected)
(return status = 0)
```

**Example 3** Shows the result when a client application is not connected via IP:

```
sp_client_addr 11
-----
spid  hostname  ipaddr
-----
11    FRED       0.0.0.0
(1 row affected)
(return status = 0)
```

**Example 4** Shows the result of a task with no attached client; for example, Housekeeper:

```
sp_client_addr 9
```

```

-----
spid  hostname  ipaddr
-----
9          NULL
(1 row affected)
(return status = 0)

```

**Example 5** Shows the result when an incorrect spid is specified:

```

sp_client_addr 99
-----
Msg 18934, Level 16, State 1:
Procedure "sp_client_addr", Line 32:
spid not found
(return status = 1)

```

Usage

- If the client application is not attached by IP, the address appears as 0.0.0.0. Adaptive Server does not support display of addresses of protocols other than IP.
- If a task has no attached client (Housekeeper, for instance), the IP address appears as “NULL”. Tasks with no attached client are not listed when you use sp\_client\_addr with no parameter.

Permissions

Any user can execute sp\_client\_addr.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_who

## sp\_clusterlockusage

**Description** *In cluster environments* – reports on the free, used, and retained locks in the cluster.

**Syntax** sp\_clusterlockusage

**Examples** Reports the locks currently used in the cluster:

Lock Usage	count	% of total
-----	-----	-----
Total Locks	95039	n/a
Free Locks	85807	90.29 %
Used Locks	9232	9.71 %
Object Locks	4032	4.24 %
Physical Locks	233	0.25 %
Table Locks	0	0.00 %
Page Locks	0	0.00 %
Row Locks	17	0.02 %
Others	501	0.53 %
Retention Used	0	0.00 %

**Usage**

- Retention Used reports on the number of locks that are not owned by any task, but are owned at the cluster level because of lock retention.

## sp\_cluster

Description	<b>Cluster environments only</b> Performs a number of procedures related to clusters.
Syntax	<p>Migrates a connection to a different logical cluster or instance:</p> <pre>sp_cluster connection, migrate, lc_name, instance_name, "spid_list"</pre> <p>Determines if previous connection migrations to a new instance are pending, and terminates the migrations if they are:</p> <pre>sp_cluster connection, ['migrate_status'   'migrate_cancel' ][, 'spid_list']</pre> <p>Modifies an outstanding action, such as canceling the action or changing the timing of the action:</p> <pre>sp_cluster logical, "action", lc_name, {     cancel, action_handle       modify_time, action_handle, wait_option[, timeout ]       release, action_handle }</pre> <p>Adds a resource or one or more routes to the logical cluster:</p> <pre>sp_cluster logical, "add", lc_name, {     route, route_type, key_list       instance, instance_list       failover, instance_list }</pre> <p>Moves a route from one logical cluster to another:</p> <pre>sp_cluster logical, "alter", lc_name, route, route_type, key_list</pre> <p>Creates a new logical cluster:</p> <pre>sp_cluster logical, "create", lc_name</pre> <p>Stops the logical cluster on one or more instances or the entire logical cluster, and places the instances or the cluster in the inactive state:</p> <pre>sp_cluster logical, "deactivate", lc_name, {     "cluster"       "instance", instance_list } [, wait_option[, timeout[, @handle output ]]]</pre> <p>Drops a logical cluster, or one or more resources from the logical cluster:</p> <pre>sp_cluster logical, "drop", lc_name, {cluster   instance, instance_list   failover, instance_list   route, route_type, key_list }</pre> <p>Reverses a manual failover, reinstating the original base instances:</p> <pre>sp_cluster logical, "failback", lc_name, { cluster[, wait_option[, timeout[, @handle output ]]]  </pre>

```
instance, from_instance_list, to_instance_list[, wait_option[,
timeout[, @handle output ]]] }
```

Initiates a manual failover from base instances to failover instances.

```
sp_cluster logical, "failover", lc_name, {cluster
[, to_instance_list[, wait_option[, timeout[, @handle output ]]]
| instance, from_instance_list, to_instance_list[, wait_option[,
timeout[, @handle output ]]] }
```

Manually gathers and migrates a group of connections to a different logical cluster:

```
sp_cluster logical, 'gather', lc_name
```

Displays complete syntax for `sp_cluster logical`:

```
sp_cluster logical, "help"
```

Stops the logical cluster on one or more instances or the entire logical cluster:

```
sp_cluster logical, "offline", lc_name,
{cluster | instance, instance_list }
[, wait_option[, timeout[, @handle output ]]]
```

Starts the default logical cluster on one or more instances:

```
sp_cluster logical, "online", { lc_name[, instance_list]}
```

Sets logical cluster rules: the open logical cluster, the failover mode, the system view, the start-up mode, and the load profile:

```
sp_cluster logical, "set", lc_name, { open
| failover, failover_mode
| system_view, view_mode
| startup, { automatic | manual }
| load_profile, profile_name }
login_distribution, { affinity | "round-robin" }
```

Displays information about a logical cluster:

```
sp_cluster logical, "show"
[, lc_name[, {action[, state] | route[, type[, key]}]]]
```

Lets you set up and manage the load profile for the logical cluster:

```
sp_cluster profile, [ "show" [, profile_name ]
| "create", profile_name
| "drop", profile_name
| "set", profile_name [, weight [, wt_metric [, wt_value ]
| threshold [, thr_metric [, thr_value ]]]]
```

Lets you set up and manage the load profile for the logical cluster:

```
sp_cluster profile, [ "show" [, profile_name ] | "create", profile_name |
"drop", profile_name | "set", profile_name [, weight [, wt_metric [,
wt_value ] | threshold [, thr_metric [, thr_value ]]]]
```

Parameters

sp\_cluster connection, migrate, *lc\_name*, *instance\_name*, "*spid\_list*"  
where:

- *lc\_name* – is the name of the logical cluster.
- *instance\_name* – is the name of the instance.
- *spid\_list* – is the list of spids you are migrating. Separate multiple spids with semicolons.

sp\_cluster connection, ['migrate\_status' | 'migrate\_cancel' ], '*spid\_list*'  
where:

- *spid\_list* – is the list of spids you are investigating.
- *migrate\_cancel* – indicates you are terminating the connection migrations.
- *migrate\_status* – indicates you are investigating the status of connection migrations.

sp\_cluster logical, "action", *lc\_name*, {cancel, *action\_handle* | modify\_time, *action\_handle*, *wait\_option*[, *timeout* ] |release, *action\_handle*}  
where:

- *cancel* – specifies an action to be canceled.
- *action\_handle* – is the action identifier.
- *modify\_time* – specifies that the time of the action is to be modified.
- *wait\_option* – is how the time of the action is to be modified. Values are:
  - *wait* – indicates that existing connections are given a specified amount of time (or an infinite amount of time if no *timeout* is given) to migrate or disconnect.
  - *nowait* – indicates that existing connections are migrated or disconnected immediately.
  - *until* – indicates that existing connections are given until a specific time of day to migrate or disconnect.
- *timeout* – is a specific amount of time (when used with *wait*) or a specific time (when used with *until*). The format is "hh:mm:ss" according to a 24-hour clock. For example, *timeout* records "11:30 p.m" (or "11:30pm") as "23:30:00".
- *release* – specifies that all resources held by a completed action are to be released.

`sp_cluster logical, "add", lc_name, { route, route_type, key_list | instance, instance_list | failover, instance_list}`

where:

- *lc\_name* – is the name of a logical cluster.
- *route* – specifies that one or more routes are to be added to the logical cluster
- *route\_type* – is the type of route to be added. Values are:
  - *application* – specifies a route for an application name to the logical cluster.
  - *login* – specifies a route for a login name to the logical cluster.
  - *alias* – specifies a route for a server name alias to the logical cluster.
- *key\_list* – is a list of applications, logins, or aliases, depending on the route type. Elements in the key list are delimited by semicolons.
- *instance* – specifies that one or more base instances are to be added to the logical cluster.
- *instance\_list* – is the list of instances to be added. Separate multiple instances with semicolons.
- *failover* – specifies that one or more failover instances are to be added to the logical cluster.

`sp_cluster logical, "alter", lc_name, route, route_type, key_list`

where:

- *lc\_name* – is the name of a logical cluster.
- *route* – specifies a route is to be altered.
- *route\_type* – is the type of route to be altered. Values are:
  - *application* – specifies a route for an application name to the logical cluster.
  - *login* – specifies a route for a login name to the logical cluster.
  - *alias* – specifies a route for a server name alias to the logical cluster.
- *key\_list* – is a list of applications, logins, or aliases, depending on the route type. Elements in a key list are delimited with semicolons.

`sp_cluster logical, "create", lc_name`

where:

- *lc\_name* – is name of the logical cluster.

`sp_cluster logical, "deactivate", lc_name, { "cluster" | "instance", instance_list }  
[, wait_option[, timeout[, @handle output ]]]`

- *lc\_name* – name of a logical cluster.
- cluster – specifies the entire cluster.
- instance – specifies that only certain instances in the logical cluster are to be placed in the inactive state.
- *instance\_list* – list of selected instances in the logical cluster.
- *wait\_option* – the valid options are:
  - wait – indicates that existing connections are given a specified amount of time (or an infinite amount of time if no *timeout* is given) to migrate or disconnect.
  - nowait – indicates that existing connections are migrated or disconnected immediately.
  - until – indicates that existing connections are given until a specific time of day to migrate or disconnect.
- *timeout* – a specific amount of time (when used with wait) or a specific time (when used with until). The format is “hh:mm:ss” according to a 24-hour clock. For example, *timeout* records 11:30 p.m. as 23:30:00.
- @handle output – specifies that an action handle is to be retrieved for the action.



`sp_cluster logical, "drop", lc_name, { cluster | instance, instance_list | failover, instance_list | route, route_type, key_list }`

where:

- *lc\_name* – name of a logical cluster.
- *cluster* – specifies the entire cluster.
- *instance* – specifies that only certain instances in the logical cluster are to be placed in the inactive state.
- *instance\_list* – list of selected instances in the logical cluster.
- *wait\_option* – where the valid options are:
  - *wait* – indicates that existing connections are given a specified amount of time (or an infinite amount of time if no *timeout* is given) to migrate or disconnect.
  - *nowait* – indicates that existing connections are migrated or disconnected immediately.
  - *until* – indicates that existing connections are given until a specific time of day to migrate or disconnect.
- *timeout* – a specific amount of time (when used with *wait*) or a specific time (when used with *until*). The format is “hh:mm:ss” according to a 24-hour clock. For example, *timeout* records 11:30 p.m. as 23:30:00.
- *@handle output* – specifies that an action handle is to be retrieved for the action.

sp\_cluster logical, "failback", *lc\_name*, {cluster[, *wait\_option*[, *timeout*[, @handle output ]]] | instance, *from\_instance\_list*, *to\_instance\_list*[, *wait\_option*[, *timeout*[, @handle output ]]] }

where:

- *lc\_name* – name of a logical cluster.
- cluster – specifies the entire cluster.
- *to\_instance\_list* – list of predefined failover instances. A value of NULL activates the first failover group.
- *from\_instance\_list* – list of instances that are to be taken offline.
- *wait\_option* – where the valid options are:
  - wait – indicates that existing connections are given a specified amount of time (or an infinite amount of time if no *timeout* is given) to migrate or disconnect.
  - nowait – indicates that existing connections are migrated or disconnected immediately.
  - until – indicates that existing connections are given until a specific time of day to migrate or disconnect.
- *timeout* – a specific amount of time (when used with wait) or a specific time (when used with until). The format is "hh:mm:ss" according to a 24-hour clock. For example, *timeout* records 11:30 p.m. as 23:30:00.
- @handle output – specifies that an action handle is to be retrieved for the action.

`sp_cluster logical, "failover", lc_name, {cluster[, to_instance_list[, wait_option[, timeout[, @handle output ]]] | instance, from_instance_list, to_instance_list[, wait_option[, timeout[, @handle output ]]] }`

where:

- *lc\_name* – name of a logical cluster.
- cluster – specifies the failover of the entire logical cluster.
- *to\_instance\_list* – list of predefined failover instances. A value of NULL activates the first failover group.
- *wait\_option* – how the time of the action is to be recorded. Values are:
  - wait – indicates that existing connections are given a specified amount of time (or an infinite amount of time if no *timeout* is given) to migrate or disconnect.
  - nowait – indicates that existing connections are migrated or disconnected immediately.
  - until – indicates that existing connections are given until a specific time of day to migrate or disconnect.
- *timeout* – is a specific amount of time (when used with wait) or a specific time (when used with until). The format is "hh:mm:ss" according to a 24-hour clock. For example, *timeout* records 11:30 pm as 23:30:00.
- @handle output – specifies that an action handle is to be retrieved for the failover.
- instance – specifies that only selected instances in the logical cluster are to fail over.
- *from\_instance\_list* – list of instances that are to be taken offline

`sp_cluster logical, 'gather', lc_name`

where:

- gather – indicates you are gathering a set of qualified connections to migrate them to another logical cluster.
- *lc\_name* – name of a logical cluster to which you are migrating the connections.

sp\_cluster logical, "offline", *lc\_name*, { cluster | instance, *instance\_list* }  
[, *wait\_option*[, *timeout*[, @handle output ]]]

where:

- *lc\_name* – name of a logical cluster.
- cluster – specifies the entire cluster.
- instance – specifies that only selected instances in the logical cluster are to taken offline.
- *instance\_list* – list of selected instances in the logical cluster.
- *wait\_option* – how the time of the action is to be specified. Values are:
  - wait – indicates that existing connections are given a specified amount of time (or an infinite amount of time if no *timeout* is given) to migrate or disconnect.
  - nowait – indicates that existing connections are migrated or disconnected immediately.
  - until – indicates that existing connections are given until a specific time of day to migrate or disconnect.
- *timeout* – is a specific amount of time (when used with wait) or a specific time (when used with until). The format is "hh:mm:ss" according to a 24-hour clock. For example, *timeout* records 11:30 pm as 23:30:00.
- @handle output – specifies that an action handle is to be retrieved for the action.
- *from\_instance\_list* – list of instances that are to be taken offline

sp\_cluster logical, "online", { *lc\_name*[, *instance\_list*] }

where:

- *lc\_name* – name of a logical cluster.
- *instance\_list* – list of selected instances in the logical cluster.

`sp_cluster logical, "set", lc_name, {open | failover, failover_mode | system_view, view_mode | startup, { automatic | manual } | load_profile, profile_name } login_distribution, { affinity | "round-robin" }`

where:

- *lc\_name* – name of a logical cluster.
- open – sets the open logical cluster. Unrouted connections are sent to the open logical cluster.
- failover *failover\_mode* – sets the failover mode of the logical cluster. Values for *failover\_mode* are:
  - instance – specifies a 1:1 failover strategy; every time a base instance fails, a failover resource is brought online.
  - group – specifies that failover resources are brought online only after all base instances in the cluster fail.
- system\_view *view\_mode* – sets the default system view for tasks running in the logical cluster. Values for *view\_mode* are:
  - instance – specifies that monitoring and informational tools such as `sp_who`, `sp_lock`, and monitoring tables describe an instance.
  - cluster – specifies that monitoring and informational tools such as `sp_who`, `sp_lock`, and monitoring tables describe the whole cluster.
- startup { automatic | manual } – sets the start-up mode of the logical cluster.
  - automatic – specifies that the logical cluster is started automatically when the cluster starts.
  - manual – specifies that the logical cluster must be started manually.
- login\_distribution – specifies how the Cluster Edition distributes connections when a logical cluster spans multiple instances.
- @handle output – specifies that an action handle is to be retrieved for the action.
- *from\_instance\_list* – list of instances that are to be taken offline

`sp_cluster logical, "show"[, lc_name[, {action[, state] | route[, type[, key]}]]]`

where:

- *lc\_name* – name of the logical cluster. If NULL is entered, summary information for all logical clusters is displayed.
- *action* – specifies information about administrative actions: failover, failback, online, offline, deactivate.
- *state* – one of: cancelled, complete, or active.
- *route* – specifies information about routes.
- *type* – is one of: application, alias, or login.
- *key* – a specific login, alias, or application name.

---

```
sp_cluster profile, [ "show" [, profile_name ] | "create", profile_name | "drop",
profile_name | "set", profile_name [, weight [, wt_metric [, wt_value ] | threshold [,
thr_metric [, thr_value ] ] ]
```

- `show` – displays configured load profiles and their settings.
- *profile\_name* – name of a load profile.
- `creates` – creates a new load profile.
- `drop` – drops a load profile.
- `set` – specifies attributes of a load profile. You must set each attribute individually.
- `weight` – specifies a weight attribute.
- *wt\_metric* – specifies an individual weight metric. Values are:
  - `user connections` – the capacity of an instance to accept a new connection, based on resource availability.
  - `cpu utilization` – the capacity of an instance to accept a new connection, based on resource availability.
  - `run queue` – the capacity of an instance to accept a new connection, based on resource availability.
  - `io load` – outstanding asynchronous I/Os.
  - `engine deficit` – the difference in the number of online engines among instances in the cluster.

---

**Note** engine deficit is measurable only when instances in the cluster have unequal numbers of engines. engine deficit adds a metric for maximum relative capacity to the load score.

---

- `user metric` – an optional, user-supplied metric.
- *wt\_value* – specifies a weight value. Valid values are 0 to 255. A weight of zero (0) excludes the metric from calculation.
- `threshold` – specifies a threshold attribute.
- *thr\_metric* – specifies a particular threshold attribute. Values are:
  - `dynamic` – specifies a threshold for dynamic load distribution.
  - `login` – specifies a threshold for login redirection

- hysteresis – specifies a minimum load score for any connection redirection.
- *thr\_value* – depends on value of *thr\_metric*. When *thr\_metric* is:
  - dynamic or login – *thr\_value* is the percentage difference between the load scores of two instances. Valid values are 0 to 100. A weight of zero (0) disables this form of load distribution.
  - hysteresis – *thr\_value* is the minimum load score for the target instance that must be met before dynamic load distribution or login redirection can occur.

Examples

**Example 1** *sp\_cluster connection* – moves the connection with a spid of 73 into the SalesLC cluster:

```
sp_cluster connection, migrate, SalesLC, NULL, '73'
```

**Example 2** *sp\_cluster connection* – moves the current connection to the “ase3” instance:

```
sp_cluster connection, migrate, NULL, ase3
```

**Example 3** *sp\_cluster connection* – moves connections with spid values of 73 and 75 into “ase3” instance and the SalesLC cluster:

```
sp_cluster connection, migrate, SalesLC, ase3, '73;75'
```

**Example 4** *sp\_cluster connection* – determines if there is a connection migration occurring on spid 73; if there is, the Cluster Edition cancels the migration:

```
sp_cluster connection, 'migrate_cancel', '73'
```

**Example 5** *sp\_cluster connection* – checks the status of migrated connections for connections with a spid value of 73:

```
sp_cluster connection, 'migrate_status', '73'
```

SPID	LogicalCluster	Instance	Migration	LogicalCluster	Migration	Instance	Command
73	SystemLC	ase1	SalesLC			ase3	connection migrate

**Example 6** *sp\_cluster local "action"* – cancels a timed action on the “SalesLC” logical cluster. The action handle is 4390.

```
sp_cluster logical, "action", SalesLC, cancel, "4390"
```

**Example 7** *sp\_cluster local "action"* – changes the wait option for existing action 5364 to nowait.

```
sp_cluster logical, "action", SalesLC, modify_time,
```



```
"5364", nowait
```

**Example 8** *sp\_cluster local "action"* – releases action 3456 for the “SalesLC” logical cluster.

```
sp_cluster logical, "action", SalesLC, release, "3456"
```

**Example 9** *sp\_cluster local "action"* – releases all completed or cancelled actions for the “SalesLC” logical cluster.

```
sp_cluster logical, "action", SalesLC, release, "all"
```

**Example 10** *sp\_cluster local "add"* – adds instances “ase1” and “ase2” to the “SalesLC” logical cluster.

```
sp_cluster logical, "add", SalesLC, instance,
"ase1;ase2"
```

**Example 11** *sp\_cluster local "add"* – creates one failover group with “ase3” for “SalesLC”.

```
sp_cluster logical, "add", SalesLC, failover, ase3
```

**Example 12** *sp\_cluster local "add"* – routes the logins “tom”, “dick”, and “harry” to the “SalesLC” logical cluster

```
sp_cluster logical, "add", SalesLC, route, login,
"tom;dick;harry"
```

**Example 13** *sp\_cluster local "add"* – routes the field\_sales application to the “SalesLC” logical cluster.

```
sp_cluster logical, "add", SalesLC, route, application,
field_sales
```

**Example 14** *sp\_cluster logical, "alter"* – creates a route of type alias to logical cluster “lc1” with the alias “SalesLC”. Then, changes the logical cluster association of the route from “lc1” to “lc2”. The route is identified by its route type (alias) and its key (SalesLC).

```
sp_cluster logical, "add", "lc1", "route", "alias", "SalesLC"
sp_cluster logical, "alter", "lc2", "route", "alias", "SalesLC"
```

**Example 15** *sp\_cluster logical, "create"* – reates a logical cluster named “SalesLC”:

```
sp_cluster logical, "create", SalesLC
```

**Example 16** *sp\_cluster logical, "deactivate"* – immediately stops all instances in the “SalesLC” logical cluster, and places “SalesLC” in the inactive state:

```
sp_cluster logical, "deactivate", SalesLC, cluster, nowait
```

**Example 17** *sp\_cluster logical, "deactivate"* – stops the “ase1” and “ase2” instances, and places “SalesLC” in the inactive state:

```
sp_cluster logical, "deactivate", SalesLC, instance, "ase1;ase2"
```

**Example 18** *sp\_cluster logical, "drop"* – drops the “SalesLC” logical cluster:

```
sp_cluster logical, "drop", SalesLC, cluster
```

**Example 19** *sp\_cluster logical, "drop"* – drops the base instances “ase1” and “ase2” from the “SalesLC” logical cluster.

```
sp_cluster logical, "drop", SalesLC, instance, "ase1;ase2"
```

**Example 20** *sp\_cluster logical, "drop"* – drops the routes from the applications field\_sales and web\_sales from the “SalesLC” logical cluster.

```
sp_cluster logical "drop", SalesLC, route, application,
    "field_sales;web_sales"
```

**Example 21** *sp\_cluster logical, "failback"* – fails back the “SalesLC” logical cluster:

```
sp_cluster logical, "failback", SalesLC, cluster
```

**Example 22** *sp\_cluster logical, "failback"* – “SalesLC” is running on “ase3” and “ase1”. In this example, “ase3” fails back to “ase1”, and “SalesLC” continues to run on “ase2”. The action takes place in two minutes:

```
declare @out_handle varchar(15)

execute
sp_cluster logical, "failback", SalesLC, instance,
ase3, ase1, wait, "00:02:00", @handle = @out_handle
output
```

**Example 23** *sp\_cluster logical, "failover"* – fails over the “SalesLC” logical cluster to the first group of predefined failover resources. The failover waits 2 minutes before terminating connections.

```
declare @out_handle varchar(15)

execute
sp_cluster logical, "failover", SalesLC, cluster, NULL, wait, "00:02:00",
@handle = @out_handle output
```

Action '2' has been issued for the 'failover cluster' command.

Logical Cluster	Handle	Action	From	To
	State	InstancesWaiting	ConnectionsRemaining	WaitType
	StartTime	Deadline	CompleteTime	
-----				

```

-----
-----
SalesLC          2 failover cluster    2, 4    NULL
complete        0                    0 wait
Nov 15 2007  3:23PM    Nov 15 2007  3:25PM    Nov 15 2007  3:23PM

```

Remember to issue the 'sp\_cluster logical, action, <logical cluster name>, release, <handle>' command for any cancelled or completed actions.

**Example 24** *sp\_cluster logical, "failover"* – “SalesLC” is running on “ase1” and “ase2”. In this example, “ase1” fails over to “ase3”, and “SalesLC” continues to run on “ase2”. No wait option is specified, so it defaults to an indefinite wait.

```

sp_cluster logical, "failover", SalesLC, instance,
ase1, ase3

```

Action '1' has been issued for the 'failover instance' command.

```

Logical Cluster Handle      Action      From To
      State      InstancesWaiting ConnectionsRemaining
      WaitType      StartTime      Deadline      CompleteTime
-----
-----
SalesLC          1 failover instance      1      4
complete        0
infinite        Nov 15 2007  3:06PM    NULL Nov 15 2007
3:06PM

```

Remember to issue the `sp\_cluster logical, action, <logical cluster name>, release, <handle>' command for any cancelled or completed actions.

**Example 25** *sp\_cluster logical, "gather"* – gathers and migrates a group of connections to the new\_stores logical cluster:

```

sp_cluster logical, 'gather', new_stores

```

**Example 26** *sp\_cluster logical, "help"* – displays syntax for the sp\_cluster logical stored procedures.

```

sp_cluster logical, "help"

```

Usage for sp\_cluster 'logical':

```

sp_cluster 'logical', 'help' [, <module>]

```

To show the logical cluster configuration:

```

sp_cluster 'logical', 'show'
sp_cluster 'logical', 'show', <lname>
sp_cluster 'logical', 'show', <lname> | NULL, 'action' [, <state>]
sp_cluster 'logical', 'show', <lname> | NULL, 'route' [, <type [, <key>]]

```

To create a logical cluster:

```
sp_cluster 'logical', 'create', <lcname>
```

To add resources to a logical cluster:

```
sp_cluster 'logical', 'add', <lcname>, 'failover', <instance_list>
[,<group>]
sp_cluster 'logical', 'add', <lcname>, 'instance', <instance_list>
sp_cluster 'logical', 'add', <lcname>, 'route', <route_type>, <key_list>
```

To drop resources from a logical cluster:

```
sp_cluster 'logical', 'drop', <lcname>, 'cluster'
sp_cluster 'logical', 'drop', <lcname>, 'failover', <instance_list>
sp_cluster 'logical', 'drop', <lcname>, 'instance', <instance_list>
sp_cluster 'logical', 'drop', <lcname>, 'route', <route_type>, <key_list>
```

Argument details:

<lcname> is a logical cluster nam  
<instance\_list> is a ';' separated list of instance  
<route\_type> is one of {'user', 'application', 'alias'  
<key\_list> is a ';' separated list of keys

To set attributes of a logical cluster:

```
sp_cluster 'logical', 'set', <lcname>, 'open'
sp_cluster 'logical', 'set', <lcname>, 'down_routing', 'disconnect' |
'system' | 'open'
sp_cluster 'logical', 'set', <lcname>, 'failover', 'instance' | 'group'
sp_cluster 'logical', 'set', <lcname>, 'load_profile', <profile_name>
sp_cluster 'logical', 'set', <lcname>, 'startup', 'automatic' | 'manual'
sp_cluster 'logical', 'set', <lcname>, 'system_view', 'instance' | 'cluster'
```

To start and stop a logical cluster:

```
sp_cluster 'logical', 'online', <lcname>[, <instance_list>]
sp_cluster 'logical', 'offline', <lcname>, 'cluster'[,
<wait_option>[,<time>[, @handle output]]]
sp_cluster 'logical', 'offline', <lcname>, 'instance',
<instance_list>[,<wait_option>[, <time>[,
@handle output]]]
```

To failover and failback a logical cluster:

```
sp_cluster 'logical', 'failover', <lcname>, 'cluster'[, <instance_list>[,
<wait_option>[, <time>[,
@handle output]]]]
sp_cluster 'logical', 'failover', <lcname>, 'instance',
<from_instance_list>, <instance_list>[,
<wait_option>[,<time>[, @handle output]]]
```

```

sp_cluster 'logical', 'failback', <lname>, 'cluster'[, <instance_list>[,
<wait_option>[, <time>[,
    @handle output]]]]
sp_cluster 'logical', 'failback', <lname>, 'instance',
<from_instance_list>, <instance_list>[,
    <wait_option>[, <time>[, @handle output]]]

```

To work with action handles:

```

sp_cluster 'logical', 'action', <lname>, 'cancel', <handle>
sp_cluster 'logical', 'action', <lname>, 'modify_time', <handle>,
<wait_option>[, <time>]
sp_cluster 'logical', 'action', <lname>, 'release', <handle>

```

Argument details:

<wait\_option> is one of {'nowait', 'wait', 'until'}  
 <time> is a time in hh:mm:ss format  
 <handle> is an action handle

**Example 27** *sp\_cluster logical, "offline"* – immediately stops all instances in the “SalesLC”, and places “SalesLC” in the offline state.

```
sp_cluster logical, "offline", SalesLC, cluster, nowait
```

**Example 28** *sp\_cluster logical, "offline"* – stops the “ase1” and “ase2” instances in “SalesLC”, and places “SalesLC” in the offline state.

```
sp_cluster logical, "offline", SalesLC, instance, "ase1;ase2"
```

**Example 29** *sp\_cluster logical, "online"* – starts all base instances in the “SalesLC” logical cluster, and brings the cluster online.

```
sp_cluster logical, "online", SalesLC
```

**Example 30** *sp\_cluster logical, "online"* – starts the “ase1” instance in “SalesLC”, and brings the cluster online.

```
sp_cluster logical, "online", SalesLC, ase1
```

**Example 31** *sp\_cluster logical, "set"* – sets the load profile for the “SalesLC” logical cluster to the Sybase profile `sybase_profile_oltp`:

```
sp_cluster logical, "set", SalesLC, load_profile,
sybase_profile_oltp
```

**Example 32** *sp\_cluster logical, "set"* – sets the default system view to cluster:

```
sp_cluster logical, "set", SalesLC, system_view, cluster
```

**Example 33** *sp\_cluster logical, "show"* – displays summary information for all configured logical clusters.

```
sp_cluster logical, "show", NULL
```

ID	Name	State	Online	Instances	Connections
1	mycluster	online	4		1
2	SalesLC	online	2		0
3	HRLC	online	1		0
4	CatchallLC	offline	0		0

Logical cluster 'mycluster' is the system logical cluster.  
 Logical cluster 'CatchallLC' is the open logical cluster.

Logical Cluster	Instance	State	Type	Connections	Load Score
HRLC	silk	online	base	0	0.01
SalesLC	cotton	offline	failover	0	0.00
SalesLC	linen	online	base	0	0.00
SalesLC	silk	offline	failover	0	0.01
SalesLC	wool	online	base	0	0.01
mycluster	cotton	online	base	0	0.00
mycluster	linen	online	base	0	0.00
mycluster	silk	online	base	0	0.01
mycluster	wool	online	base	1	0.01

**Example 34** *sp\_cluster logical, "show"* – displays a list of all outstanding actions.

```
sp_cluster logical, "show", NULL, action
```

**Example 35** *sp\_cluster logical, "show"* – displays information for the SalesLC logical cluster.

```
sp_cluster logical, "show", SalesLC
```

ID	Name	State	Online	Instances	Connections
2	OrderLC	online	1		0

Instance	State	Type	Connections	Load Score	Failover Gro
asedemo1	online	base	0	0.78	NU

Attribute	Setting
Down Routing Mode	system
Failover Mode	instance with fail_to_any
LC Roles	none
Load Profile	sybase_profile_oltp

```

Login Distribution          affinity
Startup Mode              automatic
System View               cluster
    
```

```

Route Type                Route Key
-----
application              order_app
    
```

```

Logical cluster 'OrderLC' has no associated actions.
(return status = 0)
    
```

**Example 36** *sp\_cluster profile* – creates the load profile “my\_profile”:

```

sp_cluster profile, "create", my_profile
    
```

**Example 37** *sp\_cluster profile* – specifies the metric weights for “my\_profile.” “user connections” is set to zero, which excludes that metric from the profile:

```

sp_cluster profile, "set", my_profile, weight, "user connections", '0'
sp_cluster profile, "set", my_profile, weight, cpu utilization, '20'
sp_cluster profile, "set", my_profile, weight, runqueue, '30'
sp_cluster profile, "set", my_profile, weight, io load, '10'
sp_cluster profile, "set", my_profile, weight, engine deficit, '10'
sp_cluster profile, "set", my_profile, weight, user metric, '30'
    
```

**Example 38** *sp\_cluster profile* – sets the login redirection threshold to 80 and the hysteresis value to 10 for “my\_profile:”

```

sp_cluster profile, "set", my_profile, threshold, login, '80'
sp_cluster profile, "set", my_profile, threshold, hysteresis, '10'
    
```

**Example 39** *sp\_cluster profile* – displays information about a configured profile:

```

sp_cluster profile, "show", my_profile
    
```

ID	Profile	Type	Connections	CPU Run	Queue
100	my_profile	user	0	20 30 10	10 30 30 0 20

```

Profile                Logical Cluster
-----
my_profile             SalesLC
    
```

```

Profile                Logical Cluster Instance

Load Score            Connections Score
CPU Score              Run Queue Score
IO Load Score         User Score
    
```

```

-----
-----
-----
-----
my_profile          SalesLC          ase1
                   0.028871          0.000000
                   0.028871          0.000000
                   0.000000          0.000000
                   0.000000
my_profile          ase2
                   0.029474          0.000000
                   0.029474          0.000000
                   0.000000          0.000000
                   0.000000
my_profile          ase3
                   0.019503          0.000000
                   0.019503          0.000000
                   0.000000          0.000000
                   0.000000
my_profile          ase4
                   0.582675          0.000000
                   0.290930          0.291745
                   0.000000          0.000000
                   0.000000

```

Usage

sp\_cluster connection

To migrate the current spid, omit *spid\_list* from sp\_cluster connection, migrate.

sp\_cluster logical, action

- Retrieve an action handle by querying the monLogicalClusterAction table or executing:

```
sp_cluster logical, "show", NULL, action
```

- Any client that does not support migration is disconnected when it completes a SQL batch and has no open transactions, or when the *timeout* period expires, which ever comes first.
- Any client remaining at the end of the *timeout* period is disconnected.
- Cancelling an action does not roll back the action. Additional tasks may be necessary to restore the configuration to the original state.
- Only completed actions can be released. Releasing an action removes the completed action from the system and from the monLogicalClusterAction table.



`sp_cluster logical, 'add'`

- You cannot add a base instance or a failover resource to the system logical cluster.
- Separate multiple instance, failover resources, or applications with semicolons.
- Create multiple failover groups by enclosing the group in parenthesis, and separating groups with a comma. If you do not specify group, a new group is created and the instances are added to that group. You can specify a group into which the instances are placed (the group number must be quoted).

For example:

```
1> sp_cluster logical, 'add', tempLC, failover, "asedemo3;asedemo2"
2> go
Added failover instance 'asedemo3' to group 1 for logical cluster
'tempLC'.
Added failover instance 'asedemo2' to group 1 for logical cluster
'tempLC'.
```

And then add the instances to the group:

```
1> sp_cluster logical, 'add', tempLC, failover, asedemo4, "4"
2> go
Added failover instance 'asedemo4' to group 4 for logical cluster
'tempLC'.
```

`sp_cluster logical, "deactivate"`

- You cannot use the deactivate command for the system logical cluster.
- `offline` is identical to the `deactivate`, except `deactivate` places stopped instances or clusters in the inactive state and `offline` places them in the offline state.

`sp_cluster logical "drop"`

- You must place an instance or failover resource in the offline state before dropping it.
- Dropping a cluster also drops all routes, resources, and settings associated with the cluster.

`sp_cluster logical "failback"`

To initiate a failback, the logical cluster must first be failed over.

`sp_cluster logical "gather"`

- The logical cluster must be online to gather connections manually

- The logical cluster must have defined routes to gather connections

`sp_cluster logical, "offline"`

- You cannot use the offline command for the system logical cluster.
- `offline` is identical to `deactivate`, except `deactivate` places stopped instances or clusters in the inactive state.

`sp_cluster logical "online"`

You cannot use the online command for the system logical cluster.

`sp_cluster logical "set"`

Only one logical cluster can have the open property. When you set the open property to a new logical cluster, the open property is removed from the previous open logical cluster.

`sp_cluster profile`

- The user metric value must be normalized so that it is compatible with values for metrics provided by Sybase. Consider a user metric that measures response times. If the maximum acceptable response time is 10 seconds and the measured value is 5, the metric value is 50 ( $5/10 \times 100 = 50$ ).
- Threshold metrics let you configure at what point a load imbalance should cause connections to be redirected from one instance to another. The workload manager redirects connections when the load score difference (as a percent) between the target instance and the least loaded instance meets or exceeds the threshold value.

The hysteresis value guards against redirection when the load score difference meets the threshold value, but the instance load scores (for example, 2 and 8) are so low that redirection is not appropriate.

## sp\_cmp\_all\_qplans

Description	Compares all abstract plans in two abstract plan groups.
Syntax	<code>sp_cmp_all_qplans group1, group2 [, mode]</code>
Parameters	<p><i>group1, group2</i> are the names of the two abstract plan groups.</p> <p><i>mode</i> is the display option. Table 1-14 shows the modes and what information they report.</p>

**Table 1-14: Report modes for sp\_cmp\_all\_qplans**

Mode	Reported information
counts	The default mode, this option reports plans that: <ul style="list-style-type: none"> <li>• Are the same</li> <li>• Have the same association key, but different groups</li> <li>• Exist in one group, but not the other</li> </ul>
brief	The information provided by counts, plus: <ul style="list-style-type: none"> <li>• The IDs of the abstract plans in each group where the plans are different, but the association key is the same</li> <li>• The IDs of plans that are in one group, but not in the other.</li> </ul>
same	All counts, plus the IDs, queries, and plans for all abstract plans where the queries and plans match.
diff	All counts, plus the IDs, queries, and plans for all abstract plans where the queries and plans are different.
first	All counts, plus the IDs, queries, and plans for all abstract plans that are in the first plan group, but not in the second plan group.
second	All counts, plus the IDs, queries, and plans for all abstract plans that are in the second plan group, but not in the first plan group.
offending	All counts, plus the IDs, queries, and plans for all abstract plans that have different association keys or that do not exist in both groups. This is the combination of the diff, first, and second modes
full	All counts, plus the IDs, queries, and plans for all abstract plans. This is the combination of same and offending modes.

**Examples**                      **Example 1** Generates a default report on two abstract plan groups:

```
sp_cmp_all_qplans dev_plans, prod_plans
```

If the two query plans groups are large, this might take some time.

```
Query plans that are the same
```

```
count
```

```
-----
```

```
49
```

```
Different query plans that have the same association key
```

```

count
-----
                1
Query plans present only in group 'dev_plans':
count
-----
                1
Query plans present only in group 'prod_plans':
count
-----
                0

```

**Example 2** Generates a report using the brief mode:

```
sp_cmp_all_qplans dev_plans, prod_plans, brief
```

Usage

- Use sp\_cmp\_all\_qplans to check for differences in abstract plans in two groups of plans.
- sp\_cmp\_all\_qplans matches pairs of plans where the plans in each group have the same user ID and query text. The plans are classified as follows:
  - Plans that are the same
  - Plans that have the same association key in both groups, but have different abstract plans. The association key is the group ID, user ID and query text.
  - Plans that exist in one group, but do not exist in the other group
- To compare two individual abstract plans, use sp\_cmp\_qplans. To see the names of abstract plan groups, use sp\_help\_qpgroup.
- When a System Administrator or Database Owner runs sp\_cmp\_all\_qplans, it reports on all plans in the two groups. When another user executes sp\_cmp\_all\_qplans, it reports only on plans that have the user's ID.

Permissions

Any user can execute sp\_cmp\_all\_qplans.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_cmp\_qplans, sp\_help\_qpgroup

## sp\_cmp\_qplans

Description                      Compares two abstract plans.

Syntax                              sp\_cmp\_qplans *id1*, *id2*

Parameters                        *id1*, *id2*  
are the IDs of two abstract plans.

Examples                         **Example 1** Compares abstract plan 411252620 to 1383780087:

```
sp_cmp_qplans 411252620, 1383780087
```

The queries are the same.

The query plans are the same.

**Example 2** Compares abstract plan 2091258605 to 647777465:

```
sp_cmp_qplans 2091258605, 647777465
```

The queries are the same.

The query plans are different.

Usage

- sp\_cmp\_qplans compares the queries, abstract plans, and hash keys of two abstract plans, and reports whether the queries are the same, and whether the plans are the same. It prints one of these messages for the query:

- The queries are the same.
- The queries are different.
- The queries are different but have the same hash key.

It prints one of these messages for the abstract plan:

- The query plans are the same.
  - The query plans are different.
- sp\_cmp\_qplans also prints a return status showing the results of the comparison. The status values 1, 2 and 10 are additive. The status values are show in Table 1-15

**Table 1-15: Return status values for `sp_cmp_qplans`**

Return value	Meaning
0	The query text and abstract plans are the same.
+1	The queries and hash keys are different.
+2	The queries are different, but the hash keys are the same.
+10	The abstract plans are different.
100	One or both of the plan IDs does not exist.

- To find the ID of a plan, use `sp_help_qpgroup` or `sp_find_qplan`. Plan IDs are also returned by `create plan` and are included in `showplan` output.

## Permissions

Any user can execute `sp_cmp_qplans` to compare plans that he or she owns. Only a System Administrator or the Database Owner can compare plans owned by another user.

## Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

## See also

**System procedures** `sp_cmp_all_qplans`, `sp_help_qpgroup`

## sp\_commonkey

Description	Defines a common key—columns that are frequently joined—between two tables or views.
Syntax	<pre>sp_commonkey <i>tablename</i>, <i>tabbname</i>, <i>col1a</i>, <i>col1b</i>             [, <i>col2a</i>, <i>col2b</i>, ..., <i>col8a</i>, <i>col8b</i>]</pre>
Parameters	<p><i>tablename</i> is the name of the first table or view to be joined.</p> <p><i>tabbname</i> is the name of the second table or view to be joined.</p> <p><i>col1a</i> is the name of the first column in the table or view <i>tablename</i> that makes up the common key. Specify at least one pair of columns (one column from the first table or view and one from the second table or view).</p> <p><i>col1b</i> is the name of the partner column in the table or view <i>tabbname</i> that is joined with <i>col1a</i> in the table or view <i>tablename</i>.</p>
Examples	<p><b>Example 1</b> Defines a common key on titles.titleid and titleauthor.titleid:</p> <pre>sp_commonkey titles, titleauthor, title_id, title_id</pre> <p><b>Example 2</b> Assumes two tables, projects and departments, each with a column named empid. This statement defines a frequently used join on the two columns:</p> <pre>sp_commonkey projects, departments, empid, empid</pre>
Usage	<ul style="list-style-type: none"><li>• Common keys are created in order to make explicit a logical relationship that is implicit in your database design. The information can be used by an application. sp_commonkey does not enforce referential integrity constraints; use the primary key and foreign key clauses of the create table or alter table command to enforce key relationships.</li><li>• Executing sp_commonkey adds the key to the syskeys system table. To display a report on the common keys that have been defined, use sp_helpkey.</li><li>• You must be the owner of at least one of the two tables or views in order to define a common key between them.</li></ul>



- The number of columns from the first table or view must be the same as the number of columns from the second table or view. Up to eight columns from each table or view can participate in the common key. The datatypes of the common columns must also agree. For columns that take a length specification, the lengths can differ. The null types of the common columns need not agree.
- The installation process runs `sp_commonkey` on appropriate columns of the system tables.
- You cannot use a Java datatype with `sp_commonkey`.

Permissions Only the owner of *tablename* or *tabbname* can execute `sp_commonkey`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** alter table, create table, create trigger

**System procedures** `sp_dropkey`, `sp_foreignkey`, `sp_helpjoins`, `sp_helpkey`, `sp_primarykey`

## sp\_companion

**Description** Performs cluster operations such as configuring Adaptive Server as a secondary companion in a high availability system and moving a companion server from one failover mode to another. sp\_companion is run from the secondary companion.

**Syntax**

```
sp_companion
    [server_name
    {, configure
      [, {with_proxydb | NULL}]
      [, srvlogin]
      [, server_password]
      [, cluster_login]
      [, cluspassword]}
    | drop
    | suspend
    | resume
    | prepare_failback
    | do_advisory}
    {, all
    | help
    | group_attribute_name
    | base_attribute_name}
```

**Parameters**

*server\_name*  
is the name of the Adaptive Server on which you are performing a cluster operation.

*configure*  
configures the server specified by *server\_name* as the primary companion in a failover configuration.

*drop*  
permanently drops a companion from failover configuration. After the command has completed, the servers are in single-server mode.

*suspend*  
temporarily removes the companions from a failover configuration. After the command is completed, the companions are in suspended mode.

*resume*  
reverses the suspend command and resumes normal companion mode between the companions.

*prepare\_failback*  
prepare the secondary companion to relinquish the primary companion's resources so it can failback.

**do\_advisory**

verifies that the secondary companion is compatible for successfully performing the primary companion's functions during failover mode.

- **all** – causes do\_advisory to investigate all the parameters.
- **help** – displays information and syntax about the do\_advisory parameter.
- **group\_attribute\_name** – is the name of the group attribute upon which sp\_companion reports
- **base\_attribute\_name** – is the name of the base attribute upon which you want sp\_companion do\_advisory reports.

**with\_proxydb**

creates proxy databases on the secondary companion for all database other than the system databases – and all subsequent databases that are added – when this parameter is included in the initial configuration of the companion servers. By default, with\_proxydb is disabled.

**srvlogin**

is a user's login to access the companion server. By default, the value of srvlogin is "sa".

**srvpassword**

is the user's password to access the companion server. By default, the value of srvpassword is null.

**cluster\_login**

is the user's login to log into the cluster. By default, the value of cluster\_login is "sa".

**cluspassword**

is the user password you must provide to log into the cluster. By default, the value of cluspassword is null.

**Examples**

**Example 1** Configures the Adaptive Server MONEY1 as the primary companion:

```
sp_companion "MONEY1", configure
```

**Example 2** Configures the Adaptive Server MONEY1 as the primary companion and creates proxy databases on the secondary companion:

```
sp_companion "MONEY1", configure, with_proxydb, "sa", "sapsswd"
```

**Example 3** Drops the Adaptive Server PERSONEL1 from the failover configuration. After the command has completed, both the primary companion and the secondary companion will be in single-server mode:

```
sp_companion "PERSONEL1", "drop"
```

**Example 4** Resumes normal companion mode for the companion server (in this example, MONEY1):

```
sp_companion "MONEY1", "resume"
```

**Example 5** Prepares the primary companion (in this example, PERSONEL1) to change to normal companion mode and resume control of the Adaptive Server that failed over:

```
sp_companion "PERSONEL1", "prepare_failback"
```

**Example 6** Checks to make sure a cluster operation with the PERSONEL1 companion will be successful. Because do\_advisory in this example uses the all parameter, it checks all the do\_advisory attributes of PERSONEL1 to make sure that none of them will prevent a successful cluster operation, and that the secondary companion can successfully perform the primary companion's operations after failover is complete:

```
sp_companion "PERSONEL1", do_advisory, "all"
```

**Example 7** Checks to make sure that none of the attributes for the Component Integration Services (CIS) on the companion server is compatible with the local server:

```
sp_companion "PERSONEL1", do_advisory, "CIS"
```

#### Usage

- sp\_companion performs cluster operations such as configuring Adaptive Server as a secondary companion in a high availability system. sp\_companion also moves companion servers from one failover mode to another (for example, from failover mode back to normal companion mode). sp\_companion is run from the secondary companion.
- sp\_companion is installed with the *installhasvss* (*insthasv* on Windows NT), not the *installmaster* script. *installhasvss* is located in the *scripts* subdirectory in *\$SYBASE\_ASE*.
- sp\_companion automatically disables Sybase's mirroring. Sybase recommends that you use a third-party mirroring software to protect your data from disk failures.

For complete information, see *Using Sybase Failover in A High Availability System*. Before running the do\_advisory command, make sure to read the configuration chapter of this book as well as the do\_advisory chapter.

#### Permissions

Only users with the ha\_role can issue sp\_companion.

#### Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

## sp\_compatmode

Description	Verifies whether full compatibility mode can be used.
Syntax	sp_compatmode
Examples	<pre>1&gt; sp_compatmode ----- Compatibility mode is enabled. WARNING: Compatibility mode may not be used when statement cache and literalautoparam are enabled. WARNING: The configuration option 'histogram tuning factor' is configured with value '20', which is not the default value in ASE 12.5. This may lead to different accuracy of statistics and different query plans.  (return status = 0) 1&gt;</pre>
Usage	This query reports whether compatibility mode is enabled or not. You see a warning if there are conflicts with the use of enable compatibility mode.
Permissions	Available to any user.
See also	For more information see the <i>Migration Technology Guide</i> .

## sp\_configure

Description	Displays configuration parameters by group, their current values, their non-default value settings, the value to which they have most recently been set, and the amount of memory used by this setting. Displays only the parameters whose display level is the same as or below that of the user.
Syntax	<pre>sp_configure [configname [, configvalue]   group_name                non_unique_parameter_fragment] 'drop instance'              [, instance_name] [display_nondefault_settings]  sp_configure "configuration file", 0, {"write"   "read"   "verify"   "restore"} "file_name"</pre>
Parameters	<p><i>configname</i> displays the current value, default value, most recently changed value, and amount of memory used by the setting for all parameters matching <i>parameter</i>.</p> <p><i>configvalue</i> resets <i>configname</i> to <i>configvalue</i> and displays the current value, default value, configured value, and amount of memory used by <i>configname</i>.</p> <p><i>sp_configure configname</i>, 0, "default" resets <i>configname</i> to its default value and displays current value, default value, configured value, and amount of memory used by <i>configname</i>.</p> <p><i>group_name</i> displays all configuration parameters in <i>group_name</i>, their current values, their default values, the value (if applicable) to which they have most recently been set, and the amount of memory used by this setting.</p> <p><i>non_unique_parameter_fragment</i> displays all parameter names that match <i>non_unique_parameter_fragment</i>, their current values, default values, configured values, and the amount of memory used.</p> <p>drop instance allows you to drop an instance-specific configuration setting</p> <p><i>instance_name</i> in cluster environments – indicates the instance for which you are setting the instance-specific options.</p> <p>display_nondefault_settings displays configuration options for which the configuration or run value is different from the default value.</p>

**write**

creates *file\_name* from the current configuration. If *file\_name* already exists, a message is written to the error log and the existing file is renamed using the convention *file\_name.001*, *file\_name.002*, and so on. If you have changed a static parameter but have not restarted your server, “write” gives you the currently running value for that parameter.

**read**

performs validation checking on values contained in *file\_name* and reads those values that pass validation into the server. If any parameters are missing from *file\_name*, the current running values for those parameters are used.

**verify**

performs validation checking on the values in *file\_name*.

**restore**

creates *file\_name* with the values in sysconfigures. This is useful if all copies of the configuration file have been lost and you need to generate a new copy.

**file\_name**

is the name of the file you want to use sp\_configure on.

**Examples**

**Example 1** Displays all configuration parameters by group, their current values, their default values, the value (if applicable) to which they have most recently been set, and the amount of memory used by this setting:

```
sp_configure
```

**Example 2** Displays all configuration parameters that include the word “identity”:

```
sp_configure "identity"
```

Configuration option is not unique.

Parameter Name	Default	Memory Used	Config Value	Run Value	Unit	Type
identity burning set	1	0	1	1	id	static
identity grab size	0	0	0	0	id	dyna
size of auto identit	10	0	10	10	bytes	dyna
. . . .						

**Example 3** Sets the system recovery interval in minutes to 3 minutes:

```
sp_configure "recovery interval in minutes", 3
```

Parameter Name	Default	Memory Used	Config Value	Run Value	Unit	Type
recovery interval	5	0	3	3	min	dyn



Configuration option changed. The SQL Server need not be rebooted since the option is dynamic.

**Example 4** Resets the value for number of devices to the Adaptive Server default:

```
sp_configure "number of device", 0, "default"
```

**Example 5** Configures four databases to be recovered concurrently, enter:

```
sp_configure "max concurrently recovered db", 4
```

**Example 6** Starts four checkpoint tasks, enter:

```
sp_configure "number of checkpoint tasks", 4
```

**Example 7** Captures Query Processing metrics (qp metrics) at the server level:

```
sp_configure "enable metrics capture", 1
```

**Example 8** Performs validation checking on the values in the file *srv.config* and reads the parameters that pass validation into the server. Current run values are substituted for values that do not pass validation checking:

```
sp_configure "configuration file", 0, "read",
"srv.config"
```

**Example 9** Runs validation checking on the values in the file *restore.config*:

```
sp_configure "configuration file", 0, "restore",
"generic.config"
```

**Example 10** Creates the file *my\_server.config* and writes the current configuration values the server is using to that file:

```
sp_configure "configuration file", 0, "write",
"my_server.config"
```

**Example 11** Performs a validation check on the values in *\$\$SYBASE/backup\_config.cfg*:

```
sp_configure "configuration file", 0, "verify",
"$$SYBASE/backup_config.cfg"
```

## Usage

- Any user can execute `sp_configure` to display information about parameters and their current values, but not to modify parameters. System Administrators can execute `sp_configure` to change the values of most configuration parameters. Only System Security Officers can execute certain parameters. These are listed under “Permissions” in this section.

- sp\_configure allows you to specify the value for configuration parameters in unit specifiers. The unit specifiers are p or P for pages, m or M for megabytes, g or G for gigabytes, and t or T for terabytes. If you do not specify a unit, and you are configuring a parameter that controls memory, Adaptive Server uses the logical page size for the basic unit.
- When you execute sp\_configure to modify a dynamic parameter:
  - The configuration and run values are updated.
  - The configuration file is updated.
  - The change takes effect immediately.
- When you execute sp\_configure to modify a static parameter:
  - The configuration value is updated.
  - The configuration file is updated.
  - The change takes effect only when you restart Adaptive Server.
- When issued with no parameters, sp\_configure displays a report of all configuration parameters by group, their current values, their default values, the value (if applicable) to which they have most recently been set, and the amount of memory used by this setting:
  - The default column in the report displays the value Adaptive Server is shipped with. If you do not explicitly reconfigure a parameter, it retains its default value.
  - The memory used column displays the amount of memory used by the parameter at its current value in kilobytes. Some related parameters draw from the same memory pool. For instance, the memory used for stack size and stack guard size is already accounted for in the memory used for number of user connections. If you added the memory used by each of these parameters separately, it would total more than the amount actually used. In the memory used column, parameters that “share” memory with other parameters are marked with a hash mark (#).
  - The config\_value column displays the most recent value to which the configuration parameter has been set with sp\_configure.

- The `run_value` column displays the value being used by Adaptive Server. It changes after you modify a parameter's value with `sp_configure` and, for static parameters, after you restart Adaptive Server. This is the value stored in `syscurconfigs.value`.

---

**Note** If the server uses a case-insensitive sort order, `sp_configure` with no parameters returns a list of all configuration parameters and groups in alphabetical order with no grouping displayed.

---

- Each configuration parameter has an associated display level. There are three display levels:
  - The “basic” level – displays only the most basic parameters. It is appropriate for very general server tuning.
  - The “intermediate” level – displays parameters that are somewhat more complex, as well as showing you all the “basic” parameters. This level is appropriate for a moderately complex level of server tuning.
  - The “comprehensive” level – *default display level*. Displays all parameters, including the most complex ones. This level is appropriate for users who do highly detailed server tuning.

Setting one of the other display levels lets you work with a subset of the configuration parameter, shortening the amount of information displayed by `sp_configure`.

The syntax for showing your current display level is:

```
sp_displaylevel
```

- For information on the individual configuration parameters, see the *System Administration Guide*.

#### Setting configuration parameters for clusters

- If no configuration option or instance name is specified, the information displayed depends on the `system_view` setting.
- If no configuration option is specified, and the instance name is specified, Adaptive Server displays all instance-specific configuration settings for the specified instance.

- If the configuration option is specified, but the configuration value and instance name are not specified, Adaptive Server displays the current settings for the specified option for all instances under the “cluster” view. If the instance name is specified, Adaptive Server displays configuration information for the specified instance.
- If the configuration option and value are specified, but no instance is specified, Adaptive Server configures the cluster-wide setting for the option. If, however, the instance name is specified, Adaptive Server sets the configuration value for the instance only. The syntax is:  

```
sp_configure configuration_name, config_value, NULL,  
instance_name
```
- You cannot set configuration options from inside a local temporary database.
- If an instance already has instance-specific setting for a configuration parameter set, you can reconfigure this parameter for a cluster-wide setting.
- A user can reconfigure only those instances to which they are connected.

max concurrently recovered db

This parameter determines the degree of parallelism during database recovery:

- When Adaptive Server is not in recovery, this configuration parameter takes effect statically. However, when Adaptive Server is in recovery, a System Administrator can force serial recovery dynamically.
- The effectiveness of max concurrently recovered db is dependent on the database layout and the performance of underlying I/O subsystem.

number of checkpoint tasks

This parameter configures parallel checkpoints:

- Parallel checkpoints depend on the layout of the databases and performance of underlying I/O subsystems. Tune this parameter depending on the number of active databases and the ability of the I/O subsystem to handle writes.
- This configuration parameter is dynamic. When the value for this parameter is reduced, checkpoint tasks drain out, and when the value is increased, additional tasks are created.

Permissions

Any user can execute `sp_configure` to display information about parameters and their current values.

Only System Administrators can execute `sp_configure` to modify values for:

- enable logins during recovery
- enable semantic partitioning
- max concurrently recovered db
- number of checkpoint tasks

Only System Administrators and System Security Officers can execute `sp_configure` to modify configuration parameters.

Only System Security Officers can execute `sp_configure` to modify values for:

allow procedure grouping	enable encrypted columns
allow select on syscomments.text	remote access
allow updates	restricted decrypt permission
auditing	suspend auditing when full
current audit table	systemwide password expiration

System Administrators can modify all other parameters.

Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>
73	Automatically audited event nto controlled by an option.	Turning the auditing parameter on with <code>sp_configure</code>	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – NULL</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

Event	Audit option	Command or access audited	Information in extrainfo
74	Automatically audited event nto controlled by an option.	Turning the auditing parameter off with sp_configure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – NULL</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>
82	security	sp_configure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – Name of the configuration parameter</li> <li>• <i>Previous value</i> – Old parameter value if command is setting a new value</li> <li>• <i>Current value</i> – New parameter value if command is setting a new value</li> <li>• <i>Other information</i> – Number of configuration parameter, if a parameter is being set; name of configuration file, if a configuration file is being used to set parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

For more information on max concurrently recovered db and number of checkpoint tasks, see Chapter 27, “Backing up and Restoring User Databases,” in the *System Administration Guide*.

**Commands** set

**System procedures** sp\_dboption, sp\_displaylevel, sp\_helpconfig, sp\_monitorconfig, set

## sp\_copy\_all\_qplans

Description	Copies all plans for one abstract plan group to another group.
Syntax	<code>sp_copy_all_qplans src_group, dest_group</code>
Parameters	<p><i>src_group</i> is the name of the source abstract plan group.</p> <p><i>dest_group</i> is the name of the abstract plan group to which the plans are to be copied.</p>
Examples	<p>Copies all of the abstract plans in the dev_plans group to the ap_stdin group:</p> <pre>sp_copy_all_qplans dev_plans, ap_stdin</pre>
Usage	<ul style="list-style-type: none"> <li>• The destination group must exist before you can copy plans into it. It may contain plans.</li> <li>• <code>sp_copy_all_qplans</code> calls <code>sp_copy_qplan</code> for each plan in the source group. Each plan is copied as a separate transaction, so any problem that keeps <code>sp_copy_all_qplans</code> from completing does not affect the plans that have already been copied.</li> <li>• <code>sp_copy_qplan</code> prints messages when it cannot copy a particular abstract plan. You also see these messages when running <code>sp_copy_all_qplans</code>.</li> <li>• If the query text for a plan in the destination group exactly matches the query text in the source group and the user ID is the same, the plan is not copied, and a message giving the plan ID is sent to the user, but the copying process continues with the next plan in the source group.</li> <li>• Copying a very large number of abstract plans can take considerable time, and also requires space on the system segment in the database and space to log the changes to the database. Use <code>sp_spaceused</code> to check the size of <code>sysqueryplans</code>, and <code>sp_helpsegment</code> for the system and logsegment to check the space available.</li> </ul>
Permissions	Any user can execute <code>sp_copy_all_qplans</code> to copy an abstract plan that he or she owns. Only the System Administrator or Database Owner can copy plans that are owned by other users.
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also

**System procedures** sp\_copy\_qplan, sp\_help\_qpgroup



## sp\_copy\_qplan

Description	Copies one abstract plan to an abstract plan group.
Syntax	<code>sp_copy_qplan src_id, dest_group</code>
Parameters	<p><code>src_id</code> is the ID of the abstract plan to copy.</p> <p><code>dest_group</code> is the name of the destination abstract plan group.</p>
Examples	<code>sp_copy_qplan 2140534659, ap_stdin</code>
Usage	<ul style="list-style-type: none"> <li>• The destination group must exist before you can copy an abstract plan into it. You do not need to specify a source group, since plans are uniquely identified by the plan ID.</li> <li>• A new plan ID is generated when the plan is copied. The plan retains the ID of the user who created it, even if the System Administrator or Database Owner copies the plan. To assign a different user ID, a System Administrator or Database Owner can use <code>sp_export_qpgroup</code> and <code>sp_import_qpgroup</code>.</li> <li>• If the query text for a plan in the destination group exactly matches the query text in the source group and the user ID, the plan is not copied, and a message giving the plan IDs is sent to the user.</li> <li>• To copy all of the plans in an abstract plan group, use <code>sp_copy_all_qplans</code>.</li> </ul>
Permissions	Any user can execute <code>sp_copy_qplan</code> to copy a plan that he or she owns. Only the System Administrator or Database Owner can copy plans that are owned by other users.
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_copy_all_qplans`, `sp_help_qpgroup`, `sp_help_qplan`, `sp_import_qpgroup`

## sp\_countmetadata

Description	Displays the number of indexes, objects, or databases in Adaptive Server.
Syntax	<code>sp_countmetadata "configname" [, dbname]</code>
Parameters	<p><i>configname</i> is either “number of open databases”, “number of open objects”, or “number of open indexes”, or “number of open partitions”.</p> <p><i>dbname</i> is the name of the database on which to run <code>sp_countmetadata</code>. If no database name is given, <code>sp_countmetadata</code> provides a total count for all databases.</p>
Examples	<p><b>Example 1</b> Reports on the number of user objects in Adaptive Server. Use this value to set the number of objects allowed in the database, plus space for additional objects and temporary tables:</p> <pre>sp_configure "number of open objects", 310 sp_countmetadata "open objects"  There are 283 user objects in all database(s), requiring 117.180 Kbytes of memory. The 'open objects' configuration parameter is currently set to a run value of 500.</pre> <p><b>Example 2</b> Reports on the number of indexes in Adaptive Server:</p> <pre>sp_countmetadata "open indexes", pubs2  There are 21 user indexes in pubs2 database(s), requiring 8.613 kbytes of memory. The 'open indexes' configuration parameter is currently set to 600.</pre>
Usage	<ul style="list-style-type: none"><li>• <code>sp_countmetadata</code> displays the number of indexes, objects, databases, or partitions in Adaptive Server, including the number of system databases such as <code>model</code> and <code>tempdb</code>.</li><li>• Avoid running <code>sp_countmetadata</code> during Adaptive Server peak times. It can cause contention on the <code>sysindexes</code>, <code>sysobjects</code>, <code>sysdatabases</code>, and <code>syspartitions</code> system tables.</li><li>• You can run <code>sp_countmetadata</code> on a specified database if you want information on a particular database. However, when configuring caches for indexes, objects, databases, or partitions, run <code>sp_countmetadata</code> without the <i>database_name</i> option.</li></ul>

- The information on memory returned by `sp_countmetadata` can vary by platform. For example, a database on Adaptive Server for Windows NT could have a different `sp_countmetadata` result than the same database on Sun Solaris. Information on the number of user indexes, objects, databases, or partitions should be consistent, however.
- `sp_countmetadata` does not include temporary tables in its calculation. Add 5 percent to the open objects value and 10 percent to the open indexes, open partitions value to accommodate temporary tables.
- If you specify a nonunique fragment of “open indexes”, “open objects”, “open databases”, or “open partitions” for `configname`, `sp_countmetadata` returns a list of matching configuration parameter names with their configured values and current values. For example:

```
sp_countmetadata "open"
```

Configuration option is not unique.

option_name	config_value	run_value
-----	-----	-----
curread change w/ open cursors	1	1
number of open databases	12	12
number of open indexes	500	500
number of open objects	500	500
open index hash spinlock ratio	100	100
open index spinlock ratio	100	100
open object spinlock ratio	100	100

**Permissions** Only a System Administrator or the Database Owner can execute `sp_countmetadata`.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

**See also** **System procedures** `sp_configure`, `sp_helpconfig`, `sp_monitorconfig`

## sp\_cursorinfo

Description	Reports information about a specific cursor or all execute cursors that are active for your session.
Syntax	sp_cursorinfo [{ <i>cursor_level</i>   null}] [, <i>cursor_name</i> ]
Parameters	<i>cursor_level</i>   null is the level at which Adaptive Server returns information for the cursors. You can specify the following for <i>cursor_level</i> :

Level	Types of cursors
N	Any cursors declared inside stored procedures at a specific procedure nesting level. You can specify any positive number for its level.
0	Any cursors declared outside stored procedures.
-1	Any cursors from either of the above. You can substitute any negative number for this level.

If you want information about cursors with a specific *cursor\_name*, regardless of cursor level, specify null for this parameter.

### *cursor\_name*

is the specific name for the cursor. Adaptive Server reports information about all active cursors that use this name at the *cursor\_level* you specify. If you omit this parameter, Adaptive Server reports information about all the cursors at that level.

**Examples**      **Example 1** Displays the information about the cursor named c at level 0:

```
1> declare c cursor
2> for select au_id, au_lname, au_fname from authors
3> go
1> sp_cursorinfo
2> go
```

```
Cursor name 'c' is declared at nesting level '0'.
The cursor is declared as NON-SCROLLABLE cursor.
The cursor id is 917505.
The cursor has been successfully opened 0 times.
The cursor will remain open when a transaction is
committed or rolled back.
The number of rows returned for each FETCH is 1.
The cursor is updatable.
This cursor is using 5389 bytes of memory.
```

```
(return status = 0)
```

**Example 2** Displays information on the cursor's scrollability and sensitivity, in this case a semi-sensitive scrollable cursor `css`:

```
sp_cursorinfo 0, cursor_css
```

```
-----
```

```
Cursor name 'css' is declared at nesting level '0'.
The cursor is declared as SEMI_SENSITIVE SCROLLABLE cursor.
The cursor id is 786434.
The cursor has been successfully opened 1 times.
The cursor was compiled at isolation level 1.
The cursor is currently scanning at a nonzero isolation level.
The cursor is positioned on a row.
There have been 1 rows read, 0 rows updated and 0 rows deleted through this
cursor.
The cursor will remain open when a transaction is committed or rolled back.
The number of rows returned for each FETCH is 1.
The cursor is read only.
This cursor is using 19892 bytes of memory.
There are 2 columns returned by this cursor.
The result columns are:
Name = 'c1', Table = 't1', Type = INT, Length = 4 (not updatable)
Name = 'c2', Table = 't1', Type = INT, Length = 4 (not updatable)
```

#### Usage

- If you do not specify either *cursor\_level* or *cursor\_name*, Adaptive Server displays information about all active cursors. Active cursors are those declared by you and allocated by Adaptive Server.
- Adaptive Server reports the following information about each cursor:
  - The cursor name, its nesting level, its cursor ID, and the procedure name (if it is declared in a stored procedure).
  - The number of times the cursor has been opened.
  - The isolation level (0, 1, or 3) in which it was compiled and in which it is currently scanning (if open).
  - Whether the cursor is open or closed. If the cursor is open, it indicates the current cursor position and the number of rows fetched.
  - Whether the open cursor will be closed if the cursor's current position is deleted.
  - Whether the cursor will remain open or be closed if the cursor's current transaction is committed or rolled back.
  - The number of rows returned for each fetch of that cursor.

- Whether the cursor is updatable or read-only.
- The number of columns returned by the cursor. For each column, it displays the column name, the table name or expression result, and whether it is updatable.

The output from sp\_cursorinfo varies, depending on the status of the cursor. In addition to the information listed, sp\_cursorinfo displays the showplan output for the cursor. For more information about showplan, see the *Performance and Tuning Guide*.

Permissions Any user can execute sp\_cursorinfo.

Auditing Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** declare cursor, set

## sp\_dbextend

### Description

Allows you to:

- Install automatic database expansion procedures on database/segment pairs and devices.
- Define site-specific policies for individual segments and devices.
- Simulate execution of the database expansion machinery, to study the operation before engaging large volume loads.

These policies are stored in the sysattributes table in master database.

All arguments are string arguments:

### Syntax

```
sp_dbextend 'help'[, command]
sp_dbextend [ ['set', ['threshold', dbname, segmentname, freespace |
                'database', dbname, segmentname { [ [ , growby ] [ , maxsize ] ] } |
                'device', devicename { [ [ , growby ] [ , maxsize ] ] } ] |
                'clear', 'threshold', dbname, segmentname
sp_dbextend 'clear', 'database' [ , dbname [ , segmentname ] ]
sp_dbextend 'clear', 'device' [ , devicename ]
sp_dbextend 'modify', 'database', dbname, segmentname,
            { 'growby' | 'maxsize' }, newvalue
sp_dbextend 'modify', 'device', devicename, { 'growby' | 'maxsize' },
            newvalue
sp_dbextend { 'list' | 'listfull' } [ , 'database' [ , dbname [ , segmentname
            [ , order_by_clause ] ] ] ]
sp_dbextend { 'list' | 'listfull' } [ , 'device' [ , devicename [ , order_by_clause ] ] ]
sp_dbextend { 'list' | 'listfull' }, [ 'threshold' [ , @dbname
            [ , @segmentname ] ] ]
sp_dbextend 'check', 'database' [ , dbname [ , segmentname ] ]
sp_dbextend { 'simulate' | 'execute' }, dbname, segmentname [ , iterations ]
sp_dbextend 'trace', { 'on' | 'off' }
sp_dbextend 'reload [defaults]'
sp_dbextend { 'enable' | 'disable' }, 'database' [ , dbname [ , segmentname ] ]
sp_dbextend 'who' [ , 'spid' | 'block' | 'all' ]
```

Parameters

set

sets the threshold at which a database, segment, or device should fire. The arguments are:

- *threshold* – specifies the free space level at which to install the threshold on a specified database and segment.

You should always specify *freespace* in size unit specifiers, such as megabytes. If you specify no size units, the value of *freespace* is treated as the number of kilobytes in the segment.

- *database* – specifies the name of the database/segment pair, the size by which to alter the database, and the maximum size of the database, at which the expansion process stops.

*growby* – is the rate, in unit specifiers or percentage values, at which the database grows at each expansion attempt. *maxsize* is the maximum size of the segment, after which no further expansion occurs. Both are optional parameters.

- *device* – defines the growth rate and maximum size of a device, in unit specifiers or percentage values, at which the device can grow. *maxsize* in devices is subject to OS disk limitations.

clear

clears any previously set rules of expansion for a specified database and segment or for a specified device.

modify

modifies previously set site-specific policies, such as *growby* and *maxsize*, for a database and segment.

Use *newvalue* to specify the new value you set for automatic expansion.

list

lists briefly existing rules for a specified database, segment, device, or thresholds on specified segments, and presents the data from `master.dbo.sysattributes` in a readable format. Allows you to view rules on a per-database or per-device basis.

Presents the current rules in effect.

Use *order\_by\_clause* to generate listings in a different order from the default ordering of name, type.

Use *threshold* to display all the thresholds that are currently installed on the specified database (using the *@dbname*) and segment (using *@segment* name).



**listfull**

lists fully the site-specific policy rules, and includes a comment column in the `sysattributes` table that displays a datetime stamp for when the rule was set, and when it was last modified.

**check**

examines current policies and verifies that they are consistent with the current space layout in each segment. If any policy settings appear redundant, ineffective, or incorrect, a warning message appears.

**simulate**

simulates executing the database or device expansion schemes executed at runtime, according to the set of current policies implemented by the `set` command.

*iterations* specifies the number of times you simulate the expansion.

**execute**

performs the actual database/segment, or device, expansion, using the current set of policies.

**reload defaults**

reinitializes `sysattributes` with the system-supplied defaults for *growby* and *maxsize* in all databases, segments, and devices, and reverts the databases or devices to the original default behavior.

**help**

provides help information for all command parameters, such as *set* or *list*, or help information for any single command.

**trace**

traces the threshold procedure execution logic in all expansion processes.

**enable, disable**

enables or disables the automatic expansion procedures on a specified database segment or device.

**who**

shows any active expansion processes running currently. '<spid>' restricts the output for a particular spid. Use:

- *block* to show tasks that currently cause blocking of the expansion process.
- *all* to show all currently active tasks.

*freespace*

specifies the free space value at which the threshold procedure is installed on the specified segment. Always use size unit specifiers, such as megabytes, to specify *freespace*.

*dbname*

is the name of the database in which the threshold is being installed.

*segmentname*

is the segment contained in database *dbname*.

*devicename*

is the logical name of the affected device.

*newvalue*

specifies the new value you set for automatic expansion when you modify a policy for a database/segment pair or device.

*order\_by\_clause*

generates listings in a different order from the default ordering in the *list* command. The default order is name, type.

*iterations*

specifies the number of times an expansion is simulated or executed.

*growby*

specifies the rate, in unit specifiers or percentage values, at which a specified database segment or device grows each time the threshold procedures are attempted.

*maxsize*

is the maximum size of a segment/database pair or device, the size at which automatic expansion must stop.

Examples

**Example 1** *set thresholds* – installs the space expansion threshold on a log segment in the database pubs2 at 100MB:

```
sp_dbextend 'set', 'thresh', pubs2, logsegment, '100m'
```

**Example 2** *set database* – installs a policy for the logsegment segment, at a growth rate of 100MB per expansion attempt:

```
sp_dbextend 'set', 'database', pubs2, logsegment, '100m'
```

**Example 3** *set device* – expands this device until either the OS disk space limitation or the device size of 32GB is reached:

```
sp_dbextend 'set', 'device', pubs2-datadev1, '100m'
```

**Example 4** *clear* – shows how to clear all space-expansion thresholds previously installed in pubs2, logsegment:

```
sp_dbextend 'clear', 'thresh', pubs2, logsegment
```

You can also the space-expansion threshold for segment dataseg1 in pubs2, installed at a free space of 200MB:

```
sp_dbextend 'clear', 'thresh', pubs2, dataseg1, '200m'
```

**Example 5** *modify* – defines the rate of growth as 5% of current value, in each expansion attempt:

```
sp_dbextend 'modify', 'da', pubs2, logsegment, 'growby', '5%'
```

A command can fail when *maxsize* is not previously defined:

```
sp_dbextend 'modify', 'device', pubs2_log_dev, 'maxsize', '2.3g'
```

**Example 6** *list* – lists briefly the rules for all databases and devices:

```
sp_dbextend 'list'
```

This lists rules for all databases with names similar to 'pubs%':

```
sp_dbextend 'list', 'database', 'pubs%'
```

**Example 7** *listfull* – lists the rules for all databases and devices, including a comment column showing a datetime stamp:

```
sp_dbextend 'listfull'
```

**Example 8** *list threshold* – when issued from the pubs2 database, this lists the thresholds setup on various segments in the pubs2 database:

```
sp_dbextend 'list', 'threshold'
```

To examine the thresholds on a particular segment, use as:

```
sp_dbextend 'list', 'threshold', pubs2, 'logsegment'
```

**Example 9** *simulate* – simulates an expansion twice, without tripping the thresholds:

```
sp_dbextend 'simulate', pubs2, logsegment, '2'
```

**Example 10** *execute* – executes an automatic expansion procedure:

```
sp_dbextend 'execute', pubs2, logsegment
```

**Example 11** *help* – obtains help for a specific command:

```
sp_dbextend help, 'set'
```

Usage

- You can only set one automatic expansion threshold on any given database/segment pair. If you try to install another instance of the threshold procedure, even at a different free space value, an error is raised.
- You cannot set system-supplied defaults, only modify them. After you modify system defaults you can reset them by re-running the *installdbextend* script, or by using the reload defaults command.
- To disallow any automatic growth in a particular segment, either specify 0 for *growby* or *maxsize*, or do not install the threshold procedure at all. If you specify NULL for this parameter, defaults to the system-specified default *growby* rate is used.
- By default, if the size of the device is greater than 40MB, the size of the database is increased by 10 percent. If your database is smaller than 40MB, the size of the database is increased by 4MB. However, you can specify database resizing limits that match the needs of your site
- *maxsize* is the maximum size of the segment at which the automatic expansion process stops, not the maximum size of the database.
- There is no system-specified maximum size for the default database. If no *maxsize* value is specified, the size of the database is limited only by the physical limitations of the database device.
- To turn off the automatic growth feature on a particular device, specify 0 for *growby* or *maxsize*. If you do not specify a value for *growby*, the default expansion rate is used.
- You can set *maxsize* to a value larger than the total amount of disk space available on the device, but actual expansion is limited to the available disk space at the time expansion is attempted.
- When you use this stored procedure to clear a threshold, *dbname* and *segmentname* are required arguments.
- When you use this stored procedure to clear a database, and provide no *dbname* and *segmentname*, all policy rules—that is, all the relevant rows in *master.dbo.sysattributes*—for the current database and all segments in it are deleted. This is a good way to reverse all settings to default and restart.
- When you use this stored procedure to clear a device, if you do not provide a value for *devicename*, no policy rules are cleared. You can clear out the policy rules for a single device by providing *devicename* or using “%” to clear policies for all devices.

- You can specify *dbname*, *devicename*, and *segmentname* using patterns, so that names whose patterns match the specified pattern are considered for the clear, enable, disable, and list operations.
- You must have set a value or property before you can modify it. *modify* fails if no value was previously set. *growby* and *maxsize* are modified to the new value specified by *newvalue*.
- The new value specified in *newvalue* remains in effect throughout subsequent attempts to expand either the database or device. Even if *newvalue* is less than the current size of the database, segment, or device, the object does not shrink. *newvalue* specifies only future expansion, and does not affect current sizes.
- When you use *list* for a database and provide no *dbname* or *segmentname*, all the policy rules (that is, rows in *master.dbo.sysattributes*) for all segments in the current database are listed.
- Provide *dbname* and *segmentname* to obtain policy rules for individual databases and for the segments inside them.
- When you use *list* for a device name and provide no *devicename*, default policy rules for all devices are listed. You can filter this to list the policy rules for a single device by providing *devicename* or use pattern specifiers for the *devicename*.
- You can simulate the expansion of only one database/segment pair at a time. Both *dbname* and *segmentname* are required arguments. You cannot use wildcard patterns in *dbname* or *segmentname* for *execute* or *simulate* commands.
- The maximum size of a device is 32Gb.
- Use *reload* to re-initialize your databases and devices after using *modify* and *simulate*. *reload* deletes any existing rows in *master.dbo.sysattributes* that describe system default behavior, and loads new rows.
- *reload* does not delete user-specified policies.
- *trace* turns the trace facility on or off throughout the server. If *trace* is on, messages appear in the server error log when a threshold fires. Use *trace* only for troubleshooting.

#### Permissions

*sa\_role* permission is needed to run the *installdbextend* script, and *execute* permission is granted to public only on *sp\_dbextend*.

Any user can execute the *list* parameter. All other commands must be granted Database Owner or *sa\_role* permissions on the specified database.

Commands such as clear, that allow pattern specifiers for the *dbname* argument, require sa\_role privilege.

The following command parameters require sa\_role privilege: simulate, execute, check, reload defaults, trace.

If the automatic expansion procedures are installed on a segment by a Database Owner without sa\_role privilege, the devices do not expand, because the user cannot run the disk resize command. Sybase recommends that a user with sa\_role privilege run the set threshold command when installing the threshold procedure.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Stored procedures** sp\_droptreshold, sp\_modifythreshold

**Commands** alter database, create database, disk init, disk resize

## sp\_dboption

Description	Displays or changes database options, and enables the asynchronous log service feature.
Syntax	<code>sp_dboption [dbname, optname, optvalue [, dockpt]]</code>
Parameters	<p><i>dbname</i> is the name of the database in which the option is to be set. You must be using master to execute <code>sp_dboption</code> with parameters (that is, to change a database option). You cannot, however, change option settings in the master database.</p> <p><i>optname</i> is the name of the option to be set. Adaptive Server understands any unique string that is part of the option name. Use quotes around the option name if it is a keyword or includes embedded blanks or punctuation.</p> <p>You can turn on more than one database option at a time. You cannot change database options inside a user-defined transaction.</p> <p><i>optvalue</i> is the value of the setting. <code>true</code> turns the option on, and <code>false</code> turns it off.</p> <p><i>dockpt</i> specifies whether <code>sp_dboption</code> performs the checkpoint command on <i>dbname</i>. The default value is 1, which automatically performs checkpoint. You can run checkpoint on the <i>dbname</i> by performing the checkpoint command manually.</p>

**Examples** **Example 1** Displays a list of the database options:

```
sp_dboption
Settable database options
database_options
-----
abort tran on log full
allow nulls by default
async log service
auto identity
dbo use only
ddl in tran
delayed commit
disable alias access
identity in nonunique index
no chkpt on recovery
no free space acctg
read only
```

```
select into/bulkcopy/pllsort
single user
trunc log on chkpt
trunc. log on chkpt.
unique auto_identity index
```

**Example 2** Makes the database pubs2 read only. :

```
1> use pubs2
2> go
1> master..sp_dboption pubs2, "read", true
2> go
```

Database option 'read only' turned ON for database 'pubs2'.  
Running CHECKPOINT on database 'pubs2' for option 'read only' to take effect.  
(return status = 0)

The read string uniquely identifies the read only option from among all available database options. Note the use of quotes around the keyword read

**Example 3** Makes the database pubs2 writable again, but by specifying 0 for the *dochkpt* option, you see the message, “Run the CHECKPOINT command in the database that was changed”:

```
1> use pubs2
2> go
1> master..sp_dboption pubs2, "read", false, 0
2> go
```

Database option 'read only' turned OFF for database 'pubs2'.  
Run the CHECKPOINT command in the database that was changed.  
(return status = 0)

To manually perform a checkpoint on pubs2, enter:

```
1> checkpoint
2> go
```

**Example 4** Allows select into, bcp and parallel sort operations on tables in the pubs2 database. The select into string uniquely identifies the select into/bulkcopy option from among all available database options:

```
use pubs2
go
master..sp_dboption pubs2, "select into", true
go
```

---

**Note** Quotes are required around the option because of the embedded space.

---



**Example 5** Automatically defines 10-digit IDENTITY columns in new tables created in mydb. The IDENTITY column, SYB\_IDENTITY\_COL, is defined in each new table that is created without specifying either a primary key, a unique constraint, or an IDENTITY column:

```
use mydb
go
master..sp_dboption mydb, "auto identity", true
go
```

**Example 6** Automatically includes an IDENTITY column in the mydb tables' index keys, provided these tables already have an IDENTITY column. All indexes created on the tables will be internally unique:

```
use master
go
sp_dboption mydb, "identity in nonunique index", true
go
use mydb
go
```

**Example 7** Automatically includes an IDENTITY column with a unique, nonclustered index for new tables in the pubs2 database:

```
use master
go
sp_dboption pubs2, "unique auto_identity index", true
go
use pubs2
go
```

**Example 8** Sets asynchronous log service (ALS) in a specified database, enabling the user log cache and the log writer threads.

```
sp_dboption "mydb", "async log service", true
use mydb
```

**Example 9** Disables ALS in a specified database.

```
sp_dboption "mydb", "async log service", false
use mydb
```

#### Usage

- The master database option settings cannot be changed.
- If you enter an ambiguous value for *optname*, an error message appears. For example, two of the database options are dbo use only and read only. Using “only” for the *optname* parameter generates a message because it matches both names. The complete names that match the string supplied are printed out so that you can see how to make the *optname* more specific.

- To display a list of database options, execute `sp_dboption` with no parameters from inside the master database.
- For a report on which database options are set in a particular database, execute `sp_helpdb`.
- The `no chkpt on recovery` option disables the `trunc log on chkpt` option when both are set with `sp_dboption` for the same database. This conflict is especially possible in the `tempdb` database which has `trunc log on chkpt` set to on as the default.
- The Database Owner or System Administrator can set or unset particular database options for all new databases by executing `sp_dboption on model`.
- After `sp_dboption` has been executed, the change does not take effect until the checkpoint command is issued in the database for which the option was changed.

#### Asynchronous log service (ALS) options

Enabling `async log service (ALS)` allows for greater scalability in Adaptive Server, providing higher throughput in logging subsystems for high-end symmetric multiprocessor systems.

- The ALS option is disabled by default.
- The ALS option cannot be enabled in system databases, such as `master` or `model`.
- The ALS option is persistent; once you enable ALS on a specified database, you can dump and reload the database without disabling ALS. To disable this feature, you must use `sp_dboption` to set the parameter to `false`.

#### Database options

- The `abort tran on log full` option determines the fate of a transaction that is running when the last-chance threshold is crossed in the log segment of the specified database. The default value is `false`, meaning that the transaction is suspended and is awakened only when space has been freed. If you change the setting to `true`, all user queries that need to write to the transaction log are killed until space in the log has been freed.
- Setting the `allow nulls by default` option to `true` changes the default value of a column from `not null` to `null`, in compliance with the SQL standards. The Transact-SQL default value for a column is `not null`, meaning that null values are not allowed in a column unless `null` is specified in the `create table` or `alter table column definition`. `allow nulls by default true` reverses this.

You cannot use allow nulls by default to change the nullability of a column during select into statements. Instead, use convert to specify the nullability of the resulting columns.

- While the auto identity option is set to true (on), a 10-digit IDENTITY column is defined in each new table that is created without specifying either a primary key, a unique constraint, or an IDENTITY column. The column is not visible when you select all columns with the select \* statement. To retrieve it, you must explicitly mention the column name, SYB\_IDENTITY\_COL, in the select list.

To set the precision of the automatic IDENTITY column, use the size of auto identity column configuration parameter.

Though you can set auto identity to true in tempdb, it is not recognized or used, and temporary tables created there do not automatically include an IDENTITY column.

For a report on indexes in a particular table that includes the IDENTITY column, execute sp\_helpindex.

- While the dbo use only option is set to true (on), only the database's owner can use the database.
- When the ddl in tran option is set to true (on), you can use certain data definition language commands in transactions. If ddl in tran is true in a particular database, commands such as create table, grant, and alter table are allowed inside transactions in that database. If ddl in tran is true in the model database, the commands are allowed inside transactions in all databases created after ddl in tran was set in model.

---

**Warning!** Data definition language (DDL) commands hold locks on system tables such as sysobjects. Avoid using them inside transactions; if you must use them, keep the transactions short.

Using any DDL commands on tempdb within transactions may cause your system to grind to a halt. Always leave ddl in tran set to false in tempdb.

---

- The following commands can be used inside a user-defined transaction when the ddl in tran option is set to true:

alter table – clauses other than partition and unpartition are allowed	drop default
create default	drop index
create index	drop procedure
create procedure	drop rule
create rule	drop table
create schema	drop trigger
create table	drop view
create trigger	grant
create view	revoke

- The following commands cannot be used inside a user-defined transaction under any circumstances:

alter database	dump transaction
alter table...lock	drop database
alter table...partition	load transaction
alter table...unpartition	load database
create database	select into
disk init	truncate table
dump database	update statistics

In addition, system procedures that create temporary tables or change the master database cannot be used inside user-defined transactions.

- `identity in nonunique index` automatically includes an `IDENTITY` column in a table's index keys, so that all indexes created on the table are unique. This database option makes logically nonunique indexes internally unique, and allows these indexes to be used to process updatable cursors and isolation level 0 reads.

The table must already have an `IDENTITY` column for the `identity in nonunique index` option to work, either from a `create table` statement or by setting the `auto identity database` option to `true` before creating the table.

Use `identity in nonunique index` if you plan to use cursors and isolation level 0 reads on tables with nonunique indexes. A unique index ensures that the cursor will be positioned at the correct row the next time a fetch is performed on that cursor. If you plan to use cursors on tables with unique indexes and any isolation level, you may want to use the `unique auto_identity index` option.

Do not confuse the `identity in nonunique index` option with `unique auto_identity index`, which is used to add an `IDENTITY` column with a unique, nonclustered index to new tables.

For a report on indexes in a particular table that includes the IDENTITY column, execute `sp_helpindex`.

- no free space acctg suppresses free-space accounting and execution of threshold actions for the nonlog segments. This speeds recovery time because the free-space counts are not recomputed for those segments. no free space acctg disables updating the rows-per-page value stored for each table, so system procedures that estimate space usage may report inaccurate values.
- The no chkpt on recovery option is set to true (on) when an up-to-date copy of a database is kept. In these situations, there is a “primary” and a “secondary” database. Initially, the primary database is dumped and loaded into the secondary database. Then, at intervals, the transaction log of the primary database is dumped and loaded into the secondary database.

If this option is set to false (off), the default condition, a checkpoint record is added to a database after it is recovered when you restart Adaptive Server. This checkpoint, which ensures that the recovery mechanism will not be rerun unnecessarily, changes the sequence number and causes a subsequent load of the transaction log from the primary database to fail.

Setting this option to true (on) for the secondary database causes it not to get a checkpoint from the recovery process so that subsequent transaction log dumps from the primary database can be loaded into it.

- The read only option means that users can retrieve data from the database, but cannot modify any data.
- `select into/bulkcopy/plsort` must be set to on to perform operations that do not keep a complete record of the transaction in the log, which include:
  - Using the `writetext` utility.
  - Doing a select into a permanent table.
  - Doing a “fast” **bulk copy** with `bcp`. By default, fast `bcp` is used on tables that do not have indexes.
  - Performing a parallel sort.

A transaction log dump cannot recover these minimally logged operations, so dump transaction to a dump device is prohibited. However, you can still use `dump transaction...with no_log` and `dump transaction...with truncate_only`. After non-logged operations are completed, set `select into/bulk copy/plsort` to false (off) and issue `dump database`.

Issuing the dump transaction statement after unlogged changes have been made to the database with select into, bulk copy, or parallel sort produces an error message instructing you to use dump database instead. (The writetext command does not have this protection.)

You do not have to set the select into/bulkcopy/pllsort option to true in order to select into a temporary table, since tempdb is never recovered. The option need not be set to true in order to run bcp on a table that has indexes, because tables with indexes are always copied with the slower version of bulk copy and are logged.

Setting select into/bulkcopy/pllsort does not block log dumping, but making minimally logged changes to data does block the use of a regular dump transaction. .

By default, select into/bulkcopy/pllsort is turned off in newly created databases. To change the default, turn this option on in the model database.

- When single user is set to true, only one user at a time can access the database (single-user mode).

You cannot set single user to true in a user database from within a stored procedure or while users have the database open. You cannot set single user to true for tempdb.

- The trunc log on chkpt option means that if the transaction log has more than 50 rows of committed transactions, the transaction log is truncated (the committed transactions are removed) every time the checkpoint checking process occurs (usually more than once per minute). When the Database Owner runs checkpoint manually, however, the log is *not* truncated. It may be useful to turn this option on while doing development work, to prevent the log from growing.

While the trunc log on chkpt option is on, dump transaction to a dump device is prohibited, since dumps from the truncated transaction log cannot be used to recover from a media failure. Issuing the dump transaction statement produces an error message instructing you to use dump database instead.

trunc log on chkpt is off in newly created databases. To change the default, turn this option on in the model database.

---

**Warning!** If you set trunc log on chkpt on in model, and you need to load a set of database and transaction logs into a newly created database, be sure to turn the option off in the new database.

---

- The delayed commit option is disabled by default. When this is enabled, all local transactions use delayed commits. That is, at the time of commit, control returns to the client without waiting for the I/O on the log pages to complete, and the I/O is not issued on the last log buffer for delayed commit transactions. Delayed commits are not used when both delayed commit and ALS options are enabled for a database.
- When the unique auto\_identity index option is set to true, it adds an IDENTITY column with a unique, nonclustered index to new tables. By default, the IDENTITY column is a 10-digit numeric datatype, but you can change this default with the size of auto identity column configuration parameter. As with auto identity, the IDENTITY column is not visible when you select all columns with the select \* statement. To retrieve it, you must explicitly mention the column name, SYB\_IDENTITY\_COL, in the select list.

If you need to use cursors or isolation level 0 reads with nonunique indexes, use the identity in nonunique index option.

Though you can set unique auto\_identity index to true in tempdb, it is not recognized or used, and temporary tables created there do not automatically include an IDENTITY column with a unique index.

The unique auto\_identity index option provides a mechanism for creating tables that have an automatic IDENTITY column with a unique index that can be used with updatable cursors. The unique index on the table ensures that the cursor is positioned at the correct row after a fetch. (If you are using isolation level 0 reads and need to make logically nonunique indexes internally unique so that they can process updatable cursors, use the identity in nonunique index option.)

In some cases, the unique auto\_identity index option can avoid the Halloween problem for the following reasons:

- Users cannot update an IDENTITY column; hence, it cannot be used in the cursor update.
- The IDENTITY column is automatically created with a unique, nonclustered index so that it can be used for the updatable cursor scan.

For more information about the Halloween problem, IDENTITY columns, and cursors, see Chapter 18, “Cursors: Accessing Data,” in the *Transact-SQL Users Guide* and Chapter 8, “Optimization for Cursors,” in *Performance and Tuning Series: Query Processing and Abstract Plans*.

Do not confuse the unique auto\_identity index option with the identity in nonunique index option, which is used to make all indexes in a table unique by including an IDENTITY column in the table's index keys.

**Permissions** Only a System Administrator or the Database Owner can execute sp\_dboption with parameters to change database options. A user aliased to the Database Owner cannot execute sp\_dboption to change database options. Any user can execute sp\_dboption with no parameters to view database options.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

**See also** **Documents** See the *System Administration Guide* for more information on database options.

**Commands** checkpoint, select

**System procedures** sp\_configure, sp\_helpdb, sp\_helpindex, sp\_helpjoins

**Utilities** bcp



## sp\_dbrecovery\_order

Description	Specifies the order in which user databases are recovered and lists the user-defined recovery order of a database or all databases.
Syntax	<code>sp_dbrecovery_order [database_name [, rec_order [, force [ relax   strict ]]]]</code>
Parameters	<p><i>database_name</i> The name of the database being assigned a recovery order or the database whose user-defined recovery order is to be listed.</p> <p><i>rec_order</i> The order in which the database is to be recovered. A <i>rec_order</i> of -1 deletes a specified database from the user-defined recovery sequence.</p> <p><i>force</i> allows the user to insert a database into an existing recovery sequence without putting it at the end.</p> <p><i>relax</i> specifies that the databases are made as they recover (default).  The default is <i>relax</i>, which means that databases are brought online immediately when recovery has completed.</p> <p><i>strict</i> specifies that the databases are specified by the recovery order.</p>
Examples	<p><b>Example 1</b> Makes the pubs2 database the first user database to be recovered following a system failure:</p> <pre>sp_dbrecovery_order pubs2, 1</pre> <p><b>Example 2</b> Inserts the pubs3 database into third position in a user-defined recovery sequence. If another database was initially in third position, it is moved to fourth position, and all databases following it are moved accordingly:</p> <pre>sp_dbrecovery_order pubs3, 3, force</pre> <p><b>Example 3</b> Removes the pubs2 database from the user-defined recovery sequence. Subsequently, pubs2 will be recovered after all databases with a user-specified recovery order have recovered:</p> <pre>sp_dbrecovery_order pubs2, -1</pre> <p><b>Example 4</b> Lists the current recovery order of all databases with a recovery order assigned through <code>sp_dbrecovery_order</code>:</p> <pre>sp_dbrecovery_order</pre>

Usage	<ul style="list-style-type: none"><li>• You must be in the master database to use <code>sp_dbrecovery_order</code> to enter or modify a user-specified recovery order. You can list the user-defined recovery order of databases from any database.</li><li>• To change the user-defined recovery position of a database, use <code>sp_dbrecovery_order</code> to delete the database from the recovery sequence, then use <code>sp_dbrecovery_order</code> to insert it into a new position.</li><li>• System databases are always recovered before user databases. The system databases and their recovery order are:<ul style="list-style-type: none"><li>master</li><li>model</li><li>tempdb</li><li>sybssystemdb</li><li>sybsecurity</li><li>sybssystemprocs</li></ul></li><li>• If no database is assigned a recovery order through <code>sp_dbrecovery_order</code>, all user databases are recovered in order, by database ID, after system databases.</li><li>• If <i>database_name</i>:<ul style="list-style-type: none"><li>• Is specified but no <i>rec_order</i> is given – <code>sp_dbrecovery_order</code> shows the user-defined recovery position of the specified database.</li><li>• Is not specified – <code>sp_dbrecovery_order</code> lists the recovery order of all databases with a user-assigned recovery order.</li></ul></li><li>• The order of recovery assigned through <code>sp_dbrecovery_order</code> must be consecutive, starting with 1 and containing no gaps between values. The first database assigned a recovery order must be assigned a <i>rec_order</i> of 1. If three databases have been assigned a recovery order of 1, 2, and 3, you cannot assign the next database a recovery order of 5.</li></ul>
Permissions	Only a System Administrator can execute <code>sp_dbrecovery_order</code> .
Auditing	Values in event and extrainfo columns from the sysaudits table are:

---

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

## sp\_dbremap

**Description** Forces Adaptive Server to recognize changes made by alter database. Run this procedure only when instructed to do so by an Adaptive Server message.

**Syntax** sp\_dbremap *dbname*

**Parameters** *dbname*  
is the name of the database in which the alter database command was interrupted.

**Examples** An alter database command changed the database sample\_db. This command makes the changes visible to Adaptive Server:

```
sp_dbremap sample_db
```

**Usage**

- If an alter database statement issued on a database that is in the process of being dumped is interrupted, Adaptive Server prints a message instructing the user to execute sp\_dbremap.
- Any changes to sysusages during a database or transaction dump are not copied into active memory until the dump completes, to ensure that database mapping does not change during the dump. Running alter database makes changes to system tables on the disk immediately. In-memory allocations cannot be changed until a dump completes. This is why alter database pauses.  
  
When you execute sp\_dbremap, it must wait until the dump process completes.
- If you are instructed to run sp\_dbremap, but do not do it, the space you have allocated with alter database does not become available to Adaptive Server until the next restart.

**Permissions** Only a System Administrator or Database Owner can execute sp\_dbremap.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

**See also** **Commands** alter database, dump database, dump transaction

## sp\_defaultloc

Description	<b>Component Integration Services only</b> Defines a default storage location for objects in a local database.
Syntax	<code>sp_defaultloc dbname, defaultloc, defaulttype</code>
Parameters	<p><i>dbname</i> is the name of a database being mapped to a remote storage location. The database must already have been defined by a create database statement. You cannot map system databases to a remote location.</p> <p><i>defaultloc</i> is the remote storage location to which the database is being mapped. To direct the server to delete an existing default mapping for a database, supply NULL for this parameter. The value of <i>defaultloc</i> must end in a period (.), as follows:</p> <pre>server.dbname.owner.</pre> <p><i>defaulttype</i> is one of the values that specify the format of the object named by <i>object_loc</i>. The valid values are as follows. Enclose the <i>defaulttype</i> value in quotes:</p> <ul style="list-style-type: none"> <li>• <code>table</code> – indicates that the object named by <i>object_loc</i> is a table accessible to a remote server. This value is the default for <i>defaulttype</i>.</li> <li>• <code>view</code> – indicates that the object named by <i>object_loc</i> is a view managed by a remote server, processed as a table.</li> <li>• <code>rpc</code> – indicates that the object named by <i>object_loc</i> is an RPC managed by a remote server; processes the result set from the RPC as a read-only table.</li> </ul>
Examples	<p><b>Example 1</b> <code>sp_defaultloc</code> defines the remote storage location <code>pubs.dbo.</code> in the remote server named SYBASE. It maps the database <code>pubs</code> to the remote location. A <code>create table book1</code> statement would create a table named <code>book1</code> at the remote location. A <code>create existing table</code> statement for <code>bookN</code> would require that <code>pubs.dbo.bookN</code> already exist at the remote location, and information about table <code>bookN</code> would be stored in the local table <code>bookN</code>:</p> <pre>sp_defaultloc pubs, SYBASE.pubs.dbo., table create table pubs.dbo.book1 (bridges char(15))</pre> <p><b>Example 2</b> Removes the mapping of the database <code>pubs</code> to a remote location:</p> <pre>sp_defaultloc pubs, NULL</pre>

**Example 3** Identifies the remote storage location wallst.nasdaq.dbo where “wallst” is the value provided for *server\_name*, “nasdaq” is provided for *database*, and “dbo” is provided for *owner*. The RPC sybase must already exist at the remote location. A `create existing table sybase` statement would store information about the result set from RPC sybase in local table ticktape. The result set from RPC sybase is regarded as a read-only table. Inserts, updates and deletes are not supported for RPCs:

```
sp_defaultloc ticktape, wallst.nasdaq.dbo., rpc
create existing table sybase (bestbuy integer)
```

#### Usage

- `sp_defaultloc` defines a default storage location for tables in a local database. It maps table names in a database to a remote location. It permits the user to establish a default for an entire database, rather than issue an `sp_addobjectdef` command before every `create table` and `create existing table` command.
- When *defaulttype* is `table`, `view`, or `rpc`, the *defaultloc* parameter takes the form:  

```
server_name.dbname.owner.
```

  - Note that the *defaultloc* specification ends in a period (.).
  - *server\_name* represents a server already added to `sys.servers` by `sp_addserver`. The *server\_name* parameter is required.
  - *dbname* might not be required. Some server classes do not support it.
  - *owner* should always be provided to avoid ambiguity. If it is not provided, the remote object actually referenced could vary, depending on whether the external login corresponds to the remote object owner.
- Issue `sp_defaultloc` before any `create table` or `create existing table` statement. When either statement is used, the server uses the `sysattributes` table to determine whether any table mapping has been specified for the object about to be created or defined. If the mapping has been specified, a `create table` statement directs the table to be created at the location specified by *object\_loc*. A `create existing table` statement stores information about the existing remote object in the local table.
- If you issue `sp_defaultloc` on `defaulttype view` and then issue `create table`, Component Integration Services creates a new table, not a view, on the remote server.
- Changing the default location for a database does not affect tables that have previously been mapped to a different default location.

- After tables in the database have been created, all future references to tables in *dbname* (by select, insert, delete and update) are mapped to the correct location.

Permissions Any user can execute `sp_defaultloc`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** `create existing table`, `create table`

**System procedures** `sp_addobjectdef`, `sp_addserver`, `sp_helpserver`

## sp\_deletesmobj

**Description** Deletes specified backup objects from the IBM Tivoli Storage Manager (TSM).

---

**Note** sp\_deletesmobj is supported only when the TSM is licensed at your site.

---

**Syntax** sp\_deletesmob "syb\_tsm", "server\_name"{, "database\_name", "object\_type", "dump\_type", "until\_time", "bs\_name"}

**Parameters**

*syb\_tsm*

is the keyword that invokes the libsyb\_tsm.so module that enables communication with TSM.

*server\_name*

is the name of the Adaptive Server associated with the TSM backup objects to be deleted.

*database\_name*

is the name of the database associated with the TSM backup objects to be deleted. An asterisk (\*) indicates all databases.

*object\_name*

is the name of the TSM backup object as provided in the dump database or dump transaction command. If this parameter is omitted, all backup objects are deleted. An asterisk (\*) indicates all backup objects.

*dump\_type*

is the backup object type to be deleted. Values are:

- DB – database backup objects created by the dump database command.
- XACT – database backup objects created by the dump transaction command.
- \* – all database backup objects. This is the default.

*until\_time*

is the date timestamp field. All backup objects matching the specified criteria and created before the *until\_time* date are deleted.

*bs\_name*

is the name of the remote Backup Server. If *bs\_name* is omitted, the default is SYB\_BACKUP.

**Examples**

**Example 1** Removes all TSM backup objects created at the Adaptive Server "svr1."



```
sp_deletesmobj "syb_tsm", "svr1"
```

**Example 2** Removes all backup objects of the testdb database created by “svr1” before May 20, 2009, 10:51:43:866am. The backup object name is “obj1.dmp.”

```
sp_deletesmobj "syb_tsm", "svr1", "testdb", "obj1.dmp",
  "*", "may 20, 2009 10:51:43:866am"
```

Is the verbage for example 3 correct?

**Example 3** Removes all backup objects of the “testdb” database created by “svr1” of dump database type before May 21, 2009, 10:51:43:866 a.m.

```
sp_deletesmobj "syb_tsm", "svr1", "'testdb", "*", "DB",
  "may 21, 2009 10:51:43:866am"
```

**Example 4** Removes all backup objects of “testdb” created by “svr1” of dump transaction type before May 20, 2009, 10:51:43:866 a.m.

```
sp_deletesmobj "syb_tsm", "svr1", "testdb",
  "/tmp/obj1.dmp", "*", "XACT", "may 21, 2009
  10:51:43:866am"
```

Usage

For more information about Sybase support for the TSM, see THE TSM BOOK.

Permissions

Only the system administrator and users with the operator role can execute sp\_deletesmobj.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• Roles – current active roles.</li> <li>• Keywords or options – NULL.</li> <li>• Previous value – NULL.</li> <li>• Current value – NULL.</li> <li>• Other information – all input parameters.</li> <li>• Proxy information – original login name, if set proxy in effect.</li> </ul>

See also

sp\_querysmobj

## sp\_depends

**Description** Displays information about database object dependencies—the views, triggers, user-defined functions, and procedures—in the database that depend on a specified table or view, and the tables and views in the database on which the specified view, trigger, or procedure depends.

Also displays information about table column dependencies—the indexes, defaults, check constraints, rules, and referential integrity constraints—defined in either the column specified, if *column\_name* is provided, or on all the columns in the table, if *column\_name* is not provided.

**Syntax** `sp_depends objname[, column_name]`

**Parameters** *objname*  
is the name of the table, view, Transact-SQL stored procedure, SQLJ stored procedure, SQLJ function, or trigger to be examined for dependencies. You cannot specify a database name. Use owner names if the object owner is not the user running the command and is not the Database Owner.

*column\_name*  
is the name of the column to be examined for dependencies.

**Examples** **Example 1** Lists the database objects that depend on the table sysobjects:

```
sp_depends sysobjects
```

**Example 2** Lists the database objects that depend on the titleview view, and the database objects on which the titleview view depends:

```
sp_depends titleview
```

```
Things that the object references in the current
database.
```

object	type	updated	selected
-----	-----	-----	-----
dbo.authors	user table	no	no
dbo.titleauthor	user table	no	no
dbo.titles	user table	no	no

```
Things inside the current database that reference the
object.
```

object	type
-----	-----
dbo.tvview2	view

**Example 3** Lists the database objects that depend on the titles table owned by the user “mary”. The quotes are needed, since the period is a special character:

```
sp_depends "mary.titles"
```

**Example 4** Shows the column-level dependencies for all columns of the sysobjects table:

```
sp_depends sysobjects
```

Things inside the current database that reference the object.

object	type
-----	-----
dbo.sp_dbupgrade	stored procedure
dbo.sp_procxmode	stored procedure

Dependent objects that reference all columns in the table. Use sp\_depends on each column to get more information.  
Columns referenced in stored procedures, views or triggers are not included in this report.

Column	Type	Object Names or Column Names
-----	-----	-----
cache	permission	column permission
ckfirst	permission	column permission
crdate	permission	column permission
deltrig	permission	column permission
expdate	permission	column permission
id	index	sysobjects (id)
id	logical RI	From syscolumns (id) To sysobjects (id)
id	logical RI	From syscomments (id) To sysobjects (id)
id	logical RI	From sysdepends (id) To sysobjects (id)
id	logical RI	From sysindexes (id) To sysobjects (id)
id	logical RI	From syskeys (depid) To sysobjects (id)
id	logical RI	From syskeys (id) To sysobjects (id)
id	logical RI	From sysobjects (id) To sysprocedures (id)
id	logical RI	From sysobjects (id) To sysprotects (id)
id	logical RI	sysobjects (id)
id	permission	column permission
indexdel	permission	column permission
instrig	permission	column permission
loginame	permission	column permission
name	index	ncsysobjects (name, uid)
name	permission	column permission
objspare	permission	column permission
schemacnt	permission	column permission
seltrig	permission	column permission
sysstat	permission	column permission
sysstat2	permission	column permission
type	permission	column permission
uid	index	ncsysobjects (name, uid)
uid	logical RI	From sysobjects (uid) To sysusers (uid)

```
uid                permission    column permission
updtrig           permission    column permission
userstat          permission    column permission
versionts         permission    column permission
```

**Example 5** Shows more details about the column-level dependencies for the id column of the sysobjects table:

```
sp_depends sysobjects, id
```

Things inside the current database that reference the object.

```
object                type
-----
dbo.sp_dbupgrade      stored procedure
dbo.sp_procxmode      stored procedure
```

Dependent objects that reference column id.

Columns referenced in stored procedures, views or triggers are not included in this report.

Type	Property	Object Names or Column Names Also see/Use command
-----	-----	-----
index	index	sysobjects (id) sp_helpindex, drop index, sp_helpconstraint, alter table drop constraint
logical RI	primary	sysobjects (id) sp_helpkey, sp_dropkey
logical RI	foreign	From syskeys (id) To sysobjects (id) sp_helpkey, sp_dropkey
logical RI	common	From syscolumns (id) To sysobjects (id) sp_helpkey, sp_dropkey
logical RI	common	From sysdepends (id) To sysobjects (id) sp_helpkey, sp_dropkey
logical RI	common	From sysindexes (id) To sysobjects (id) sp_helpkey, sp_dropkey
logical RI	common	From syskeys (depid) To sysobjects (id) sp_helpkey, sp_dropkey
logical RI	common	From syscomments (id) To sysobjects (id) sp_helpkey, sp_dropkey
logical RI	common	From sysobjects (id) To sysprotects (id) sp_helpkey, sp_dropkey
logical RI	common	From sysobjects (id) To sysprocedures (id) sp_helpkey, sp_dropkey
permission	permission	column permission sp_helprotect, grant/revoke

**Example 6** Shows the column-level dependencies for all columns of the user-created table, titles:

```
1> sp_depends titles
```

Things inside the current database that reference the object.

object	type
dbo.delttitle	trigger
dbo.history_proc	stored procedure
dbo.title_proc	stored procedure
dbo.titleid_proc	stored procedure
dbo.titleview	view
dbo.totalsales_trig	trigger

Dependent objects that reference all columns in the table. Use sp\_depends on each column to get more information.

Columns referenced in stored procedures, views or triggers are not included in this report.

Column	Type	Object Names or Column Names
pub_id	logical RI	From titles (pub_id) To publishers (pub_id)
pubdate	default	datedflt
title	index	titleind (title)
title	statistics	(title)
title_id	index	titleidind (title_id)
title_id	logical RI	From roysched (title_id) To titles (title_id)
title_id	logical RI	From salesdetail (title_id) To titles (title_id)
title_id	logical RI	From titleauthor (title_id) To titles (title_id)
title_id	logical RI	titles (title_id)
title_id	rule	title_idrule
title_id	statistics	(title_id)
type	default	typedflt

**Example 7** Shows more details about the column-level dependencies for the pub\_id column of the user-created titles table:

```
sp_depends titles, pub_id
```

Things inside the current database that reference the object.

object	type
dbo.delttitle	trigger
dbo.history_proc	stored procedure
dbo.title_proc	stored procedure
dbo.titleid_proc	stored procedure

```

dbo.titleview                view
dbo.totalsales_trig          trigger
Dependent objects that reference column pub_id.
Columns referenced in stored procedures, views or triggers are not
included in this report.
Type          Property      Object Names or Column Names
                Also see/Use command
-----
logical RI    foreign      From titles (pub_id) To publishers (pub_id)
                sp_helpkey, sp_dropkey

```

Usage

- Executing sp\_depends lists all objects in the current database that depend on *objname*, and on which *objname* depends. For example, views depend on one or more tables and can have procedures or other views that depend on them. An object that references another object is dependent on that object. References to objects outside the current database are not reported.
- Before you modify or drop a column, use sp\_depends to determine if the table contains any dependent objects that could be affected by the modification. For example, if you modify a column to use a new datatype, objects tied to the table may need to be redefined to be consistent with the column's new datatype.
- The sp\_depends procedure determines the dependencies by looking at the sysdepends table.  
  
If the objects were created out of order (for example, if a procedure that uses a view was created before the view was created), no rows exist in sysdepends for the dependencies, and sp\_depends does not report the dependencies.
- The updated and selected columns in the report from sp\_depends are meaningful if the object being reported on is a stored procedure or trigger. The values for the updated column indicate whether the stored procedure updates the object. The selected column indicates whether the object is being used for a read cursor or a data modification statement.
- sp\_depends follows these Adaptive Server rules for finding objects:
  - If the user does not specify an owner name, and the user executing the command owns an object with the specified name, that object is used.
  - If the user does not specify an owner name, and the user does not own an object of that name, but the Database Owner does, the Database Owner's object is used.

- If neither the user nor the Database Owner owns an object of that name, the command reports an error condition, even if an object exists in the database with that object name, but with a different owner.
- If both the user and the Database Owner own objects with the specified name, and the user wants to access the Database Owner's object, the name must be specified, as in *dbo.objectname*.
- Objects owned by database users other than the user executing a command and the Database Owner must always be qualified with the owner's name, as in Example 3.
- SQLJ functions and SQLJ stored procedures are Java methods wrapped in SQL wrappers. See *Java in Adaptive Server Enterprise* for more information.
  - SQLJ functions and SQLJ stored procedures are database objects for which you can list dependencies. The only dependencies of SQLJ stored procedures and SQLJ functions are Java classes.
  - If *objname* is a SQLJ stored procedure or SQLJ function, *sp\_depends* lists the Java class in the routine's external name declared in the create statement, not classes specified as the return type or datatypes in the parameter list.
  - SQLJ stored procedures and SQLJ functions can be listed as dependencies of other database objects.

Permissions Any user can execute *sp\_depends*.

Auditing Values in event and extrainfo columns from the *sysaudits* table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<i>exec_procedure</i>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Commands** create procedure, create table, create view, execute  
**System procedures** *sp\_help*

## sp\_deviceattr

Description	<b>UNIX platforms only</b> Changes the device parameter settings of an existing database device file.
Syntax	sp_deviceattr <i>logicalname</i> , <i>optname</i> , <i>optvalue</i>
Parameters	<p><i>logicalname</i> is the logical name of an existing database device. The device can be stored on either an operating system file or a raw partition, but the dsync setting is ignored for raw partitions.</p> <p><i>optname</i> name of the attribute to change. Valid values are directio or dsync:</p> <ul style="list-style-type: none"><li>• directio – enables Adaptive Server to write directly to disk, bypassing the operating system’s buffer system.</li><li>• dsync – enables updates to the device take place directly on the storage media, or are buffered by the UNIX file system</li></ul> <hr/> <p><b>Note</b> The directio and dsync options are mutually exclusive; you cannot specify “true” for both at the same time.</p> <hr/>
Examples	<p><i>optvalue</i> can be either “true” or “false.”</p> <p>Sets dsync on for the device named “file_device1”:</p> <pre>sp_deviceattr file_device1, dsync, true</pre>
Usage	<ul style="list-style-type: none"><li>• For database devices stored on UNIX files, dsync determines whether updates to the device take place directly on the storage media, or are buffered by the UNIX file system.</li></ul> <p>When dsync is on, writes to the database device occur directly to the physical storage media, and Adaptive Server can recover data on the device in the event of a system failure.</p> <p>When dsync is off, writes to the database device may be buffered by the UNIX file system. The UNIX file system may mark an update as being completed, even though the physical media has not yet been modified. In the event of a system failure, there is no guarantee that requests to update data have ever taken place on the physical media, and Adaptive Server may be unable to recover the database.</p> <ul style="list-style-type: none"><li>• After using sp_deviceattr to change the dsync or directio setting, you must reboot Adaptive Server before the change takes affect.</li></ul>



- `sp_deviceattr` displays a warning message if the `dsync` option is disabled for a database device file.  
`directio` setting, you must reboot Adaptive Server before the change takes affect.
- `dsync` is always on for the master device file. You cannot change the `dsync` setting for a master device file with `sp_deviceattr`. Therefore, you cannot set the `directio` option for the master device.
- Turn off the `dsync` value only when the databases on the device does not need to be recovered after a system failure. For example, you may consider turning `dsync` off for a device that stores only the `tempdb` database.
- Adaptive Server ignores the `dsync` setting for devices stored on raw partitions; updates to those devices are never buffered, regardless of the `dsync` setting.
- `dsync` is not used on the Windows NT platform.

Permissions The user executing `sp_deviceattr` must have permission to update the `sysdevices` table.

Auditing Values in event and `extrainfo` columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in <code>extrainfo</code>
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_helpdevice`

## sp\_diskdefault

Description	Specifies whether or not a database device can be used for database storage if the user does not specify a database device or specifies default with the create database or alter database commands.
Syntax	<code>sp_diskdefault <i>logicalname</i>, {defaulton   defaultoff}</code>
Parameters	<p><i>logicalname</i> is the logical name of the device as given in master.dbo.sysdevices.name. The device must be a database device rather than a dump device.</p> <p>defaulton   defaultoff defaulton designates the database device as a default database device; defaultoff designates that the specified database device is not a default database device.</p> <p>Use defaulton after adding a database device to the system with disk init. Use defaultoff to change the default status of the master device (which is designated as a default device when Adaptive Server is first installed).</p>
Examples	The master device is no longer used by create database or alter database for default storage of a database:  <pre>sp_diskdefault master, defaultoff</pre>
Usage	<ul style="list-style-type: none"><li>• A default database device is one that is used for database storage by create database or alter database if the user does not specify a database device name or specifies the keyword default.</li><li>• You can have multiple default devices. They are used in the order they appear in the master.dbo.sysdevices table (that is, alphabetical order). When the first default device is filled, the second default device is used, and so on.</li><li>• When you first install Adaptive Server, the master device is the only default database device.</li></ul> <hr/> <p><b>Note</b> Once you initialize devices to store user databases, use sp_diskdefault to turn off the master device's default status. This prevents users from accidentally creating databases on the master device and simplifies recovery of the master database.</p> <hr/> <ul style="list-style-type: none"><li>• To find out which database devices are default database devices, execute sp_helpdevice.</li></ul>
Permissions	Only a System Administrator can execute sp_diskdefault.

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

## See also

**Commands** alter database, create database, disk init

**System procedures** sp\_helpdevice

## sp\_displayaudit

Description	Displays the status of audit options.
Syntax	<code>sp_displayaudit ["procedure"   "object"   "login"   "database"   "global"   "default_object"   "default_procedure" [, "name"]]</code>
Parameters	<p><b>procedure</b> displays the status of audit options for the specified stored procedure or trigger. If you do not specify a value for <i>name</i>, sp_displayaudit displays the active audit options for all procedures and triggers in the current database.</p> <p><b>object</b> displays the status of audit options for the specified table or view. If you do not specify a value for <i>name</i>, sp_displayaudit displays the active audit options for all tables and views in the current database.</p> <p><b>login</b> displays the status of audit options for the specified user login. If you do not specify a value for <i>name</i>, sp_displayaudit displays the active audit options for all logins in the master database.</p> <p><b>database</b> displays the status of audit options for the specified database. If you do not specify a value for <i>name</i>, sp_displayaudit displays the active audit options for all databases on the server.</p> <p><b>global</b> displays the status of the specified global audit option. If you do not specify a value for <i>name</i>, sp_displayaudit displays the active audit options for all procedures and triggers in the current database.</p> <p><b>default_object</b> displays the default audit options that will be used for any new table or view created on the specified database. If you do not specify a value for <i>name</i>, sp_displayaudit displays the default audit options for all databases with active default audit settings.</p> <p><b>default_procedure</b> displays the default audit options that will be used for any new procedure or trigger created on the specified database. If you do not specify a value for <i>name</i>, sp_displayaudit displays the default audit options for all databases with active default audit settings.</p>

*name*

is the information for the specified parameter, as described in the following table:

Parameter	Value for <i>name</i>
procedure	Procedure or trigger name
object	Table or view name
login	User login
database	Database name
global	Global audit option
default_object	Database name
default_procedure	Database name

### Examples

**Example 1** Displays the status of each category and all auditing options when you do not specify a parameter:

```
sp_displayaudit
```

```
Procedure/Trigger      Audit Option  Value Database
-----
dbo.sp_altermessage   exec_procedure on   sybsemprocs
dbo.sp_help           exec_procedure on   sybsemprocs
dbo.sp_who            exec_procedure on   sybsemprocs
No databases currently have default sproc/trigger auditing enabled.
No objects currently have auditing enabled.
No databases currently have default table/view auditing enabled.
No logins currently have auditing enabled.
No databases currently have auditing enabled.
```

```
Option Name          Value
-----
adhoc                off
dbcc                 off
disk                 off
errors               off
login                off
logout               off
keycustodian_role   off
navigator_role      off
oper_role            off
replication_role    off
rpc                  off
sa_role              off
security              off
sso_role             off
```

**Example 2** Displays the status of all procedure audit options when you do not specify a procedure name:

```
sp_displayaudit "procedure"
```

Procedure/Trigger	Audit Option	Value	Database
dbo.sp_altermessage	exec_procedure	on	sybsystemprocs
dbo.sp_help	exec_procedure	on	sybsystemprocs
dbo.sp_who	exec_procedure	on	sybsystemprocs

**Example 3** Displays only the status of the procedure when you specify a name for a procedure:

```
sp_displayaudit "procedure", "sp_who"
```

Procedure/Trigger	Audit Option	Value	Database
dbo.sp_who	exec_procedure	on	sybsystemprocs

**Example 4** Displays the status of all global audit options when you do not specify a global audit option:

```
sp_displayaudit "global"
```

Option Name	Value
adhoc	off
dbcc	off
disk	off
errors	off
login	off
logout	off
keycustodian_role	off
navigator_role	off
oper_role	off
replication_role	off
rpc	off
sa_role	off
security	off
sso_role	off

Usage

- sp\_displayaudit displays the status of audit options.
- The following table shows the valid auditing options for each parameter:

Object type parameter	Valid auditing options
procedure	exec_procedure, exec_trigger
object	delete, func_obj_access, insert, reference, select, update
login	all, cmdtext, table_access, view_access
database	alter, bcp, bind, create, dbaccess, drop, dump, encryption_key, func_dbaccess, grant, load, revoke, setuser, truncate, unbind
global	adhoc, dbcc, disk, errors, login, logout, navigator_role, oper_role, replication_role, rpc, keycustodian_role, sa_role, security, sso_role
default_object	delete, func_obj_access, insert, reference, select, update
default_procedure	exec_procedure, exec_trigger

- You cannot specify a value for name unless you first specify an object type parameter.

Permissions Only a System Security Officer can execute sp\_displayaudit.

Auditing Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Documents** See the *System Administration Guide* for information on setting up auditing.

**System procedures** sp\_audit

**Utilities** bcp

## sp\_displaylevel

Description	Sets or shows which Adaptive Server configuration parameters appear in sp_configure output.
Syntax	sp_displaylevel [ <i>loginame</i> [, <i>level</i> ]]
Parameters	<p><i>loginame</i> is the Adaptive Server login of the user for whom you want to set or show the display level.</p> <p><i>level</i> sets the display level to one of the following:</p> <ul style="list-style-type: none"><li>• “basic” display level shows just the most basic configuration parameters. This level is appropriate for very general server tuning.</li><li>• “intermediate” display level shows configuration parameters that are somewhat more complex, as well as all the “basic” level parameters. This level is appropriate for moderately complex server tuning.</li><li>• “comprehensive” display level shows all configuration parameters, including the most complex ones. This level is appropriate for highly detailed server tuning.</li></ul>
Examples	<p><b>Example 1</b> Shows the current display level for the user who invoked sp_displaylevel:</p> <pre>sp_displaylevel</pre> <p>The current display level for login 'sa' is 'comprehensive'.</p> <p><b>Example 2</b> Shows the current display level for the user “jerry”:</p> <pre>sp_displaylevel jerry</pre> <p>The current display level for login 'jerry' is 'intermediate'.</p> <p><b>Example 3</b> Sets the display level to “comprehensive” for the user “jerry”:</p> <pre>sp_displaylevel jerry, comprehensive</pre> <p>The display level for login 'jerry' has been changed to 'comprehensive'.</p>
Usage	See the <i>System Administration Guide</i> for details about display levels and configuration parameters.
Permissions	Only a System Administrator can execute sp_displaylevel to set the display level for another user. Any user can execute sp_displaylevel to set and show his or her own display level.
Auditing	Values in event and extrainfo columns from the sysaudits table are:



<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_configure

## sp\_displaylogin

**Description** Displays information about a login account. By using a wildcard expression (%), you can also obtain information about matching logins. Also displays the encryption versions of the login password stored on disk.

**Syntax** sp\_displaylogin ['*user\_id*' | '['*loginame* | *wildcard*']

**Parameters** *user\_id*

is the server user ID.

*loginame*

is the user login account about which you want information. You must be a System Security Officer or System Administrator to get information about someone else's login account.

*wildcard*

is the wildcard expression you use to obtain information about login accounts.

**Examples**

**Example 1** Displays information about your server login account. The password expiration is set to "0", indicating the password will never expire.

```
1> sp_displaylogin 'sa'
2> go

Suid: 121
Loginame: mylogin
Fullname:
Default Database: master
Default Language:
Auto Login Script:
Configured Authorization:
    sa_role (default ON)
    sso_role (default ON)
    oper_role (default ON)
    sybase_ts_role (default ON)
Locked: NO
Date of Last Password Change: Aug 10 2006 11:17AM
Password expiration interval: 0
Password expired: NO
Minimum password length: 6
Maximum failed logins: 0
Current failed login attempts:
Authenticate with: NONE
Login password encryption: SYB-PROP, SHA-256
Last login date : Aug 17 2006 5:55PM
(return status = 0)
```

**Example 2** Displays information about the login account “susanne”. The information displayed varies, depending on the role of the user executing `sp_displaylogin`. There is not password expiration set for user “susanne”, so the password does not expire.

```
sp_displaylogin susanne

Suid: 12
Loginname: susanne
Fullname:
Default Database: pubs2
Default Language:
Auto Login Script:
Configured Authorization:
    supervisor (default OFF)
Locked: NO
Date of Last Password Change: July 26 2007 10:42AM
Authenticate with: NONE
```

**Example 3** Displays the login security-related parameters configured for a login, as well as a specified authentication mechanism. The password expires on November 29, 2007 at 3:46PM, and expires five days later, on December 5, 2007 at 3:46PM.

```
sp_displaylogin joe

Suid: 294
Loginname: joe
Fullname: Joseph Resu
Default Database: master
Default Language:
Auto Login Script:
Configured Authorization:
    intern_role (default OFF)
Locked: NO
Date of Last Password Change: Nov 24 2007 3:46PM
Password expiration interval : 5
Password expired : NO
Minimum password length:4
Maximum failed logins : 10
Current failed logins : 3
Authenticate with: ASE
Login password encryption: SHA-256
```

**Example 4** Displays information about a login account with Server User ID 1.

```
sp_displaylogin '1'
-----
Suid: 1
```

```
Loginname: sa
Fullname:
Default Database: master
Default Language
Auto Login Script:
Configured Authorization:
    sa_role (default ON)
    sso_role (default ON)
    oper_role (default ON)
    sybase_ts_role (default ON)
Locked: NO
Date of Last Password Change: Dec 18 2006
Password expiration interval: 0
```

**Example 5** You can use a wildcard to indicate any server login account, as opposed to your own server login account.

```
sp_displaylogin '%'
```

```
-----
Suid Loginname Fullname Default Database Default Language Auto Login Script
Locked Date of Last Password Change Password expiration interval Password
expired Minimum password length Maximum failed logins Current failed login
attempts Authenticate with
Configured Authorization
```

```
-----
-----
-----
-----
-----
2 probe NULL sybssystemdb NULL NULL NO Jan 8 2007 7:13AM 1 NO 6 0 0 NONE
NULL
1 sa NULL master NULL NULL NO Jan 8 2007 6:46AM 1 NO 6 0 0 NONE
```

**Example 6** The on-disk login password is encrypted and stored, using both the old Sybase proprietary encryption algorithm and the SHA-256 algorithm:

```
1> sp_displaylogin 'mylogin'
2> go

Suid: 121
Loginname: mylogin
Fullname:
Default Database: master
Default Language:
Auto Login Script:
Configured Authorization:
    sa_role (default ON)
```

```

        sso_role (default ON)
        oper_role (default ON)
        sybase_ts_role (default ON)
Locked: NO
Date of Last Password Change: Aug 10 2006 11:17AM
Password expiration interval: 0
Password expired: NO
Minimum password length: 6
Maximum failed logins: 0
Current failed login attempts:
Authenticate with: NONE
Login password encryption: SYB-PROP, SHA-256
Last login date : Aug 17 2006 5:55PM
(return status = 0)

```

When the login password is stored on disk using the SHA-256 algorithm only, the output of `sp_displaylogin` has the line “Login password encryption: SHA-256”:

```

1> sp_displaylogin 'mylogin'
2> go

Suid: 121
Loginame: mylogin
...
Authenticate with: NONE
Login password encryption: SHA-256
Last login date : Aug 17 2006 5:55PM
(return status = 0)

```

When a login has not occurred after upgrade from Adaptive Server versions earlier than 15.0.2, the previous style of encryption is still in place, and the output of `sp_displaylogin` has the line “Login password encryption: SYB-PROP”:

```

1> sp_displaylogin 'mylogin'
2> go

Suid: 121
Loginame: mylogin
...
Authenticate with: NONE
Login password encryption: SYB-PROP
Last login date : Aug 17 2006 5:55PM
(return status = 0)

```

When a login has been locked, `sp_displaylogin` shows the date, reason, and login that locked the account. The `lastlogindate` value is also displayed:

```

1> sp_displaylogin 'mylogin'

```

```
2> go

Suid: 121
Loginame: mylogin
Fullname:
Default Database: master
Default Language:
Auto Login Script:
Configured Authorization:
    sa_role (default ON)
    sso_role (default ON)
    oper_role (default ON)
    sybase_ts_role (default ON)
Locked: YES
    Date when locked: Aug 18 2006 9:15AM
    Reason: Account locked by Adaptive Server due
to failed login attempts reaching max failed logins.
    Locking suid: 121
Date of Last Password Change: Aug 10 2006 11:17AM
Password expiration interval: 0
Password expired: NO
Minimum password length: 6
Maximum failed logins: 3
Current failed login attempts: 3
Authenticate with: ANY
Login password encryption: SYB-PROP, SHA-256
Last login date : Aug 17 2006 5:55PM
(return status = 0)
```

**Example 7** Displays the encryption versions used for a login; the last line of this output includes information about the on-disk login password encryption Adaptive Server uses:

```
Suid: 1
Loginame: sa
Fullname:
Default Database: master
Default Language:
Auto Login Script:
Configured Authorization:
    sa_role (default ON)
    sso_role (default ON)
    oper_role (default ON)
    sybase_ts_role (default ON)
Locked: NO
Date of Last Password Change: Mar 8 2007 3:04PM
Password expiration interval: 0
```

```

Password expired: NO
Minimum password length: 6
Maximum failed logins: 0
Current failed login attempts:
Authenticate with: ANY
Login Password Encryption: SHA-256

```

If Adaptive Server uses encryption algorithms from Adaptive Server versions earlier than 15.0.2 or the current release during a downgrade period, `sp_displaylogin` displays the earlier Sybase proprietary encryption algorithm and the new algorithm, SHA-256:

```

Login password encryption: SYB-PROP, SHA-256

```

When a login has been locked, `sp_displaylogin` shows the date, reason, and login that locked the account.

**Example 8** Displays the login account for the user with a `suid` of 56:

```

sp_displaylogin '56'

```

Displays the login account information for all users whose logins begin with “st”:

```

sp_displaylogin 'st%'

```

#### Usage

- The `sp_passwordpolicy` security options are taken into consideration when displaying login information related to password expiration, maximum failed logins, and password length.
- `sp_displaylogin` displays the encryption version(s) used for a login. For example, when both old and new encryption is used during the password downgrade period, the output of `sp_displaylogin` has the new line “Password encryption.”
- `sp_displaylogin` displays configured roles, so even if you have made a role inactive with the `set` command, it is displayed.
- If there are any login triggers associated with the login in question, they are listed after the `Auto Login Script` line. For more information, see “Row-level access control” in Chapter 11, “Managing User Permissions,” of the *System Administration Guide*.
- When you use `sp_displaylogin` to get information about your own account, you do not need to use the `loginame` parameter. `sp_displaylogin` displays your server user ID, login name, full name, any roles that have been granted to you, date of last password change, default database, default language, and whether your account is locked.

- If you are a System Security Officer or System Administrator, you can use the *loginame* parameter to access information about any account.

Permissions

Only a System Administrator or a System Security Officer can execute `sp_displaylogin` with the *loginame* or *suid* to get information about other users' login accounts. Any user can execute `sp_displaylogin` to get information about his or her own login account.

Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**Stored procedures** `sp_activeroles`, `sp_displayroles`, `sp_helprotect`, `sp_modifylogin`



## sp\_displayroles

**Description** Displays all roles granted to another role, or displays the entire hierarchy tree of roles in table format.

**Syntax** `sp_displayroles [grantee_name [, mode]]`

**Parameters** *grantee\_name*  
is the login name of a user whose roles you want information about, or the name of a role you want information about.

*mode*

is one of the following:

- `expand_up` – shows the role hierarchy tree for the parent levels
- `expand_down` – shows the role hierarchy tree for the child levels
- `display_info` – shows the login security-related parameters configured for the specified role

**Examples** **Example 1** Displays all roles granted to the user issuing the command:

```
sp_displayroles
Role Name
-----
supervisor_role
```

**Example 2** Displays all roles granted to `supervisor_role`:

```
sp_displayroles "supervisor_role"
Role Name
-----
clerk
```

**Example 3** Displays the roles granted to login “susanne” and the roles below it in the hierarchy:

```
sp_displayroles susanne, expand_down
Role Name          Parent Role Name      Level
-----
supervisor_role    NULL                  1
clerk_role         supervisor_role       2
```

**Example 4** Displays the roles granted to `intern_role` and the roles above it in the hierarchy:

```
sp_displayroles "intern_role", expand_up
```

**Example 5** Shows the login security-related parameters configured for the specified role:

```
sp_displayroles physician_role, "display_info"

Role name = physician_role
Locked : NO
Date of Last Password Change : Oct 31 1999 3:33PM
Password expiration interval = 5
Password expired : NO
Minimum password length = 4
Maximum failed logins = 10
Current failed logins = 3
```

- Usage                      When you specify the optional parameter `expand_up` or `expand_down` all directly granted roles contained by or containing the specified role name are displayed.
- Permissions               Only a System Administrator can execute `sp_displayroles` to display information on roles granted to any other user. All users can execute `sp_displayroles` to see the roles granted to them.
- Auditing                   Values in event and `extrainfo` columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

- See also                   **Documents** See “User-Defined Login Security” in the *System Administration Guide* for more information.
- Commands** `alter role`, `create role`, `drop role`, `grant`, `revoke`, `set`
- System procedures** `sp_activeroles`, `sp_displaylogin`, `sp_helprotect`, `sp_modifylogin`

## sp\_downgrade

Description	Validates readiness for downgrade to an earlier 15.0.x release. Also downgrades the system catalog changes Adaptive Server 15.0.2 modified.
Syntax	<code>sp_downgrade @cmd = {'prepare'   'downgrade'   'help'}, @toversion = 'n'[, @verbose = 0   1][, @override = 0   1]</code>
Parameters	<p><b>prepare</b> is use first to validate readiness of Adaptive Server 15.0.2 for downgrade.</p> <p><b>downgrade</b> is used after prepare parameter when ready to proceed with the act of downgrading to a previously installed 15.x version of Adaptive Server. Server must be in single user mode. (started with -m option)</p> <p><b>toversion</b> can be 15.0 or 15.0.1 written “150” or “15.0”, “1501” or “15.0.1”</p> <p><b>verbose</b> specifies verbosity. Valid options are 0 (for no) or 1 (for yes).</p> <p><b>override</b> specifies whether to skip databases that are not writable at this time. Valid options are 0 (for no) or 1 (for yes).</p>
Examples	<p>This is an example of the output from running <code>sp_downgrade</code>.</p> <pre>00:00000:00006:2007/04/25 17:39:29.63 server Starting downgrading ASE. 00:00000:00006:2007/04/25 17:39:29.64 server Downgrade : Downgrading login passwords. 00:00000:00006:2007/04/25 17:39:29.64 server Downgrade : Starting password downgrade. 00:00000:00006:2007/04/25 17:39:29.64 server Downgrade : Removed sysattributes rows. 00:00000:00006:2007/04/25 17:39:29.64 server Downgrade : Updated 0 passwords. 00:00000:00006:2007/04/25 17:39:29.65 server Downgrade : Removed columns in syslogins - lastlogindate, crdate, locksuid, lock reason, lockdate are removed. 00:00000:00006:2007/04/25 17:39:29.65 server Downgrade : Truncated password lengths. 00:00000:00006:2007/04/25 17:39:29.65 server Downgrade : Successfully completed password downgrade. 00:00000:00006:2007/04/25 17:39:29.65 server Downgrade : Marking stored procedures for recompilation. 00:00000:00006:2007/04/25 17:39:31.31 server Downgrade : Dropping Sysoptions system table. 00:00000:00006:2007/04/25 17:39:31.33 server Downgrade : Setting master database minor upgrade version. 00:00000:00006:2007/04/25 17:39:31.33 server Downgrade : Setting user databases minor upgrade version.</pre>
Usage	Use to revert to the previously installed Adaptive Server 15.0.x release. At this time it is not possible to revert to Adaptive Server 15.0.2.

## sp\_dropalias

Description	Removes the alias user name identity established with sp_addalias.
Syntax	sp_dropalias <i>loginame</i> [, force]
Parameters	<i>loginame</i> is the name (in master.dbo.syslogins) of the user who was aliased to another user.  force allows you to drop an alias even if it owns database objects.
Examples	<b>Example 1</b> Assuming that “victoria” was aliased (for example, to the Database Owner) in the current database, this statement drops “victoria” as an aliased user from the database:  <pre>sp_dropalias victoria</pre> <b>Example 2</b> Drops the alias “harry,” which owns a procedure namelist. Adaptive Server drops the alias but issues a warning message:  <pre>sp_dropalias harry, force</pre> Warning: You have forced the drop of the alias for login 'harry' which owns objects in the database. This may result in errors when those objects are accessed from or contain references to another database. Alias user dropped.  <pre>(return status = 0)</pre>
Usage	<ul style="list-style-type: none"><li>• Executing the sp_dropalias procedure deletes an alternate suid mapping for a user from the sysalternates table.</li><li>• When a user’s alias is dropped, he or she no longer has access to the database for which the alias was created.</li><li>• You can drop the alias of a user who owns objects in the database. You do not need to first drop the objects before dropping the login.</li></ul>
Permissions	Only the Database Owner, a System Administrator, or a System Security Officer can execute sp_dropalias.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_addalias, sp\_adduser, sp\_droplogin, sp\_dropuser, sp\_helpuser

## sp\_drop\_all\_qplans

Description	Deletes all abstract plans in an abstract plan group.
Syntax	sp_drop_all_qplans <i>name</i>
Parameters	<i>name</i> is the name of the abstract plan group from which to drop all plans.
Examples	sp_drop_all_qplans dev_test
Usage	<ul style="list-style-type: none"> <li>To drop individual plans, use sp_drop_qplan.</li> <li>To see the names of abstract plan groups in the current database, use sp_help_qpgroup.</li> <li>sp_drop_all_qplans silently drops all plans in the group that belong to the specified user, or all plans in the group, if it is executed by a System Administrator or Database Owner.</li> </ul>
Permissions	Any user can execute sp_drop_all_qplans to drop plans that he or she owns. Only a System Administrator or Database Owner can drop plans owned by other users.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Command or access			
Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** sp\_drop\_qplan, sp\_drop\_qpgroup

## sp\_drop\_qpgroup

Description	Drops an abstract plan group.
Syntax	<code>sp_drop_qpgroup group</code>
Parameters	<i>group</i> is the name of the abstract plan group to drop.
Examples	Drops the abstract plan group “dev_test”:  <code>sp_drop_qpgroup dev_test</code>
Usage	<ul style="list-style-type: none"> <li>You cannot drop the default groups, <code>ap_stdin</code> and <code>ap_stdout</code>.</li> <li>You cannot drop a group that contains plans. To drop all of the plans in a group, use <code>sp_drop_all_qpplans</code>. To see a list of groups and the number of plans they contain, use <code>sp_help_qpgroup</code>.</li> <li><code>sp_drop_qpgroup</code> cannot be run in a transaction.</li> </ul>
Permissions	Only a System Administrator or Database Owner can execute <code>sp_drop_qpgroup</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_drop_all_qpplans`, `sp_help_qpgroup`

## sp\_drop\_qplan

Description	Drops an abstract plan.
Syntax	sp_drop_qplan <i>id</i>
Parameters	<i>id</i> is the ID of the abstract plan to drop.
Examples	The abstract plan with the specified ID is dropped:  sp_drop_qplan 1760009301
Usage	<ul style="list-style-type: none"> <li>To find the ID of a plan, use sp_help_qpgroup, sp_help_qplan, or sp_find_qplan. Plan IDs are also returned by create plan and are included in showplan output.</li> <li>To drop all abstract plans in a group, use sp_drop_all_qplans.</li> </ul>
Permissions	Any user can execute sp_drop_qplan to drop a plan he or she owns. Only the System Administrator or the Database Owner can drop plans owned by other others.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>Roles – Current active roles</li> <li>Keywords or options – NULL</li> <li>Previous value – NULL</li> <li>Current value – NULL</li> <li>Other information – All input parameters</li> <li>Proxy information – Original login name, if set proxy in effect</li> </ul>

See also	<p><b>Commands</b> create plan</p> <p><b>System procedures</b> sp_drop_all_qplans, sp_find_qplan, sp_help_qpgroup, sp_help_qplan</p>
----------	--



## sp\_drop\_resource\_limit

Description	Removes one or more resource limits from Adaptive Server.
Syntax	<pre>sp_drop_resource_limit { <i>name</i>, <i>appname</i> }                         [, <i>rangename</i>, <i>limittype</i>, <i>enforced</i>, <i>action</i>, <i>scope</i>]</pre>
Parameters	<p><i>name</i></p> <p>is the Adaptive Server login to which the limit applies. To drop resource limits that apply to all users of a particular application, specify the <i>appname</i> and a <i>name</i> of NULL.</p> <p><i>appname</i></p> <p>is the application to which the limit applies. To drop resource limits that apply to all applications used by the specified login, specify the login name and an <i>appname</i> of NULL. To drop a limit that applies to a particular application, specify the application name that the client program passes to the Adaptive Server in the login packet.</p> <p><i>rangename</i></p> <p>is the time range during which the limit is enforced. This must be an existing time range stored in the <code>sysmeranges</code> system table or NULL to delete all resource limits for the specified <i>name</i>, <i>appname</i>, <i>limittype</i>, <i>action</i>, and <i>scope</i>, without regard to <i>rangename</i>.</p> <p><i>limittype</i></p> <p>is the type of resource being limited. This must be one of the following:</p> <ul style="list-style-type: none"> <li>• <code>row_count</code> – drops only limits that restrict the number of rows a query can return.</li> <li>• <code>elapsed_time</code> – drops only limits that restrict the number of seconds that a query batch or transaction can run.</li> <li>• <code>io_cost</code> – drops only limits that restrict actual or estimated query processing cost.</li> <li>• <code>tempdb_space</code> – drops only the limits of the number of tempdb database pages that a single session used or can have.</li> <li>• <code>NULL</code> – drops all resource limits with the specified <i>name</i>, <i>appname</i>, <i>rangename</i>, enforcement time, <i>action</i>, and <i>scope</i>, without regard to <i>limittype</i>.</li> </ul>

*enforced*

determines whether the limit is enforced prior to or during query execution. The following table lists the valid values for each limit type:

Enforced code	Description	Limit type
1	Drops only limits for which action is taken when the estimated cost of execution exceeds the specified limit.	io_cost
2	Drops only limits for which action is taken when the actual row count, elapsed time, or cost of execution exceeds the specified limit.	row_count elapsed_time io_cost
3	Drops only limits for which action is taken when either the estimated cost (1) or the actual cost (2) exceeds the specified limit.	io_cost
NULL	Drops all resource limits with the specified <i>name</i> , <i>appname</i> , <i>rangename</i> , <i>limittype</i> , and <i>scope</i> , without regard to when the <i>action</i> is enforced.	

*action*

is the action taken when the limit is exceeded. This must be one of the following:

Action code	Description
1	Drops only limits that issue a warning.
2	Drops only limits that abort the query batch.
3	Drops only limits that abort the transaction.
4	Drops only limits that kill the session.
NULL	Drops all resource limits with the specified <i>name</i> , <i>appname</i> , <i>rangename</i> , <i>limittype</i> , enforcement time, and <i>scope</i> , without regard to the <i>action</i> they take.

*scope*

is the scope of the limit. This must be one of the following:

Scope code	Description
1	Drops only limits that apply to queries.
2	Drops only limits that apply to query batches.
4	Drops only limits that apply to transactions.
6	Drops only limits that apply to both query batches and transactions.
NULL	Drops all resource limits with the specified <i>name</i> , <i>appname</i> , <i>rangename</i> , <i>limittype</i> , enforcement time, and <i>action</i> , without regard to their <i>scope</i> .

Examples

**Example 1** Drops the single resource limit that kills the session whenever joe’s use of the *payroll* application runs a query during the *friday\_afternoon* time range that results in excessive execution-time I/O cost:

```
sp_drop_resource_limit joe, payroll, friday_afternoon, io_cost, 2, 4, 1
```

---

**Note** If no resource limit matches these selection criteria, `sp_drop_resource_limit` returns without error.

---

**Example 2** Drops all limits that apply to joe’s use of the *payroll* application:

```
sp_drop_resource_limit joe, payroll
```

**Example 3** Drops all limits that apply to the user “joe”:

```
sp_drop_resource_limit joe
```

**Example 4** Drops all resource limits that apply to the *payroll* application:

```
sp_drop_resource_limit NULL, payroll
```

**Example 5** Drops all resource limits on the *payroll* application whose action is to kill the session:

```
sp_drop_resource_limit NULL, payroll, NULL, NULL, NULL, 4, NULL
```

#### Usage

- Use the `sp_help_resource_limit` system procedure to determine which resource limits apply to a given user, application, or time of day.
- When you use `sp_droplogin` to drop an Adaptive Server login, all resource limits associated with that login are also dropped.
- The deletion of a resource limit causes the limits for each session for that login and/or application to be rebound at the beginning of the next query batch for that session.

#### Permissions

Only a System Administrator can execute `sp_drop_resource_limit`.

#### Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

#### See also

**Documents** See the *System Administration Guide* for more information on resource limits.

**System procedures** sp\_add\_resource\_limit, sp\_droplogin,  
sp\_help\_resource\_limit, sp\_modify\_resource\_limit

## sp\_drop\_time\_range

Description	Removes a user-defined time range from Adaptive Server.
Syntax	<code>sp_drop_time_range name</code>
Parameters	<i>name</i> is the name of the time range to be dropped.
Examples	Removes the “evenings” time range:  <code>sp_drop_time_range evenings</code>
Usage	<ul style="list-style-type: none"> <li>You cannot remove the “at all times” time range.</li> <li>You cannot drop a time range if a resource limit exists for that time range.</li> <li>Dropping a time range does not affect the active time ranges for sessions currently in progress.</li> </ul>
Permissions	Only a System Administrator can execute <code>sp_drop_time_range</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **Documents** For more information on time ranges, see the *System Administration Guide*.

**System procedures** `sp_add_resource_limit`, `sp_add_time_range`, `sp_modify_time_range`

## sp\_dropdevice

Description	Drops an Adaptive Server database device or dump device.
Syntax	sp_dropdevice <i>logicalname</i>
Parameters	<i>logicalname</i> is the name of the device as listed in master.dbo.sysdevices.name.
Examples	<p><b>Example 1</b> Drops the device named tape5 from Adaptive Server:</p> <pre>sp_dropdevice tape5</pre> <p><b>Example 2</b> Drops the database device named fredpdata from Adaptive Server. The device must not be in use by any database:</p> <pre>sp_dropdevice fredpdata</pre>
Usage	<ul style="list-style-type: none"> <li>The sp_dropdevice procedure drops a device from Adaptive Server, deleting the device entry from master.dbo.sysdevices.</li> <li>sp_dropdevice does not remove a file that is being dropped as a database device; it makes the file inaccessible to Adaptive Server. Use operating system commands to delete a file after using sp_dropdevice.</li> </ul>
Permissions	Only a System Administrator can execute sp_dropdevice.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>Roles – Current active roles</li> <li>Keywords or options – NULL</li> <li>Previous value – NULL</li> <li>Current value – NULL</li> <li>Other information – All input parameters</li> <li>Proxy information – Original login name, if set proxy in effect</li> </ul>

See also	<p><b>Commands</b> drop database</p> <p><b>System procedures</b> sp_addumpdevice, sp_helpdb, sp_helpdevice</p>
----------	--

## sp\_dropengine

Description	Drops an engine from a specified engine group or, if the engine is the last one in the group, drops the engine group.
Syntax	<code>sp_dropengine engine_number [,engine_group] [,instance_id]</code>
Parameters	<p><i>engine_number</i> is the number of the engine you are dropping from the group. Values are between 0 and a maximum equal to the number of configured online engines, minus one.</p> <p><i>engine_group</i> is the name of the engine group from which to drop the engine.</p> <p><i>instance_id</i> <i>in cluster environments</i> – is the ID of the instance from which you are dropping an engine or engine group.</p>
Examples	<p><b>Example 1</b> Drops engine number 2 from the group called DS_GROUP. If it is the last engine in the group, the group is also dropped:</p> <pre>sp_dropengine 2, DS_GROUP</pre> <p><b>Example 2</b> <i>In cluster environments</i> – drops engine number 5 from instance id 8:</p> <pre>sp_dropengine 5, 8</pre>
Usage	<ul style="list-style-type: none"> <li>• <code>sp_dropengine</code> can be invoked only from the master database.</li> <li>• If <i>engine_number</i> is the last engine in <i>engine_group</i>, Adaptive Server also drops <i>engine_group</i>.</li> <li>• <i>In cluster environments</i> – if <code>sp_cluster</code> set <i>system_view</i> is set to cluster, you can drop an engine or engine group from any instance in the cluster. If the <i>system_view</i> is set to instance, you can drop an engine or engine group only from a local instance.</li> <li>• The <i>engine_number</i> you specify must exist in <i>engine_group</i>.</li> </ul>
Permissions	Only a System Administrator can execute <code>sp_dropengine</code> .
Auditing	Values in event and extrainfo columns from the sysaudits table are:

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also

**System procedures** sp\_addengine



## sp\_dropexeclass

Description	Drops a user-defined execution class.
Syntax	<code>sp_dropexeclass <i>classname</i></code>
Parameters	<i>classname</i> is the name of the user-defined execution class to be dropped.
Examples	This statement drops the user-defined execution class DECISION:  <pre>sp_dropexeclass 'DECISION'</pre>
Usage	<ul style="list-style-type: none"> <li>An execution class helps define the execution precedence used by Adaptive Server to process tasks. See the <i>Performance and Tuning Guide</i> for more information on execution classes and execution attributes.</li> <li><i>classname</i> must not be bound to any client application, login, or stored procedure. Unbind the execution class first, using <code>sp_unbindexeclass</code>, then drop the execution class, using <code>sp_dropexeclass</code>.</li> <li>You cannot drop system-defined execution classes.</li> </ul>
Permissions	Only a System Administrator can execute <code>sp_dropexeclass</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also	<b>System procedures</b> <code>sp_addexeclass</code> , <code>sp_bindexeclass</code> , <code>sp_showexeclass</code> , <code>sp_unbindexeclass</code>
----------	---

## sp\_dropextendedproc

Description	Removes an extended stored procedure (ESP).
Syntax	sp_dropextendedproc <i>esp_name</i>
Parameters	<i>esp_name</i> is the name of the extended stored procedure to be dropped.
Examples	Removes xp_echo:  sp_dropextendedproc xp_echo
Usage	<ul style="list-style-type: none"> <li>• sp_dropextendedproc must be executed from the master database.</li> <li>• The <i>esp_name</i> is case-sensitive. It must precisely match the name with which the ESP was created.</li> </ul>
Permissions	Only a System Administrator can execute sp_dropextendedproc.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also	<p><b>Commands</b> drop procedure</p> <p><b>System procedures</b> sp_addextendedproc, sp_freelld, sp_helpextendedproc</p>
----------	---

## sp\_dropexternlogin

Description	<b>Component Integration Services only</b> Drops the definition of a remote login previously defined by <code>sp_addexternlogin</code> .
Syntax	<code>sp_dropexternlogin server [, loginame [, rolename ]]</code>
Parameters	<p><i>server</i> is the name of the remote server from which the local server is dropping account access. The remote server is known to the local server by an entry in the <code>master.dbo.sys.servers</code> table.</p> <p><i>loginame</i> is a login account known to the local server. If <i>loginame</i> is not specified, the current account is used. <i>loginame</i> must exist in the <code>master.dbo.syslogins</code> table.</p> <p><i>rolename</i> is the Adaptive Server user's assigned role.</p>
Examples	<p><b>Example 1</b> Drops the definition of an external login to the remote server CIS1012 from "bobj". Only the "bobj" account and the "sa" account can add or modify a remote login for "bobj":</p> <pre>sp_dropexternlogin CIS1012, bobj</pre> <p><b>Example 2</b> Drops the definition of an external login to the remote server SSB from users with the <code>sa_role</code>:</p> <pre>sp_dropexternlogin SSB, NULL, sa_role</pre>
Usage	<ul style="list-style-type: none"> <li>• <code>sp_dropexternlogin</code> drops the definition of a remote login previously defined to the local server by <code>sp_addexternlogin</code>.</li> <li>• You cannot execute <code>sp_dropexternlogin</code> from within a transaction.</li> <li>• The remote server must be defined to the local server by <code>sp_addserver</code>.</li> <li>• To add and drop local server users, use the system procedures <code>sp_addalias</code> and <code>sp_droplogin</code>.</li> </ul>
Permissions	Only <i>loginame</i> or a System Administrator can execute <code>sp_dropexternlogin</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also

**System procedures** sp\_addexternlogin, sp\_helpexternlogin, sp\_addlogin, sp\_droplogin

## sp\_dropglockpromote

Description	Removes lock promotion values from a table or database.
Syntax	<code>sp_dropglockpromote {"database"   "table"}, objname</code>
Parameters	<p><code>database   table</code>  specifies whether to remove the lock promotion thresholds from a database or table. The quotes are required because these are Transact-SQL keywords.</p> <p><code>objname</code>  is the name of the table or database from which to remove the lock promotion thresholds.</p>
Examples	Removes the lock promotion values from titles. Lock promotion for titles now uses the database or server-wide values:
Usage	<pre>sp_dropglockpromote "table", titles</pre> <ul style="list-style-type: none"> <li>• Use <code>sp_dropglockpromote</code> to drop lock promotion values set with <code>sp_setpglockpromote</code>.</li> <li>• When you drop a database's lock promotion thresholds, tables that do not have lock promotion thresholds configured will use the server-wide values.</li> <li>• When a table's values are dropped, Adaptive Server uses the database's lock promotion thresholds if they are configured or the server-wide values if they are not.</li> <li>• Server-wide values can be changed with <code>sp_setpglockpromote</code>, but cannot be dropped.</li> </ul>
Permissions	Only a System Administrator can execute <code>sp_dropglockpromote</code> .
Auditing	Values in event and extrainfo columns from the <code>sysaudits</code> table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_setpglockpromote`

## sp\_dropgroup

Description	Drops a group from a database.
Syntax	sp_dropgroup <i>grpname</i>
Parameters	<i>grpname</i> is the name of a group in the current database.
Examples	The “purchasing” group has merged with the “accounting” group. These commands move “martha” and “george”, members of the “purchasing” group, to other groups before dropping the group. The group name “public” is quoted because “public” is a reserved word:  <pre>sp_changegroup accounting, martha sp_changegroup "public", george sp_dropgroup purchasing</pre>
Usage	<ul style="list-style-type: none"> <li>• Executing sp_dropgroup drops a group name from a database’s sysusers table.</li> <li>• You cannot drop a group if it has members. You must execute sp_changegroup for each member before you can drop the group.</li> </ul>
Permissions	Only the Database Owner, a System Administrator, or a System Security Officer can execute sp_dropgroup.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** sp\_addgroup, sp\_changegroup, sp\_helpgroup

## sp\_dropkey

Description	Removes from the syskeys table a key that had been defined using <code>sp_primarykey</code> , <code>sp_foreignkey</code> , or <code>sp_commonkey</code> .
Syntax	<code>sp_dropkey keytype, tablename [, deptabname]</code>
Parameters	<p><i>keytype</i> is the type of key to be dropped. The <i>keytype</i> must be primary, foreign, or common.</p> <p><i>tablename</i> is the name of the key table or view that contains the key to be dropped.</p> <p><i>deptabname</i> specifies the name of the second table in the relationship, if the <i>keytype</i> is foreign or common. If the <i>keytype</i> is primary, this parameter is not needed, since primary keys have no dependent tables. If the <i>keytype</i> is foreign, this is the name of the primary key table. If the <i>keytype</i> is common, give the two table names in the order in which they appear with <code>sp_helpkey</code>.</p>
Examples	<p><b>Example 1</b> Drops the primary key for the employees table. Any foreign keys that were dependent on the primary key for employees are also dropped:</p> <pre>sp_dropkey primary, employees</pre> <p><b>Example 2</b> Drops the common keys between the employees and projects tables:</p> <pre>sp_dropkey common, employees, projects</pre> <p><b>Example 3</b> Drops the foreign key between the titleauthor and titles tables:</p> <pre>sp_dropkey foreign, titleauthor, titles</pre>
Usage	<ul style="list-style-type: none"> <li>• Executing <code>sp_dropkey</code> deletes the specified key from syskeys. Only the owner of a table can drop a key from that table.</li> <li>• Keys are created to make explicit a logical relationship that is implicit in your database design. This information can be used by an application.</li> <li>• Dropping a primary key automatically drops any foreign keys associated with it. Dropping a foreign key has no effect on a primary key specified on that table.</li> <li>• Executing <code>sp_commonkey</code>, <code>sp_primarykey</code>, or <code>sp_foreignkey</code> adds the key to the syskeys system table. To display a report on the keys that have been defined, execute <code>sp_helpkey</code>.</li> </ul>
Permissions	Only the owner of <i>tablename</i> can execute <code>sp_dropkey</code> .

Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

<b>Event</b>	<b>Audit option</b>	<b>Command or access audited</b>	<b>Information in extrainfo</b>
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul>

See also

**System procedures** sp\_commonkey, sp\_foreignkey, sp\_helpkey, sp\_primarykey



## sp\_droplanguage

Description	Drops an alternate language from the server and removes its row from master.dbo.syslanguages.
Syntax	sp_droplanguage <i>language</i> [, dropmessages]
Parameters	<p><i>language</i> is the official name of the language to be dropped.</p> <p>dropmessages drops all Adaptive Server system messages in <i>language</i>. You cannot drop a language with associated system messages without also dropping its messages.</p>
Examples	<p><b>Example 1</b> This example drops French from the available alternate languages, if there are no associated messages:</p> <pre>sp_droplanguage french</pre> <p><b>Example 2</b> This example drops French from the available alternate languages, if there are associated messages:</p> <pre>sp_droplanguage french, dropmessages</pre>
Usage	<ul style="list-style-type: none"> <li>Executing sp_droplanguage drops a language from a list of alternate languages by deleting its entry from the master.dbo.syslanguages table.</li> <li>If you try to drop a language that has system messages, the request fails unless you supply the dropmessages parameter.</li> </ul>
Permissions	Only a System Administrator can execute sp_droplanguage.
Auditing	Values in event and extrainfo columns from the sysaudits table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	exec_procedure	Execution of a procedure	<ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** sp\_addlanguage, sp\_helplanguage

## sp\_droplogin

Description	Drops an Adaptive Server user login by deleting the user's entry from master.dbo.syslogins.
Syntax	sp_droplogin <i>loginame</i>
Parameters	<i>loginame</i> is the name of the user, as listed in master.dbo.syslogins.
Examples	Drops the "victoria" login from Adaptive Server: <pre>sp_droplogin victoria</pre>
Usage	<ul style="list-style-type: none"><li>• If sp_cleanpwdchecks is present in the master database, it is executed after dropping a login with sp_droplogin.</li><li>• Executing sp_droplogin drops a user login from Adaptive Server, deleting the user's entry from master.dbo.syslogins.</li><li>• Adaptive Server reuses a dropped login's server user ID, which compromises accountability. You can avoid dropping accounts entirely and, instead, use sp_locklogin to lock any accounts that will no longer be used.</li></ul> <p>If you need to drop logins, be sure to audit these events (using sp_audit) so that you have a record of them.</p> <ul style="list-style-type: none"><li>• sp_droplogin deletes all resource limits associated with the dropped login.</li><li>• sp_droplogin fails if the login to be dropped is a user in any database on the server. Use sp_dropuser to drop the user from a database. You cannot drop a user from a database if that user owns any objects in the database.</li></ul> <p>Regardless, the login is dropped if the database is offline.</p> <ul style="list-style-type: none"><li>• If the login to be dropped is a System Security Officer, sp_droplogin verifies that at least one other unlocked System Security Officer's account exists. If not, sp_droplogin fails. Similarly, sp_droplogin ensures that there is always at least one unlocked System Administrator account.</li><li>• When sp_droplogin is unable to drop a login due to the existence—in any database—of a user in sysusers referencing the login suid, the names of databases in which the references are found are now displayed in the error message. The error message looks similar to:</li></ul> <pre>1&gt; sp_droplogin probe 2&gt; go Msg 19587, Level 16, State 1: Procedure 'sp_droplogin', Line 281:</pre>

```
User exists or is an alias or is a database owner in
'master' 'sybssystemdb' database(s) .
(return status = 1)
```

Permissions Only a System Security Officer can execute `sp_droplogin`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

Event	Audit option	Command or access audited	Information in extrainfo
38	<code>exec_procedure</code>	Execution of a procedure	<ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>

See also **System procedures** `sp_addlogin`, `sp_audit`, `sp_cleanpwdchecks`, `sp_dropuser`, `sp_locklogin`

## sp\_dropmessage

- Description** Drops user-defined messages from sysusermessages.
- Syntax** sp\_dropmessage *message\_num* [, *language*]
- Parameters** *message\_num*  
 is the message number of the message to be dropped. Message numbers must have a value of 20000 or higher.
- language*  
 is the language of the message to be dropped.
- Examples** Removes the French version of the message with the number 20002 from sysusermessages:
- ```
sp_dropmessage 20002, french
```
- Usage**
- The *language* parameter is optional. If included, only the message with the indicated *message\_num* in the indicated language is dropped. If you do not specify a *language*, all messages with the indicated *message\_num* are dropped.
- Permissions** Only the Database Owner, a System Administrator, or the user who created the message being dropped can execute sp\_dropmessage.
- Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 32    | drop           | sp_dropmessage            | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – Message number</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>       |
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_addmessage, sp\_getmessage

## sp\_dropobjectdef

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Component Integration Services only</b> Deletes the external storage mapping provided for a local object.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | sp_dropobjectdef <i>tablename</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <p><i>tablename</i></p> <p>has the form <i>dbname.owner.object</i>, where:</p> <ul style="list-style-type: none"> <li>• <i>dbname</i> is the name of the database containing the object whose storage location you are dropping. <i>dbname</i> is optional; if present, it must be the current database, and the <i>owner</i> or a placeholder is required.</li> <li>• <i>owner</i> is the name of the owner of the object whose storage location you are dropping. <i>owner</i> is optional; it is required if <i>dbname</i> is specified.</li> <li>• <i>object</i> is the name of the local table for which external storage mapping is to be dropped.</li> </ul>                     |
| Examples    | <p><b>Example 1</b> Deletes the entry from sysattributes that provided the external storage mapping for a table known to the server as the colleges table in database personnel:</p> <pre>sp_dropobjectdef "personnel.dbo.colleges"</pre> <p><b>Example 2</b> Deletes the entry from sysattributes that provided the external storage mapping for the andrea.fishbone object, where andrea is the owner and the local table name is fishbone:</p> <pre>sp_dropobjectdef "andrea.fishbone"</pre>                                                                                                                                                                                         |
| Usage       | <ul style="list-style-type: none"> <li>• sp_dropobjectdef deletes the external storage mapping provided for a local object. It replaces sp_droptabledef.</li> <li>• Use sp_dropobjectdef after dropping a remote table with drop table.</li> <li>• Dropping a table does not remove the mapping information from the sysattributes table if it was added using sp_addobjectdef. It must be explicitly removed using sp_dropobjectdef.</li> <li>• The <i>tablename</i> can be in any of these forms: <ul style="list-style-type: none"> <li>• <i>object</i></li> <li>• <i>owner.object</i></li> <li>• <i>dbname..object</i></li> <li>• <i>dbname.owner.object</i></li> </ul> </li> </ul> |

**Permissions** Only the Database Owner or a System Administrator can execute sp\_dropobjectdef. Only a System Administrator can execute sp\_dropobjectdef to remove mapping information for another user's object.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                          |                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------|---------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>audited</b>           | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
| 38                       | exec_procedure      | Execution of a procedure | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

**See also** **Commands** create existing table, create table, drop table

**System procedures** sp\_addobjectdef

## sp\_dropremotelogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Drops a remote user login.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <code>sp_dropremotelogin remoteserver [, loginame [, remotename] ]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Parameters  | <p><i>remoteserver</i><br/>is the name of the server that has the remote login to be dropped.</p> <p><i>loginame</i><br/>is the local server's user name that is associated with the remote server in the sysremotelogins table.</p> <p><i>remotename</i><br/>is the remote user name that gets mapped to <i>loginame</i> when logging in from the remote server.</p>                                                                                                                                         |
| Examples    | <p><b>Example 1</b> Drops the entry for the remote server named GATEWAY:</p> <pre>sp_dropremotelogin GATEWAY</pre> <p><b>Example 2</b> Drops the entry for mapping remote logins from the remote server GATEWAY to the local user named "churchy":</p> <pre>sp_dropremotelogin GATEWAY, churchy</pre> <p><b>Example 3</b> Drops the login for the remote user "pogo" on the remote server GATEWAY that was mapped to the local user named "churchy":</p> <pre>sp_dropremotelogin GATEWAY, churchy, pogo</pre> |
| Usage       | <ul style="list-style-type: none"> <li>• Executing <code>sp_dropremotelogin</code> drops a user login from a remote server, deleting the user's entry from <code>master.dbo.sysremotelogins</code>.</li> <li>• For a more complete discussion on remote logins, see <code>sp_addremotelogin</code>.</li> <li>• To add and drop local server users, use the system procedures <code>sp_addlogin</code> and <code>sp_droplogin</code>.</li> </ul>                                                               |
| Permissions | Only a System Administrator can execute <code>sp_dropremotelogin</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addlogin, sp\_addremotelogin, sp\_addserver, sp\_droplogin, sp\_helpremotelogin, sp\_helpserver



## sp\_drowlockpromote

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Removes row lock promotion threshold values from a database or table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | <code>sp_drowlockpromote {"database"   "table"}, objname</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Parameters  | <p><code>database   table</code><br/> specifies whether to remove the row lock promotion thresholds from a database or table.</p> <p><i>objname</i><br/> is the name of the database or table from which to remove the row lock promotion thresholds.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Examples    | <p>Removes the row lock promotion values from the sales table. Lock promotion for sales now uses the database or server-wide values:</p> <pre>sp_drowlockpromote "table", "sales"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Usage       | <ul style="list-style-type: none"> <li>• Use <code>sp_drowlockpromote</code> to drop row lock promotion values set with <code>sp_setrowlockpromote</code>.</li> <li>• When you drop a database's row lock promotion thresholds, datarows-locked tables that do not have row lock promotion thresholds configured use the server-wide values. Use <code>sp_configure</code> to check the value of the row lock promotion configuration parameters.</li> <li>• When a table's row lock promotion values are dropped, Adaptive Server uses the database's row lock promotion thresholds, if they are configured, or the server-wide values, if no thresholds are set for the database.</li> <li>• To change the lock promotion thresholds for a database, you must be using the master database. To change the lock promotion thresholds for a table in a database, you must be using the database where the table resides.</li> <li>• Server-wide values can be changed with <code>sp_setrowlockpromote</code>. This changes the values in the row lock promotion configuration parameters, so there is no corresponding server option for <code>sp_drowlockpromote</code>.</li> </ul> |
| Permissions | Only a System Administrator can execute <code>sp_drowlockpromote</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**System procedures** sp\_setrowlockpromote

## sp\_dropsegment

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Drops a segment from a database or unmaps a segment from a particular database device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | <code>sp_dropsegment <i>segname</i>, <i>dbname</i> [, <i>device</i>]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><i>segname</i><br/>is the name of the segment to be dropped.</p> <p><i>dbname</i><br/>is the name of the database from which the segment is to be dropped.</p> <p><i>device</i><br/>is the name of the database device from which the segment <i>segname</i> is to be dropped. This parameter is optional, except when the system segment <code>system</code>, <code>default</code>, or <code>logsegment</code> is being dropped from a database device.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Examples    | <p><b>Example 1</b> This command drops the segment <code>indexes</code> from the <code>pubs2</code> database.</p> <pre>sp_dropsegment indexes, pubs2</pre> <p><b>Example 2</b> This command unmaps the segment <code>indexes</code> from the database device <code>dev1</code>:</p> <pre>sp_dropsegment indexes, pubs2, dev1</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Usage       | <ul style="list-style-type: none"> <li>You can drop a segment if it is not referenced by any table, index, or partition in the specified database.</li> <li>If you do not supply the optional argument <i>device</i>, the segment is dropped from the specified database. If you do supply a <i>device</i> name, the segment is no longer mapped to the named database device, but the segment is not dropped.</li> <li>Dropping a segment drops all thresholds associated with that segment.</li> <li>You can only execute <code>sp_dropsegment</code> for the <code>logsegment</code> system segment in single-user mode.</li> </ul> <hr/> <p><b>Note</b> This command may take a long time to complete in in very large databases.</p> <hr/> <ul style="list-style-type: none"> <li>When you unmap a segment from one or more devices, Adaptive Server drops any thresholds that exceed the total space on the segment. When you unmap the <code>logsegment</code> from one or more devices, Adaptive Server recalculates the last-chance threshold.</li> </ul> |

- sp\_placeobject changes future space allocations for a table or index from one segment to another, and removes the references from the original segment. After using sp\_placeobject, you can drop the original segment name with sp\_dropsegment.
- For the system segments system, default, and logsegment, you must specify the device name from which you want the segments dropped.

Permissions

Only the Database Owner or a System Administrator can execute sp\_dropsegment.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Command or access |                |                           |                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event             | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
| 38                | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addsegment, sp\_addthreshold, sp\_helpsegment, sp\_helpthreshold, sp\_placeobject

## sp\_dropserver

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Drops a server from the list of known servers or drops remote logins and external logins in the same operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Syntax      | <code>sp_dropserver server [, droplogins]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><i>server</i><br/>is the name of the server to be dropped.</p> <p><i>droplogins</i><br/>indicates that any remote logins for <i>server</i> should also be dropped.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Examples    | <p><b>Example 1</b> This command drops the remote server GATEWAY:</p> <pre>sp_dropserver GATEWAY</pre> <p><b>Example 2</b> Drops the entry for the remote server RDBAM_ALPHA and drops all remote logins and external logins for that server:</p> <pre>sp_dropserver RDBAM_ALPHA, droplogins</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Usage       | <ul style="list-style-type: none"> <li>• Executing <code>sp_dropserver</code> drops a server from the list of known servers by deleting the entry from the <code>master.dbo.sys.servers</code> table.</li> <li>• Running <code>sp_dropserver</code> on a server that has associated entries in the <code>master.dbo.sysremotelogins</code> table results in an error message stating that you must drop the remote users before you can drop the server. To drop all remote logins for a server when dropping the server, use <code>droplogins</code>.</li> <li>• Running <code>sp_dropserver</code> without <code>droplogins</code> against a server that has associated entries in the <code>sysattributes</code> table results in an error. You must drop the remote logins and external logins before you can drop the server.</li> <li>• The checks against <code>sysattributes</code> for external logins and for default mapping to a server apply when Component Integration Services is configured.</li> </ul> |
| Permissions | Only a System Security Officer can execute <code>sp_dropserver</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Auditing    | Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addserver, sp\_dropremotelogin, sp\_helpremotelogin, sp\_helpserver

## sp\_droptreshold

|             |                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Removes a free-space threshold from a segment.                                                                                                                                                                                                                                                                                                                            |
| Syntax      | <code>sp_droptreshold dbname, segname, free_space</code>                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>dbname</i><br/>is the database from which you are dropping the threshold. This must be the name of the current database.</p> <p><i>segname</i><br/>is the segment whose free space is monitored by the threshold. Use quotes when specifying the “default” segment.</p> <p><i>free_space</i><br/>is the number of free pages at which the threshold is crossed.</p> |
| Examples    | <p>Removes a threshold from segment1 of mydb. You must specify the database, segment, and amount of free space to identify the threshold:</p> <pre>sp_droptreshold mydb, segment1, 200</pre>                                                                                                                                                                              |
| Usage       | <ul style="list-style-type: none"> <li>You cannot drop the last-chance threshold from the log segment.</li> <li>You can use the no free space acctg option of sp_dboption as an alternative to sp_droptreshold. This option disables free-space accounting on non-log segments. You cannot disable free-space accounting on log segments.</li> </ul>                      |
| Permissions | Only the Database Owner or a System Administrator can execute sp_droptreshold.                                                                                                                                                                                                                                                                                            |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                       |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

|          |                                                                                             |
|----------|---------------------------------------------------------------------------------------------|
| See also | <b>System procedures</b> sp_addthreshold, sp_dboption, sp_helpthreshold, sp_thresholdaction |
|----------|---------------------------------------------------------------------------------------------|

## sp\_droptype

|             |                                                                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Drops a user-defined datatype.                                                                                                                                                                                                          |
| Syntax      | sp_droptype <i>typename</i>                                                                                                                                                                                                             |
| Parameters  | <i>typename</i><br>is the name of a user-defined datatype that you own.                                                                                                                                                                 |
| Examples    | Drops the user-defined datatype named birthday:<br><br><code>sp_droptype birthday</code>                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"> <li>• Executing sp_droptype deletes a user-defined datatype from systypes.</li> <li>• A user-defined datatype cannot be dropped if it is referenced by tables or another database object.</li> </ul> |
| Permissions | Only the Database Owner or datatype owner can execute sp_droptype.                                                                                                                                                                      |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                     |

| Command or access |                |                           |                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event             | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
| 38                | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

|          |                                                |
|----------|------------------------------------------------|
| See also | <b>Datatypes</b> User-defined datatypes        |
|          | <b>System procedures</b> sp_addtype, sp_rename |



## sp\_dropuser

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Drops a user from the current database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <code>sp_dropuser name_in_db</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <i>name_in_db</i><br>is the user's name in the current database's sysusers table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Examples    | Drops the user "albert" from the current database. The user "albert" can no longer use the database:<br><br><code>sp_dropuser albert</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"> <li>• <code>sp_dropuser</code> drops a user from the current database by deleting the user's row from sysusers.</li> <li>• You cannot drop a user who owns objects in the database.</li> <li>• You cannot drop a user who has granted permissions to other users.</li> <li>• You cannot drop the Database Owner from a database.</li> <li>• If other users are aliased to the user being dropped, their aliases are also dropped. They no longer have access to the database.</li> <li>• You cannot drop a user from a database if the user owns a stored procedure that is bound to an execution class in that database. See <code>sp_bindexeclss</code>.</li> <li>• <code>sp_dropuser</code> drops all key copies from sysencryptkeys for the specified user in the current database. <code>sp_dropuser</code> fails if the user owns an encryption key in any database. See the <i>Users Guide for Encrypted Columns</i>.</li> </ul> |
| Permissions | Only the Database Owner, a System Administrator, or a System Security Officer can execute <code>sp_dropuser</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** grant, revoke, use

**System procedures** sp\_addalias, sp\_adduser, sp\_bindexclass,  
sp\_droplogin

## sp\_dumpoptimize

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Specifies the amount of data dumped by Backup Server during the dump database operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Syntax      | <pre>sp_dumpoptimize [ 'archive_space = {maximum   minimum   default }' ] sp_dumpoptimize [ 'reserved_threshold = {nnn   default }' ] sp_dumpoptimize [ 'allocation_threshold = {nnn   default }' ]</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Parameters  | <p><b>archive_space</b><br/>specifies the amount of the database you want dumped.</p> <p><b>maximum</b><br/>dumps the whole database without determining which pages are allocated or not. The total space used by the archive image or images is equal to the size of the database. Using this option has the same effect as using the options <code>reserved_threshold=0</code> and <code>allocation_threshold=0</code>.</p> <p><b>minimum</b><br/>dumps only the allocated pages, which results in the smallest possible archive image. This option is useful when dumping to archive devices for which the throughput is much smaller than that of the database devices such as QIC tape drives. Using this option has the same effect as using the options <code>reserved_threshold=100</code> and <code>allocation_threshold=100</code>.</p> <p><b>default</b><br/>specifies that default values should be used. When used with:</p> <ul style="list-style-type: none"> <li>• <code>archive_space</code> – this option dumps the database with the <code>reserved_threshold</code> and <code>allocation_threshold</code> options set to their default values. Use this to reset Backup Server to the default configuration.</li> <li>• <code>reserved_threshold</code> – default specifies 85 percent.</li> <li>• <code>allocation_threshold</code> – default specifies 40 percent.</li> </ul> <p><b>reserved_threshold</b><br/>dumps all the pages belonging to the database in a database disk if the percentage of reserved pages in the disk is equal to or greater than <i>nnn</i>. For example, if you specify <i>nnn</i> as 60 and if a database disk has a percentage of reserved pages equal to or greater than 60 percent, then the entire disk is dumped without determining which pages within that disk are allocated. The default for this option is 85 percent.</p> |

*nnn*

an integer value between 0 and 100 that represents the value of the threshold. It is used to determine how much data to dump.

When used with `reserved_threshold`, if the percentage of reserved pages in the disk is greater than the value specified, all the pages of the database in a database disk are dumped.

When used with `allocation_threshold`, if the percentage of allocated pages in an allocation unit is greater than the percentage specified for `allocation_threshold`, all the pages within an allocation unit are dumped.

`allocation_threshold`

dumps all the pages in the allocation unit if the percentage of allocated pages in the unit is equal to or greater than *nnn*. For example, if *nnn* is specified as 70 and if the percentage of allocated pages in an allocation unit is equal to or greater than 70 percent, then the entire allocation unit is dumped without determining whether pages within that allocation unit are allocated or not. If the `reserved_threshold` setting causes the whole disk to be dumped, the `allocation_threshold` setting is ignored for the disk. The default for this option is 40 percent.

## Examples

**Example 1** This causes the whole database to be dumped:

```
sp_dumpoptimize 'archive_space=maximum'
```

```
Backup Server: 4.172.1.1: The value of 'reserved pages threshold' has been set to 0%.
```

```
Backup Server: 4.172.1.2: The value of 'allocated pages threshold' has been set to 0%.
```

**Example 2** This causes only the allocated pages to be dumped, thereby resulting in the smallest archive image:

```
sp_dumpoptimize 'archive_space=minimum'
```

```
Backup Server: 4.172.1.1: The value of 'reserved pages threshold' has been set to 100%.
```

```
Backup Server: 4.172.1.2: The value of 'allocated pages threshold' has been set to 100%.
```

**Example 3** This causes the reserved threshold to be set to 85 percent and the allocation threshold to be set to 40 percent:

```
sp_dumpoptimize 'archive_space=default'
```

```
Backup Server: 4.172.1.1: The value of 'reserved pages threshold' has been set to 85%.
```

```
Backup Server: 4.172.1.2: The value of 'allocated pages threshold' has been set to 40%.
```

**Example 4** Those disks in the database with a percentage of reserved pages that is greater than or equal to 60 percent are dumped without reading allocation pages on this disk. For the remaining disks, the allocation pages are read, and the last set value for the `allocation_threshold` is used. If the `allocation_threshold` was not set after Backup Server was started, default `allocation_threshold` of 40 percent is used:

```
sp_dumpoptimize 'reserved_threshold=60'
```

Backup Server: 4.172.1.3: The value of 'reserved pages threshold' has been set to 60%.

**Example 5** Causes the reserved threshold to be set to 85 percent. It does not affect the allocation page threshold:

```
sp_dumpoptimize 'reserved_threshold=default'
```

Backup Server: 4.172.1.3: The value of 'reserved pages threshold' has been set to 85%.

**Example 6** Allocation pages are read for those disks whose reserved page percentage is less than the last set value for the `reserved_threshold` and if an allocation unit has 80 percent or more pages allocated, then the whole allocation unit is dumped:

```
sp_dumpoptimize 'allocation_threshold=80'
```

Backup Server: 4.172.1.4: The value of 'allocated pages threshold' has been set to 80%.

**Example 7** Causes the allocation page threshold to be set to the default of 40 percent. It does not affect the reserved pages threshold:

```
sp_dumpoptimize 'allocation_threshold=default'
```

Backup Server: 4.172.1.4: The value of 'allocated pages threshold' has been set to 40%.

**Example 8** Those disks in the database whose percentage of reserved pages is greater than or equal to 60 percent are dumped without reading allocation pages on this disk. For the remaining disks, the allocation pages are read and if an allocation unit has 30 percent or more pages allocated, then the whole allocation unit is dumped:

```
sp_dumpoptimize 'reserved_threshold=60', 'allocation_threshold=30'
```

Backup Server: 4.172.1.3: The value of 'reserved pages threshold' has been set to 60%.

Backup Server: 4.172.1.4: The value of 'allocated pages threshold' has been set to 30%.

**Example 9** This displays the current value of the thresholds:

```
sp_dumpoptimize
```

```
Backup Server: 4.171.1.1: The current value of 'reserved pages threshold'  
is 60%
```

```
Backup Server: 4.171.1.2: The current value of 'allocated pages threshold'  
is 30%.
```

Usage

- When you set a threshold using `sp_dumpoptimize`, this threshold acts on each individual device that the database resides on.
- When you set values with `sp_dumpoptimize`, those values are immediately in affect without the need to restart Backup Server. However, the changes are effective only until the Backup Server is restarted. When Backup Server is restarted, the default values are used.
- If you issue `sp_dumpoptimize` multiple times, the thresholds specified by the last instance are used by later dumps. For example, if you first set the `reserved_threshold` value, and later issue `archive_space=maximum`, then that value overwrites the previous value you set for `reserved_threshold`.
- Dumps of different databases can use different thresholds by changing the `sp_dumpoptimize` values before each database dump.
- The optimal threshold values can vary from one database to another. Therefore, the performance of a dump depends on both the I/O configuration and the amount of used space in the database. The DBA can determine the appropriate configuration for a database by experimenting with dumps using different values and choosing the one that results in the shortest dump time.
- You can use `sp_dumpoptimize` for both local and remote dumps.
- `sp_dumpoptimize` has no effect on the performance of a transaction log dump or a load. Therefore, it need not be issued before dump transaction, load database or load transaction operations.
- If `sp_dumpoptimize` is issued without any parameters, the current value of the thresholds is displayed on the client.
- On configurations in which the archive device throughput is equal to or higher than the cumulative throughput of all the database disks, using `archive_space=maximum` may result in a faster dump. However, on configurations in which the archive device throughput is less than the cumulative throughput of all the database disks, using this option may result in a slower dump.

- The option names and the values for this procedure can be abbreviated to the unique substring that identifies them. For example, ar = ma is sufficient to uniquely identify the option archive\_space=maximum.
- There can be zero or more blank space characters around the equal sign (=) in the option string.
- The option names and their values are case insensitive.

**Thresholds**

The default values for the thresholds are:

- Reserved pages: 85%
- Allocation pages: 40%

If the device fragment of the database has a reserved pages percentage that is:

- Greater than or equal to the reserved threshold – then all the blocks on this device that pertain to this database are dumped.
- Less than the reserved threshold – then Backup Server starts checking each allocation unit on this device for the allocation percentage. If the cumulative allocation percentage is:
  - Less than the allocation threshold – then it would only dump those pages with data written on it
  - Greater than the allocation threshold – then whole allocation unit would be dumped.

**Permissions**

Only the System Administrator, the Database Owner, or users with the Operator role can execute sp\_dumpoptimize.

**Auditing**

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also**

**Documents** See the *System Administration Guide* for information on allocation pages.

**Commands** dump database, dump transaction, load database, load transaction



## sp\_encryption

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports encryption information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | <pre>sp_encryption help   helpkey sp_encryption help   helpkey [, key_name   wildcard]                         [, all_dbs   key_copy   display_cols] sp_encryption help   helpkey [, system_encr_passwd]                         [, display_keys] sp_encryption helpcol [, table_name   column_name ] sp_encryption helpuser [, user_name   wildcard ][, key_copy] sp_encryption system_encr_passwd, 'newpasswd' [, 'oldpasswd']</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Parameters  | <p><b>helpkey</b><br/>lists encryption key properties, including:</p> <ul style="list-style-type: none"> <li>• Whether the database contains encryption keys.</li> <li>• The following, when run by a user with sso_role, key custodian, or DBO: keyname, keyowner, key length, key algorithm, key type, pad, initialization vector, type of password used to encrypt the key, whether key recovery has been enabled and count of key copies. The output is sorted on owner.keyname. When run by a non-privileged user, this command will list keyname, keyowner and keytype.</li> </ul> <p><b>help</b><br/>included for backward compatibility. Includes the same output as helpkey</p> <p><b>key_name</b><br/>name of the key you are investigating. Lists the properties defined for <i>key_name</i>. If <i>key_name</i> is omitted, lists properties for all keys.</p> <p><b>wildcard</b><br/>lists the properties for keys matching the wildcard pattern in the current database. See the <i>Reference Manual: Building Blocks</i> for information about using wildcards.</p> <p><b>all_dbs</b><br/>lists information on encryption keys in all available databases. Only the SSO can run all_dbs.</p> |

key\_copy

lists all user copies for the specified key in the current database. The output is sorted by *key\_owner.key\_name*. Includes information about:

- The base key owner.
- If the key copy is a recovery key copy.
- The user to whom a copy belongs.
- If the copy is encrypted with a user-encryption password, a login password, or the system encryption password for login association (indicated by Login Access).

display\_cols

displays the key name, all keys (or matching wildcard keys) in the current database and the columns the key encrypts. When SSO includes *display\_cols*, it displays columns encrypted by the keys across all available databases. When a user without the *sso\_role* runs *display\_cols*, only those columns encrypted by the key in the current database are displayed. Data is sorted by *key\_name*, *key\_owner*, *database\_name*, *table\_owner*, *table\_name*, and *column\_name*.

helpcol *column\_name*

displays the column name and the key used to encrypt the column. If the SSO includes *helpcol*, it prints the key name even if the key is not present in the current database. If a non-SSO user includes *helpcol*, Adaptive Server prints the *keyid* of the key if it is not present in the current database, omitting the *key\_name*. The output includes: *owner.table.column*, *database.owner.keyname*. The information is sorted by *owner.table.column*.

helpuser

displays the keys owned by or assigned to a user in the current database.

system\_encr\_passwd

displays the keys and key copies that are encrypted using the system encryption password in the current database.

system\_encr\_passwd, all\_dbs

displays the properties of the system encryption password in every database where it has been set. The output is sorted by database name. Only the system security officer can run this command. If the system encryption password has not been set for all databases, Adaptive Server generates Message 19782:

```
The system encryption password has not been set for all
available databases
```

display\_keys

used with *system\_encr\_passwd* to display the keys and key copies that are encrypted using the system encryption password.

### Examples

**Example 1** Use the helpkey parameter to display key information in the current database. You can get information on all keys or specific keys. The second parameter to sp\_encryption supplies the key name and may include SQL pattern-matching characters. If you are not the database owner and do not have sso\_role or keycustodian\_role, sp\_encryption displays fewer columns.

This displays properties of all base encryption keys in the current database when run by the SSO, key custodian, or the DBO:

```
sp_encryption helpkey
```

| Key Name    | Key Owner          | Key Length   | Key Algorithm   | Key Type              | Pad |
|-------------|--------------------|--------------|-----------------|-----------------------|-----|
| Init Vector | Type of Password   | Key Recovery | # of Key Copies |                       |     |
| tinnap_key  | tinnap             | 128          | AES             | Symmetric key         | 0   |
| 1           | System Encr Passwd | 0            | 0               |                       |     |
| tinnap_key1 | tinnap             | 128          | AES             | Symmetric default key | 0   |
| 1           | User Passwd        | 1            | 3               |                       |     |
| sample_key1 | dbo                | 192          | AES             | Symmetric key         | 1   |
| 1           | Login Passwd       | 1            | 2               |                       |     |

When run by user “tinnap,” this displays the following properties of all base encryption keys in the current database:

```
sp_encryption helpkey
```

| Key Name    | Key Owner | Key Type              |
|-------------|-----------|-----------------------|
| tinnap_key  | tinnap    | Symmetric key         |
| tinnap_key1 | tinnap    | Symmetric default key |
| sample_key1 | dbo       | Symmetric key         |

If you are not the system security officer, or do not have keycustodian\_role, the query displays all base keys you own in the current database. If you do not specify a *user\_name* as the second parameter, the query displays the base keys you own.

**Example 2** Displays properties of all base encryption keys with names similar to “tinnap%” in the current database when run by SSO, key custodian, or DBO:

```
sp_encryption helpkey, "tinnap%"
```

| Key Name | Key Owner   | Key Length       | Key Algorithm | Key Type        |
|----------|-------------|------------------|---------------|-----------------|
| Pad      | Init Vector | Type of Password | Key Recovery  | # of Key Copies |

```

-----
---
tinnap_key tinnap 128 AES Symmetric key
0 1 System Encr Passwd 0 0
tinnap_key1 tinnap 128 AES Symmetric default key
0 1 User Passwd 1 3

```

When run by user “tinnap,” displays the following properties for the base encryption keys in the current database with names similar to “tinnap%”:

```

sp_encryption helpkey, "tinnap%"
Key Name      Key Owner  Key Type
-----
tinnap_key    tinnap    Symmetric key
tinnap_key1   tinnap    Symmetric default key

```

**Example 3** Displays the properties of base encryption key sample\_key1 when run by the SSO, key custodian, or DBO in the current database:

```

sp_encryption helpkey, sample_key1

Key Name      Key Owner  Key Length  Key Algorithm  Key Type
Pad           Init Vector  Type of Password  Key Recovery  # of Key Copies
-----
sample_key1   dbo        192         AES           Symmetric Key
1             1          Login       1             2

```

When non-privileged user “tinnap” runs this command, it displays the following properties for the base encryption key sample\_key1 in the current database:

```

sp_encryption helpkey, sample_key1

Key Name      Key Owner  Key Type
-----
sample_key1   dbo        Symmetric key

```

**Example 4** Displays the properties of all base encryption keys in all available databases (only the SSO can run this command):

```

sp_encryption helpkey, NULL, all_dbs

Db.Owner.Keyname      Key Length  Key Algorithm  Key Type
Pad  Init Vector  Type of Password  Key Recovery  #of Key Copies
-----
keydb.dbo.cc_key      256         AES           Symmetric default key

```

|                           |     |                      |                       |   |
|---------------------------|-----|----------------------|-----------------------|---|
| 1                         | 1   | System EncrPasswd    | 0                     | 0 |
| keydb.dbo.sample_key1     | 128 | AES                  | Symmetric key         |   |
| 0                         | 0   | System Encr Password | 1                     | 4 |
| keydb1.tinnap.tinnap_key  | 128 | AES                  | Symmetric key         |   |
| 0                         | 1   | System Encr Passwd   | 0                     | 0 |
| keydb1.tinnap.tinnap_key1 | 128 | AES                  | Symmetric default key |   |
| 0                         | 1   | User Password        | 1                     | 3 |
| keydb1.dbo.sample_key1    | 192 | AES                  | Symmetric key         |   |
| 1                         | 1   | Login Passwd         | 1                     | 2 |

**Example 5** `all_dbs` indicates that information on keys across all databases is required. You must have `sso_role` to use the `all_dbs` parameter.

Displays the properties of all base encryption keys similar to `%key` in all available databases:

```
sp_encryption helpkey, '%key', all_dbs
```

| Db.Owner.Keyname         | Key Length         | Key Algorithm | Key Type              |
|--------------------------|--------------------|---------------|-----------------------|
| Pad Init Vector          | Type of Password   | Key Recovery  | #of Key Copies        |
| -----                    | -----              | -----         | -----                 |
| keydb.dbo.cc_key         | 256                | AES           | Symmetric default key |
| 1 1                      | System EncrPasswd  | 0             | 0                     |
| keydb1.tinnap.tinnap_key | 128                | AES           | Symmetric key         |
| 0 1                      | System Encr Passwd | 0             | 0                     |

**Example 6** Displays information on key copies using `key_copy` as the third parameter. Enter null instead of value for `keyname` for the second parameter to see information on all key copies. You can use pattern-matching characters in `keyname` (see example 2):

```
sp_encryption helpkey, tinnap_key1, key_copy
```

| Owner.Keyname      | Assignee | Type of Password | Key Recovery |
|--------------------|----------|------------------|--------------|
| -----              | -----    | -----            | -----        |
| tinnap.tinnap_key1 | joesmp   | User Passwd      | 0            |
| tinnap.tinnap_key1 | samcool  | User Passwd      | 1            |
| tinnap.tinnap_key1 | billyg   | User Passwd      | 0            |

When run by user “joesmp,” this displays all encryption key copies assigned to user “joesmp” and also all the key copies for that keyname if the user is the owner of the key in the current database:

```
sp_encryption helpkey, tinnap_key1, key_copy
```

| Owner.Keyname      | Assignee | Type of Password | Key Recovery |
|--------------------|----------|------------------|--------------|
| -----              | -----    | -----            | -----        |
| tinnap.tinnap_key1 | joesmp   | User Passwd      | 0            |

**Example 7** Use the `display_cols` parameter to show all encrypted columns in all available databases encrypted by keys from the current database. If you do not have the `sso_role`, the query displays only the encrypted columns in the current database encrypted by keys from the current database. You can use pattern matching characters or `key_name` for the second parameter. If you use pattern matching characters for `key_name` as `sso_role`, the query displays all encrypted columns in all available databases encrypted by the pattern matching `key_name`. If you use `key_name` for the second parameter and have the `sso_role`, displays all encrypted columns in all available databases encrypted by the specified `key_name`:

```

sp_encryption helpkey, null, display_cols
Key Name      Key Owner  Database Name  Table Owner  Table Name  Column Name
-----
tinnap_key    tinnap     testdb1        tinnap       t3          c3
tinnap_key1   tinnap     testdb1        tinnap       t4          c4
sample_key1   dbo        coldb          dbo          t1          c1
sample_key1   dbo        coldb          billyg       t2          c2

```

**Example 8** Displays all keys and key copies encrypted with the system encryption password in the current database. If you do not have these privileges, the query displays the keys owned by or assigned to the user which are encrypted with the system encryption password:

```

sp_encryption helpkey, system_encr_passwd, display_keys
Owner.Keyname      Assignee
-----
dbo.cc_key         NULL
dbo.sample_key1   NULL
dbo.sample_key1   tinnap

```

**Example 9** When run by the database owner or a user with `keycustodian_role` or `sso_role`, the `helpuser` parameter displays all base keys owned by users in the current database.

```

sp_encryption helpuser
Owner.Keyname      Type of Password
-----
tinnap.tinnap_key  System Encr Passwd
tinnap.tinnap_key1 User Passwd
dbo.sample_key1    Login Passwd

```

If user “tinnap” runs this command, lists all base keys owned by this user in the current database:

```

sp_encryption helpuser

```

| Owner.Keyname      | Type of Password    |
|--------------------|---------------------|
| -----              | -----               |
| tinnap.tinnap_key  | System Enchr Passwd |
| tinnap.tinnap_key1 | User Passwd         |

**Example 10** The database owner or a user with `keycustodian_role` or `sso_role` can use the `key_copy` parameter with the `helpuser` parameter to display key copies assigned to one or more users in the current database. You can use pattern-matching characters for the `user` parameter. This shows the key copies of all users in the current database:

```
sp_encryption helpuser, NULL, key_copy
Owner.Keyname          Assignee          Type of Password    Key Recovery
-----
dbo.sample_key1        tinnap           Login Passwd        0
tinnap.tinnap_key1    joesmp          User Passwd         0
dbo.sample_key1        joesmp          Login Passwd        1
tinnap.tinnap_key1    samcool         User Passwd         1
tinnap.tinnap_key1    billyg         User Passwd         0
```

If you are not the database owner and do not have `keycustodian_role` or `sso_role`, this query displays the copies of any keys you own and the key copies that other key owners have assigned to you. For example, when user “tinnap” runs this query:

```
sp_encryption helpuser, NULL, "key_copy"
Owner.Keyname          Assignee          Type of Password    Key Recovery
-----
dbo.sample_key1        tinnap           Login Passwd        0
tinnap.tinnap_key1    joesmp          User Passwd         0
tinnap.tinnap_key1    samcool         User Passwd         1
tinnap.tinnap_key1    billyg         User Passwd         0
```

**Example 11** If you are the database owner or a user with `keycustodian_role` or `sso_role`, `helpcol` displays all encrypted columns in the current database and the keys used to encrypt the columns. If you do not have these privileges, `helpcol` displays `keyid` instead of the `key_name` if the encryption key is in a different database:

```
sp_encryption helpcol
Owner.Table.Column    Db.Owner.Keyname
-----
dbo.t1.c1             keydb1.dbo.sample_key1
billyg.t2.c2         keydb.dbo.sample_key1
tinnap.t3.c3         coldb.dbo.sample_key2
```

**Example 12** Include the `helpcol` parameter with the `table_name` and `column_name` parameters to display all encrypted columns or a specific encrypted column in a given table. When run by a user with `sso_role`, the query below displays all encrypted columns in table `t3` in the current database and the keys used to encrypt the columns across all available databases. When run by a user without `sso_role`, this query displays the key's ID instead of its name if the key is not in the current database. The second parameter can have a combination of `[database_name.][table_name.][column_name]`:

```
sp_encryption helpcol, t3

Owner.Table.Column                Db.Owner.Keyname
-----
tinnap.t3.c3                      coldb.dbo.sample_key2
```

**Example 13** Displays the system encryption password properties each database (you must have `sso_role` to run this query):

```
sp_encryption helpkey, system_encr_passwd, all_dbs
Database      Type of system_encr_passwd  Last modified by
Date
-----
master        persistent                sa
Aug 26 2008 10:05AM
```

**Usage**

- The privileges granted to the user who runs `sp_encryption` determines the output. See “Usage restrictions” on page 317 for more information.
- If you run `sp_encryption helpkey` and no keys are present in the database, you see an informational message.
- You must specify the `key_copy` parameter to get information about key copies. If you do not specify the `key_copy` parameter, `sp_encryption` returns information only about base keys.
- If `keyname` is NULL in `sp_encryption helpkey`, `keyname`, `key_copy`, lists all the key copies in the current database for a SSO, key custodian, or DBO. If it is run by a user without privileges, it lists all the key copies assigned to the user in the current database and all key copies of the keys owned by the user in the current database.
- For `sp_encryption helpcol`, `column_name` uses the form `name.name.name`, where:
  - `name` – if `sp_encryption` finds no tables of this name, it looks for all columns of that name.



- *name.name* – is *owner.table*. If `sp_encryption` finds no tables of this name, it looks for a single column named *table.column*.
- *name.name.name* – is *owner.table.name*.

For all columns identified by these rules in the current database, `sp_encryption` displays column name along with the key used to encrypt the column.

The output for `sp_encryption helpcol, column_name` is *owner.table.column* and *db.owner.keyname*. The *keyname* is expressed as *database.keyid* when run by non-SSO users, and the key is present in a different database from the encrypted column. The result set is sorted by *owner.table.column*.

#### Usage restrictions

- Only an SSO can run `sp_encryption helpkey, [,keyname | wildcard]`, `all_dbs` to get the properties of keys in all databases. If a user without the `sso_role` runs this command, they receive an “unauthorized user” error message. If no keys qualify the *keyname* or *wildcard*, Adaptive Server returns a message stating 'There are no encryption keys (key copies) like *keyname* in all databases'.
- When the SSO runs `sp_encryption helpkey, keyname, display_cols`, it lists all columns across all available databases encrypted by *keyname*. If it is run by a user without privileges, it lists the columns in the current database encrypted by *keyname*.

If the SSO runs `sp_encryption helpkey, keyname, display_cols` and the *keyname* value is NULL, it displays all encrypted columns across all available databases. When run by a user without privileges, it displays all encrypted columns in the current database.

- If an SSO, key custodian, or DBO runs `sp_encryption helpuser, user_name, key_copy` without specifying a *user\_name* and *key\_copy* for the `helpuser` parameter, it lists all the base keys owned by all users in the current database. If `sp_encryption` is run by a user without privileges without specifying a *user\_name* or *key\_copy*, it displays the base keys owned by the current user.

If any user runs `sp_encryption helpuser, user_name`, it lists all the base keys owned by *owner.keyname*. If a user without privileges runs the command and owns no base keys, Adaptive Server displays an informational message stating this.

If an SSO, key custodian, or DBO runs `sp_encryption helpuser, user_name, key_copy`, it lists the key copies assigned to *user\_name*. If a user without privileges issues this command, it lists the key copies assigned to this user and all the key copies of the keys owned by the user in the current database, with these columns in the result set: Owner.Keyname, Assignee, Type of Password, and Key Recovery. The output is sorted by Assignee.

If *user\_name* is NULL for `sp_encryption helpuser user_name, key_copy`, it lists all the key copies in the current database for a SSO, key custodian, or DBO. For users without privileges, it lists all the key copies assigned to the user in the current database and the key copies for the keys owned by this user.

- When a SSO, key custodian, or DBO runs `sp_encryption helpkey, keyname, key_copy`, it lists the key copies in the current database for *keyname*. If this is run by a user without privileges, it lists the key copies assigned to the user for that *keyname* and the key copies for that *keyname* if the user is the key owner.

- The SSO, key custodian, and DBO can run `sp_encryption helpkey`, `system_encr_passwd`, `display_keys` to receive information on all keys and key copies in the current database encrypted by system encryption password. Users without privileges receive information about the base encryption keys or key copies they own or are assigned in the current database. Key copies are encrypted with the system encryption password only when they are created for login association. The output is sorted by *owner.keyname*.

## sp\_engine

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Enables you to bring an engine online or offline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>sp_engine {"online"   [offline   can_offline] [, engine_id]   ["shutdown", engine_id]}</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><b>"online"</b><br/>bring an engine online. The value of <code>sp_configure "max online engines"</code> must be greater than the current number of engines online. , Because "online" is a reserved keyword, you must use quotes.</p> <p><b>offline</b><br/>bring an engine offline. You can also use the <code>engine_id</code> parameter to specify a specific engine to bring offline.</p> <p><b>can_offline</b><br/>returns information on whether an engine can be brought offline. <code>can_offline</code> returns the Adaptive Server tasks with an affinity to this engine (for example, during Omni or java.net tasks) if its state is online . If you do not specify an <code>engine_id</code>, the command describes the status of the engine in <code>sysengines</code> with the highest <code>engine_id</code>.</p> <p><b>engine_id</b><br/>the ID of the engine. The <code>engine_id</code> parameter is optional. If you do not specify an <code>engine_id</code>, <code>sp_engine</code> uses the incremented or decremented value for <code>engine_id</code> for the value of engine found within <code>sysengines</code>. That is, if your system uses engines 0, 1, 2, and 3, and you do not specify an engine id, <code>sp_engine</code> takes engine ID 3 offline, then engine ID 2, and so on.</p> <p><b>"shutdown"</b><br/>Forces an engine offline. If there are any tasks with an affinity to this engine, they are killed after a five-minute wait. You must use quotes, as <code>shutdown</code> is a reserved keyword.</p> |

**Examples**                    **Example 1** Brings engine 1 online. Messages are platform specific (in this example, Sun Solaris was used):

```
sp_engine "online", 1
02:0000:00000:2001/10/26 08:53:40.61 kernel   Network and device connection
limit is 3042.
02:0000:00000:2001/10/26 08:53:40.61 kernel   SSL Plus security modules
loaded successfully.
02:0000:00000:2001/10/26 08:53:40.67 kernel   engine 2, os pid 8624   online
02:0000:00000:2001/10/26 08:53:40.67 kernel   Enabling Sun Kernel
asynchronous disk I/O strategy
00:0000:00000:2001/10/26 08:53:40.70 kernel   ncheck: Network fc0330c8
online
```

**Example 2** Describes the steps in taking an engine offline that is currently running tasks with an affinity for this engine:

```
select engine, status from sysengines

engine      status
-----      -
0           online
1           online
2           online
3           online
```

If you bring engine 1 offline:

```
sp_engine offline, 1
```

The following task(s) will affect the offline process:  
spid: 19 has outstanding ct-lib connections.

And then run the same query as above, it now shows that engine 1 is in an offline state:

```
select engine, status from sysengines

engine      status
-----      -
0           online
1           in offline
2           online
3           online
```

As soon as the task that has an affinity to engine 1 finishes, Adaptive Server issues a message similar to the following to the error log:

```
02:00000:00000:2001/10/26 09:02:09.05 kernel engine 1, os pid
8623 offline
```

**Example 3** Determines whether engine 1 can be brought offline:

```
sp_engine can_offline, 1
```

**Example 4** Takes engine 1 offline:

```
sp_engine offline, 1
```

Adaptive Server eventually returns a message similar to the following:

```
01:00000:00000:2001/11/09 16:11:11.85 kernel Engine 1 waiting for
affinitated process(es) before going offline
01:00000:00000:2001/11/09 16:11:11.85 kernel Process 917518 is preventing
engine 1 going offline
00:00000:00000:2001/11/09 16:16:01.90 kernel engine 1, os pid
21127 offline
```

**Example 5** Shuts down engine 1 :

```
sp_engine shutdown, 1
```

## Usage

- You cannot offline or shut down engine 0.
- You can determine the status of an engine, and which engines are currently online with the following query:

```
select engine, status from sysengines
where status = "online"
```

- online and shutdown are keywords and must be enclosed in quotes.
- Engines can be brought online only if max online engines is greater than the current number of engines with an online status, and if enough CPU is available to support the additional engine.
- An engine offline may fail or may not immediately take effect if there are server processes with an affinity to that engine.

## Using sp\_engine "offline" versus sp\_engine "shutdown"

Sometimes when you use sp\_engine "offline", the engine does not immediately go offline, and instead appears to be in "dormant" state in the engine table. This is caused by processes that are attached to your engine that cannot be migrated to other engines. When this happens, the engine does not take new work, and consumes minimal CPU cycles. When the process preventing the completion of engine offline either ends or becomes available for migration, the engine moves from dormant to fully offline, and disappears from the engine table.

sp\_engine "shutdown" is a more aggressive version of the offline command. The sp\_engine "shutdown" procedure actively kills any processes that are preventing the engine from going offline, forcing it to shut down.

However, if you use sp\_engine "shutdown" on an engine that has ct-lib or java connections, you get the following error message:

```
Engine has outstanding ct-lib/java connections and
cannot be offlined.
```

When this happens, repeat the command again every few minutes until the connections are no longer there, and the engine can shut down.

## Permissions

You must be a System Administrator to bring engines online or offline.

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

## sp\_estspace

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Estimates the amount of space required for a table and its indexes, and the time needed to create the index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <code>sp_estspace table_name, no_of_rows, fill_factor,<br/>cols_to_max, textbin_len, iosec, page_size</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <p><i>table_name</i><br/>is the name of the table. It must already exist in the current database.</p> <p><i>no_of_rows</i><br/>is the estimated number of rows that the table will contain.</p> <p><i>fill_factor</i><br/>is the index fillfactor. The default is null, which means that Adaptive Server uses its default fillfactor.</p> <p><i>cols_to_max</i><br/>is a comma-separated list of the variable-length columns for which you want to use the maximum length instead of the average. The default is the average declared length of the variable-length columns.</p> <p><i>textbin_len</i><br/>is the length, per row, of all text and image columns. The default value is 0. You need to provide a value only if the table stores text or image data. text and image columns are stored in a separate set of data pages from the rest of the table's data. The actual table row stores a pointer to the text or image value. sp_estspace provides a separate line of information about the size of the text or image pages for a row.</p> <p><i>iosec</i><br/>is the number of disk I/Os per second on this machine. The default is 30 I/Os per second.</p> <p><i>pagesize</i><br/>allows you to estimate the space required for a given table—and all of its indexes—if you migrate the table to a server of the specified page size. You can either specify a page size (2048, 4096, 8192, 16384, or 2K, 4K, 8K, 16K) or NULL to use your current page size. If you do not use “K” as a unit specifier, the default for <i>pagesize</i> is bytes. Because page allocation allocates the same size page for various objects, the <i>page_size</i> value applies to all page types (index, data, text and so on).</p> |
| Examples    | <b>Example 1</b> Calculates the space requirements for the titles table and its indexes, and the time required to create the indexes. The number of rows is 10,000, the fillfactor is 50 percent, two variable-length columns are computed using the maximum size for the column, and the disk I/O speed is 25 I/Os per second:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



```
sp_estspace titles, 10000, 50, "title,notes", 0, 25
```

| name       | type         | idx_level | Pages | Kbytes |
|------------|--------------|-----------|-------|--------|
| titles     | data         | 0         | 3364  | 6728   |
| titles     | text/image   | 0         | 0     | 0      |
| titleidind | clustered    | 0         | 21    | 43     |
| titleidind | clustered    | 1         | 1     | 2      |
| titleind   | nonclustered | 0         | 1001  | 2002   |
| titleind   | nonclustered | 1         | 54    | 107    |
| titleind   | nonclustered | 2         | 4     | 8      |
| titleind   | nonclustered | 3         | 1     | 2      |

```
Total_Mbytes
```

```
-----  
8.68
```

| name       | type         | total_pages | time_mins |
|------------|--------------|-------------|-----------|
| titleidind | clustered    | 3386        | 13        |
| titleind   | nonclustered | 1060        | 5         |
| titles     | data         | 0           | 2         |

**Example 2** Uses the average length of existing image data in the `au_pix` table to calculate the size of the table with 1000 rows. You can also provide this size as a constant:

```
declare @i int
select @i = avg(datalength(pic)) from au_pix
exec sp_estspace au_pix, 1000, null, null, 16, @i
```

```
au_pix has no indexes
```

| name   | type       | idx_level | Pages | Kbytes |
|--------|------------|-----------|-------|--------|
| au_pix | data       | 0         | 31    | 63     |
| au_pix | text/image | 0         | 21000 | 42000  |

```
Total_Mbytes
```

```
-----  
41.08
```

**Example 3** Calculates the size of the `titles` table with 50,000 rows, using defaults for all other values:

```
sp_estspace titles, 50000
```

| name | type | idx_level | Pages | Kbytes |
|------|------|-----------|-------|--------|
|------|------|-----------|-------|--------|

```

-----
titles          data          0          4912         9824
titleidind     clustered    0           31           61
titleidind     clustered    1            1            2
titleind       nonclustered 0         1390         2780
titleind       nonclustered 1           42           84
titleind       nonclustered 2            2            4
titleind       nonclustered 3            1            2
    
```

```

Total_Mbytes
-----
                12.46
    
```

```

name           type           total_pages  time_mins
-----
titleidind     clustered        4943         19
titleind       nonclustered    1435         8
    
```

**Example 4** This example is run after adding a clustered index to the blurbs table:

```

declare @i int
select @i = avg(datalength(copy)) from blurbs
exec sp_estspace blurbs, 6, null, null, 16, @i, "16k"
    
```

```

name           type           idx_level  Pages         Kbytes
-----
blurbs         data             0           8           128
blurbs         text/image       0           6           96
blurbs_ind     clustered        0           1           16
blurbs_ind     clustered        1           1           16
    
```

```

Total_Mbytes
-----
0.25
    
```

```

name           type           total_pages  time_mins
-----
blurbs_ind     clustered        10           0
blurbs         data             6            0
    
```

This example is run on a 2K server, and indicates that the blurbs table would require .25MB after it is migrated to a 16K server. Below is the same query run on a 16K server, which verifies the .25MB space requirement:

```

declare @i int
    
```

```

select @i = avg(datalength(copy)) from blurbs
exec sp_estspace blurbs, 6, null, null, 16, @i, "16k"

```

| name       | type       | idx_level | Pages | Kbytes |
|------------|------------|-----------|-------|--------|
| blurbs     | data       | 0         | 8     | 128    |
| blurbs     | text/image | 0         | 6     | 96     |
| blurbs_ind | clustered  | 0         | 1     | 16     |
| blurbs_ind | clustered  | 1         | 1     | 16     |

Total\_Mbytes  
-----  
0.25

| name       | type      | total_pages | time_mins |
|------------|-----------|-------------|-----------|
| blurbs_ind | clustered | 10          | 0         |
| blurbs     | data      | 6           | 0         |

**Example 5** This example estimates that, if the blurbs table had a thousand rows in it on a 2K server, it would require 1.99MB of space:

```

declare @i int
select @i = avg(datalength(copy)) from blurbs
exec sp_estspace blurbs, 1000, null, null, 16, @i, "2k"

```

| name       | type       | idx_level | Pages | Kbytes |
|------------|------------|-----------|-------|--------|
| blurbs     | data       | 0         | 16    | 32     |
| blurbs     | text/image | 0         | 1000  | 2000   |
| blurbs_ind | clustered  | 0         | 1     | 2      |
| blurbs_ind | clustered  | 1         | 1     | 2      |

Total\_Mbytes  
-----  
1.99

| name       | type      | total_pages | time_mins |
|------------|-----------|-------------|-----------|
| blurbs_ind | clustered | 18          | 0         |
| blurbs     | data      | 1000        | 0         |

#### Usage

- To estimate the amount of space required by a table and its indexes:
  - a Create the table.
  - b Create all indexes on the table.

- c Run sp\_estspace, giving the table name, the estimated number of rows for the table, and the optional arguments, as needed.

You do not need to insert data into the tables. sp\_estspace uses information in the system tables—not the size of the data in the tables—to calculate the size of tables and indexes.

- If the auto identity option is set in a database, Adaptive Server automatically defines a 10-digit IDENTITY column in each new table that is created without specifying a primary key, a unique constraint, or an IDENTITY column. To estimate how much extra space is required by this column:
  - a In the master database, use sp\_dboption to turn on the auto identity option for the database.
  - b Create the table.
  - c Run sp\_estspace on the table and record the results.
  - d Drop the table.
  - e Turn the auto identity option off for the database.
  - f Re-create the table.
  - g Rerun sp\_estspace on the table, and record the results.
- For information about tables or columns, use sp\_help *tablename*.

Permissions

Any user can execute sp\_estspace.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create index, create table

**System procedures** sp\_dboption, sp\_help

## sp\_export\_qpgroup

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Exports all plans for a specified user and abstract plan group to a user table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Syntax      | <code>sp_export_qpgroup <i>usr</i>, <i>group</i>, <i>tab</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>usr</i><br/>is the name of the user who owns the abstract plans to be exported.</p> <p><i>group</i><br/>is the name of the abstract plan group that contains the plans to be exported.</p> <p><i>tab</i><br/>is the name of a table into which to copy the plans. It must be a table in the current database. You can specify a database name, but not an owner name, in the form <i>dbname.tablename</i>. With large identifiers, the total length must be no more than 255 characters.</p>                                                                                                                                                                                                                                                                                                                   |
| Examples    | Creates a table called <code>moveplans</code> containing all the plans for the user “freidak” that are in the <code>ap_stdout</code> group: <pre>sp_export_qpgroup freidak, ap_stdout, "tempdb..moveplans"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"> <li>• <code>sp_export_qpgroup</code> copies plans from an abstract plan group to a user table. With <code>sp_import_qpgroup</code>, it can be used to copy abstract plans groups between servers and databases or to assign user IDs to copied plans.</li> <li>• The user table name that you specify cannot exist before you run <code>sp_export_qpgroup</code>. The table is created with a structure identical to that of <code>sysqueryplans</code>.</li> <li>• <code>sp_export_qpgroup</code> uses <code>select...into</code> to create the table to store the copied plans. You must use <code>sp_dboption</code> to enable <code>select into/bulkcopy/plsort</code> in order to use <code>sp_export_qpgroup</code>, or create the table in <code>tempdb</code>.</li> </ul> |
| Permissions | Only a System Administrator or the Database Owner can execute <code>sp_export_qpgroup</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also **System procedures** sp\_copy\_all\_qplans, sp\_copy\_qplan, sp\_dboption, sp\_import\_qpgroup

## sp\_extendsegment

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Extends the range of a segment to another database device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>sp_extendsegment <i>segname</i>, <i>dbname</i>, <i>devname</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Parameters  | <p><i>segname</i><br/>is the name of the existing segment previously defined with <code>sp_addsegment</code>.</p> <p><i>dbname</i><br/>is the name of the database on which to extend the segment. <i>dbname</i> must be the name of the current database.</p> <p><i>devname</i><br/>is the name of the database device to be added to the current database device range already included in <i>segname</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Examples    | <p>Extends the range of the segment indexes for the database <code>pubs2</code> on the database device <code>dev2</code>:</p> <pre>sp_extendsegment indexes, pubs2, dev2</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Usage       | <ul style="list-style-type: none"> <li>• A segment can be extended over several database devices.</li> <li>• You can only execute <code>sp_extendsegment</code> for the logsegment system segment in single-user mode.</li> <li>• If the logsegment segment is extended, any other segments on the device are dropped and the device is used for the log segment exclusively.</li> <li>• When you extend the logsegment segment, Adaptive Server recalculates its last-chance threshold.</li> <li>• To associate a segment with a database device, create or alter the database with a reference to that device. A database device can have more than one segment associated with it.</li> <li>• After defining a segment, you can use it in the <code>create table</code> and <code>create index</code> commands to place the table or index on the segment. If you create a table or index on a particular segment, subsequent data for the table or index is located on that segment.</li> </ul> |
| Permissions | Only the Database Owner or a System Administrator can execute <code>sp_extendsegment</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Auditing    | Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** alter database, create index, create table

**System procedures** sp\_addsegment, sp\_dropsegment, sp\_helpdb, sp\_helpdevice, sp\_helpsegment, sp\_placeobject



## sp\_extengine

|             |                                                                                                                                                                                                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Starts and stops EJB Server. Displays status information about EJB Server.                                                                                                                                                                                                          |
| Syntax      | sp_extengine 'ejb_server', '{ start   stop   status }'                                                                                                                                                                                                                              |
| Parameters  | <p><i>ejb_server</i><br/>the logical name of the EJB Server.</p> <p>start<br/>starts the EJB Server.</p> <p>stop<br/>shuts down the EJB Server.</p> <p>status<br/>displays status information about the EJB Server.</p>                                                             |
| Examples    | <p><b>Example 1</b> Informs user that the EJB Server SYB_EJB is running:</p> <pre>sp_extengine 'SYB_EJB', 'status'</pre> <p>Enterprise java bean server is up and running.</p> <p><b>Example 2</b> Shuts down the EJB Server SYB_EJB:</p> <pre>sp_extengine 'SYB_EJB', 'stop'</pre> |
| Usage       | <ul style="list-style-type: none"> <li>You must have a valid Adaptive Server EJB Server site license to use sp_extengine.</li> </ul>                                                                                                                                                |
| Permissions | Only a System Administrator can execute sp_extengine.                                                                                                                                                                                                                               |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                 |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Documents** See the *User's Guide to EJB Server* for more information.

## sp\_extrapwdchecks

|             |                                                                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | A custom stored procedure that can contain user-defined logic for password complexity checks. You can configure sp_extrapwdchecks according to your security needs. Install sp_extrapwdchecks in the master database.                   |
| Syntax      | sp_extrapwdchecks <i>caller_password</i> , <i>new_password</i> , <i>login_name</i>                                                                                                                                                      |
| Parameters  | <i>caller_password</i><br>specifies the current password.<br><br><i>new_password</i><br>specifies the new password being set.<br><br><i>login_name</i><br>specifies the login name associated with the password being changed or added. |
| Usage       | sp_extrapwdchecks must use raiserror to signal a failure to Adaptive Server. Use sp_addmessage to add error message for this failure in Adaptive Server.                                                                                |

---

**Note** Do not use raiserror to get the expected behaviour. raiserror updates the @@error global variable. @@error is also updated each time you execute a T-SQL statement, including print and if. If raiserror is followed by any T-SQL statement, @@error gets overwritten, and sp\_extrapwdchecks fails to return an error for a failed password if raiserror is followed by any TSQL statement.

---

## sp\_familylock

**Description** Reports information about all the locks held by a family (coordinating process and its worker processes) executing a statement in parallel.

**Syntax** `sp_familylock [fpid1 [, fpid2]]`

**Parameters** *fpid1*  
is the family identifier for a family of worker processes from the master.dbo.sysprocesses table. Run `sp_who` or `sp_lock` to get the *spid* of the parent process.

*fpid2*  
is the Adaptive Server process ID number for another lock.

**Examples** Displays information about the locks held by all members of the family with an fid of 5:

```
sp_familylock 5
```

| fid | spid | locktype      | table_id  | page | dbname | class           | context                  |
|-----|------|---------------|-----------|------|--------|-----------------|--------------------------|
| 5   | 5    | Sh_intent     | 176003658 | 0    | userdb | Non cursor lock | Sync-pt duration request |
| 5   | 5    | Sh_intent-blk | 208003772 | 0    | userdb | Non cursor lock | Sync-pt duration request |
| 5   | 6    | Sh_page       | 208003772 | 3972 | userdb | Non cursor lock | Sync-pt duration request |
| 5   | 7    | Sh_page       | 208003772 | 3973 | userdb | Non cursor lock | Sync-pt duration request |
| 5   | 8    | Sh_page       | 208003772 | 3973 | userdb | Non cursor lock | Sync-pt duration request |

- Usage**
- `sp_familylock` with no parameter reports information on all processes belonging to families that currently hold locks. The report is identical to the output from `sp_lock`; however, `sp_familylock` allows you to generate reports based on the family ID, rather than the process ID. It is useful for detecting family deadlocks.
  - Use the `object_name` system function to derive a table's name from its ID number.
  - The "locktype" column indicates whether the lock is a shared lock ("Sh" prefix), an exclusive lock ("Ex" prefix) or an update lock, and whether the lock is held on a table ("table" or "intent") or on a page ("page").  
The "blk" suffix in the "locktype" column indicates that this process is blocking another process that needs to acquire a lock. As soon as this process completes, the other process(es) moves forward. The "demand" suffix indicates that the process is attempting to acquire an exclusive lock.
  - The "class" column indicates whether a lock is associated with a cursor. It displays one of the following:

- “Non cursor lock” indicates that the lock is not associated with a cursor.
- “Cursor Id *number*” indicates that the lock is associated with the cursor ID number for that Adaptive Server process ID.
- A cursor name indicates that the lock is associated with the cursor *cursor\_name* that is owned by the current user executing sp\_lock.
- The “fid” column identifies the family (including the coordinating process and its worker processes) to which a lock belongs. Values for “fid” are:
  - A zero value indicates that the task represented by the spid is executed in serial. It is not participating in parallel execution.
  - A nonzero value indicates that the task (spid) holding the lock is a member of a family of processes (identified by “fid”) executing a statement in parallel. If the value is equal to the spid, it indicates that the task is the coordinating process in a family executing a query in parallel.
- The “context” column identifies the context of the lock. Worker processes in the same family have the same context value. Values for “context” are:
  - “NULL” means that the task holding this lock is either executing a query in serial or is a query being executed in parallel in transaction isolation level 1.
  - “FAM\_DUR” means that the task holding the lock will hold the lock until the query is complete.

A lock’s context may be “FAM\_DUR” if the lock is a table lock held as part of a parallel query, if the lock is held by a worker process at transaction isolation level 3, or if the lock is held by a worker process in a parallel query and must be held for the duration of the transaction.

Permissions

Any user can execute sp\_familylock.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** kill, select

**System procedures** sp\_lock, sp\_who

## sp\_find\_qplan

Description Finds an abstract plan, given a pattern from the query text or plan text.

Syntax `sp_find_qplan pattern [, group ]`

Parameters *pattern*  
is a string to find in the text of the query or abstract plan.

*group*  
is the name of the abstract plan group.

Examples **Example 1** Reports on all abstract plans that have the string “from titles” in the query:

```
sp_find_qplan "%from titles%"
gid id          text
-----
2  921054317  select count(*) from titles
2  921054317
      ( plan
      ( i_scan t_pub_id_ix titles )
      ( )
    )
( prop titles
  ( parallel 1 )
  ( prefetch 16 )
  ( lru )
)
5  937054374  select type, avg(price) from titles group by type
5  937054374
      ( plan
      ( store Worktab1
        ( i_scan type_price titles )
      )
      ( t_scan ( work_t Worktab1 ) )
    )
( prop titles
  ( parallel 1 )
  ( prefetch 16 )
  ( lru )
)
```

**Example 2** Finds all plans that include a table scan operator:

```
sp_find_qplan "%t_scan%"
```

**Example 3** Uses the range pattern matching to look for strings such as “table1”, “table2”, and so forth, in plans in the dev\_plans group:

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage       | <pre>sp_find_qplan "%table[0-9]%", dev_plans</pre> <ul style="list-style-type: none"> <li>Use <code>sp_find_qplan</code> to find an abstract plan that contains a particular string. You can match strings from either the query text or from the abstract plan text.</li> <li>For each matching plan, <code>sp_find_qplan</code> prints the group ID, plan ID, query text and abstract plan text.</li> <li>If you include a group name, <code>sp_find_qplan</code> searches for the string in the specified group. If you do not provide a group name, <code>sp_find_plan</code> searches all queries and plans for all groups.</li> <li>You must supply the “%” wildcard characters, as shown in the examples, unless you are searching for a string at the start or end of a query or plan. You can use any Transact-SQL pattern matching syntax, such as that shown in Example 3.</li> <li>The text of queries in <code>sysqueryplans</code> is broken into 255-byte column values. <code>sp_find_qplan</code> may miss matches that span one of these boundaries, but finds all matches that are less than 127 bytes, even if they span two rows.</li> </ul> |
| Permissions | Any user can execute <code>sp_find_qplan</code> . It reports only on abstract plans owned by the user who executes it, except when executed by a System Administrator or the Database Owner.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_help_qpgroup`, `sp_help_qplan`

## sp\_fixindex

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | sp_fixindex repairs a set of indexes (rather than on a single index) on a system table when it has been corrupted. sp_fixindex rebuilds the data layer if the target table has a placement or clustered index (it reclaims the unused space in the data layer while working on the placement or clustered index of a system table).                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | sp_fixindex <i>database_name</i> , <i>table_name</i> [, <i>index_id</i>   null]<br>[, <i>index_name</i>   null] [, <i>force_option</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Parameters  | <p><i>dbname</i><br/>is the database name</p> <p><i>tablename</i><br/>is the table name</p> <p><i>index_id</i><br/>is the ID of the index you want to fix</p> <p><i>index_name</i><br/>indicates the index that needs to be processed. If a NULL value is used, the index associated with <i>index_id</i> is rebuilt. If <i>index_id</i> is also a NULL value, all the indexes in the system table are rebuilt</p> <p><i>force_option</i><br/>forces Adaptive Server to rebuild the system table index in tempdb. sp_fixindex without the <i>force_option</i> forces the database specified by <i>database_name</i> to be in single-user mode, which is not possible for tempdb. Although the <i>force_option</i> allows you to rebuilt system catalogs in tempdb, it should not be used for user databases.</p> |
| Examples    | <p><b>Example 1</b> Repairs the clustered index on the sysprocedures table of the pubs2 database:</p> <pre>sp_fixindex pubs2, sysprocedures, 1</pre> <p><b>Example 2</b> Rebuilds the index with an index ID of 2 on testdb..sysprocedures:</p> <pre>sp_fixindex 'testdb', 'sysprocedures', 2</pre> <p><b>Example 3</b> Rebuilds the index csysprocedures in the testdb..sysprocedures system table:</p> <pre>sp_fixindex 'testdb', 'sysprocedures', null,<br/>'csysprocedures'</pre>                                                                                                                                                                                                                                                                                                                            |



**Example 4** Rebuilds all available indexes on the sysprocedures table in testdb. If the table has clustered or placement index, sp\_fixindex reclaims the unused space by removing the garbage present in data pages (that is, it rebuilds the data pages):

```
sp_fixindex 'testdb', 'sysprocedures'
```

**Example 5** Rebuilds the index with an with an index ID of 2 on tempdb.sysprocedures:

```
sp_fixindex 'tempdb', 'sysprocedures', 2, null, 1
```

**Example 6** Rebuilds the index csysprocedures for the table tempdb.sysprocedures:

```
sp_fixindex 'tempdb', 'sysprocedures', null,
'sysprocedures', 1
```

**Example 7** Rebuilds all indexes on sysprocedures in tempdb:

```
sp_fixindex 'tempdb', 'sysprocedures', null, null, 1
```

#### Usage

Before you run sp\_fixindex, make sure your database is in single-user mode, and is reconfigured to allow updates to system tables.

After you run sp\_fixindex:

- Use the dbcc checktable command to verify that the corrupted index has been fixed
- Disallow updates to system tables using sp\_configure
- Turn off single-user mode

Do not run sp\_fixindex on user tables.

Repairing a nonclustered index on sysobjects using sp\_fixindex requires additional steps.

---

**Warning!** Do not run sp\_fixindex on the clustered index of the sysobjects or sysindexes tables or on user tables. If you do, sp\_fixindex returns the following error message:

```
The index with id 1 on sysobjects cannot be recreated.
```

---

#### Permissions

Only SA can run sp\_fixindex.

#### Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**Documents** For more information on sp\_fixindex, see:

- Chapter 2, “Encyclopedia of Tasks” in the *Troubleshooting and Error Message Guide*.
- Chapter 13, See “Indexing for Performance” in the *Performance and Tuning Guide: Basics*.

## sp\_flushstats

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Flushes statistics from in-memory storage to the systabstats and sysstatistics system tables.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax      | sp_flushstats [ <i>objname</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Parameters  | <i>objname</i><br>is the name of a table.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Examples    | Flushes statistics for the titles table:<br><br><pre>sp_flushstats titles</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"> <li>• When you do not specify a table with the <i>objname</i> parameter, sp_flushstats acts at the database level.</li> <li>• Some statistics in the systabstats table are updated in in-memory storage locations and flushed to systabstats periodically, to reduce overhead and contention on systabstats.</li> <li>• If you query systabstats using SQL, executing sp_flushstats guarantees that in-memory statistics are flushed to systabstats.</li> <li>• The optdiag command always flushes in-memory statistics before displaying output.</li> <li>• The statistics in sysstatistics are changed only by data definition language commands and do not require the use of sp_flushstats.</li> <li>• The in-memory datachange counters are persistently stored in sysstatistics. These are flushed to disk when sp_flushstats is executed.</li> </ul> |
| Permissions | Only a System Administrator can execute sp_flushstats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## sp\_forceonline\_db

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Provides access to all the pages in a database that were previously marked suspect by recovery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | <pre>sp_forceonline_db <i>dbname</i>,                   {"sa_on"   "sa_off"   "all_users"}</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Parameters  | <p><i>dbname</i><br/>is the name of the database to be brought online.</p> <p><i>sa_on</i><br/>allows only users with the <i>sa_role</i> access to the specified page.</p> <p><i>sa_off</i><br/>revokes access privileges created by a previous invocation of <i>sp_forceonline_page</i> with <i>sa_on</i>.</p> <p><i>all users</i><br/>allows all users access to the specified page.</p>                                                                                                                                                                                     |
| Examples    | <p><b>Example 1</b> Allows the System Administrator access to all suspect pages in the <i>pubs2</i> database:</p> <pre>sp_forceonline_db pubs2, "sa_on"</pre> <p><b>Example 2</b> Revokes access to all suspect pages in the <i>pubs2</i> database from the System Administrator. Now, no one can access the suspect pages in <i>pubs2</i>:</p> <pre>sp_forceonline_db pubs2, "sa_off"</pre> <p><b>Example 3</b> Allows all users access to all pages in the <i>pubs2</i> database:</p> <pre>sp_forceonline_db pubs2, "all_users"</pre>                                        |
| Usage       | <ul style="list-style-type: none"><li>• A page that is forced online is not necessarily repaired. Corrupt pages can also be forced online. Adaptive Server does not perform any consistency checks on pages that are forced online.</li><li>• <i>sp_forceonline_page</i> with <i>all users</i> cannot be reversed. When pages have been brought online for all users, you cannot take them offline again.</li><li>• <i>sp_forceonline_db</i> cannot be used in a transaction.</li><li>• To bring only specific offline pages online, use <i>sp_forceonline_page</i>.</li></ul> |
| Permissions | Only a System Administrator can execute <i>sp_forceonline_db</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Auditing    | Values in <i>event</i> and <i>extrainfo</i> columns from the <i>sysaudits</i> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_forceonline\_page, sp\_listsuspect\_db, sp\_listsuspect\_page, sp\_setsuspect\_granularity, sp\_setsuspect\_threshold

## sp\_forceonline\_object

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Provides access to an index previously marked suspect by recovery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <code>sp_forceonline_object dbname, objname, indid,<br/>{sa_on   sa_off   all_users} [, no_print]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Parameters  | <p><i>dbname</i><br/>is the name of the database containing the index to be brought online.</p> <p><i>objname</i><br/>is the name of the table.</p> <p><i>indid</i><br/>is the index ID of the suspect index being brought online.</p> <p><i>sa_on</i><br/>allows only users with the <i>sa_role</i> to access the specified index.</p> <p><i>sa_off</i><br/>revokes access privileges created by a previous invocation of <code>sp_forceonline_object</code> with <i>sa_on</i>.</p> <p><i>all_users</i><br/>allows all users to access the specified index.</p> <p><i>no_print</i><br/>skips printing a list of other suspect objects after the specified object is brought online.</p> |
| Examples    | <p><b>Example 1</b> Allows a System Administrator to access the index with <i>indid</i> 3 on the <i>titles</i> table in the <i>pubs2</i> database:</p> <pre>sp_forceonline_object pubs2, titles, 3 , sa_on</pre> <p><b>Example 2</b> Revokes access to the index from the System Administrator. Now, no one has access to this index:</p> <pre>sp_forceonline_object pubs2, titles, 3, sa_off</pre> <p><b>Example 3</b> Allows all users to access the index on the <i>titles</i> table in the <i>pubs2</i> database:</p> <pre>sp_forceonline_object pubs2, titles, 3, all_users</pre>                                                                                                   |
| Usage       | <ul style="list-style-type: none"><li>• If an index on a data-only-locked table has suspect pages, the entire index is taken offline during recovery. Offline indexes are not considered by the query optimizer. Indexes on allpages-locked tables are not taken completely offline during recovery; only individual pages of these indexes are taken offline. These pages can be brought online with <code>sp_forceonline_page</code>.</li></ul>                                                                                                                                                                                                                                        |

- Use `sp_listsuspect_object` to see a list of databases that are offline.
- To repair a suspect index, use `sp_forceonline_object` with `sa_on` access. Then, drop and re-create the index.

**Note** If the index is on `systabstats` or `sysstatistics` (the only data-only-locked system tables) call Sybase Technical Support for assistance.

- `sp_forceonline_object` with `all_users` cannot be reversed. When an index has been brought online for all users, you cannot take it offline again.
- An index that is forced online is not necessarily repaired. Corrupt indexes can be forced online. Adaptive Server does not perform any consistency checks on indexes that are forced online.
- `sp_forceonline_object` cannot be used in a transaction.
- `sp_forceonline_object` works only for databases in which the recovery fault isolation mode is “page.” Use `sp_setsuspect_granularity` to display the recovery fault isolation mode for a database.
- To bring all of a database’s offline pages and indexes online in a single command, use `sp_forceonline_db`.

Permissions Only a System Administrator can execute `sp_forceonline_object`.

Auditing Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Documents** For more information on recovery fault isolation, see the *System Administration Guide*.

**System procedures** `sp_listsuspect_object`, `sp_setsuspect_granularity`

## sp\_forceonline\_page

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Provides access to pages previously marked suspect by recovery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Syntax      | sp_forceonline_page <i>dbname</i> , <i>pgid</i> ,<br>{ "sa_on"   "sa_off"   "all_users" }                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>dbname</i><br/>is the name of the database containing the pages to be brought online.</p> <p><i>pgid</i><br/>is the page identifier of the page being brought online.</p> <p>sa_on<br/>allows only users with the sa_role access to the specified page.</p> <p>sa_off<br/>revokes access privileges created by a previous invocation of sp_forceonline_page with sa_on.</p> <p>all_users<br/>allows all users access to the specified page.</p>                                                                                                                                                                                                                                                                                                                                |
| Examples    | <p><b>Example 1</b> Allows a System Administrator access to page 312 in the pubs2 database:</p> <pre>sp_forceonline_page pubs2, 312, "sa_on"</pre> <p><b>Example 2</b> Revokes access to page 312 in the pubs2 database from the System Administrator. Now, no one has access to this page:</p> <pre>sp_forceonline_page pubs2, 312, "sa_off"</pre> <p><b>Example 3</b> Allows all users access to page 312 in the pubs2 database:</p> <pre>sp_forceonline_page pubs2, 312, "all_users"</pre>                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"><li>• sp_forceonline_page with all_users cannot be reversed. When pages have been brought online for all users, you cannot take them offline again.</li><li>• A page that is forced online is not necessarily repaired. Corrupt pages can also be forced online. Adaptive Server does not perform any consistency checks on pages that are forced online.</li><li>• sp_forceonline_page cannot be used in a transaction.</li><li>• sp_forceonline_page works only for databases in which the recovery fault isolation mode is "page." Use sp_setsuspect_granularity to display the recovery fault isolation mode for a database.</li><li>• To bring all of a database's offline pages online in a single command, use sp_forceonline_db.</li></ul> |



Permissions Only a System Administrator can use `sp_forceonline_page`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_forceonline_db`, `sp_listsuspect_db`, `sp_listsuspect_page`, `sp_setsuspect_granularity`, `sp_setsuspect_threshold`

## sp\_foreignkey

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Defines a foreign key on a table or view in the current database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | <code>sp_foreignkey <i>tablename</i>, <i>pktabname</i>, <i>col1</i> [, <i>col2</i>] ...<br/>[, <i>col8</i>]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>tablename</i><br/>is the name of the table or view that contains the foreign key to be defined.</p> <p><i>pktabname</i><br/>is the name of the table or view that has the primary key to which the foreign key applies. The primary key must already be defined.</p> <p><i>col1</i><br/>is the name of the first column that makes up the foreign key. The foreign key must have at least one column and can have a maximum of eight columns.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Examples    | <p><b>Example 1</b> The primary key of the publishers table is the pub_id column. The titles table also contains a pub_id column, which is a foreign key of publishers:</p> <pre>sp_foreignkey titles, publishers, pub_id</pre> <p><b>Example 2</b> The primary key of the parts table has been defined with sp_primarykey as the partnumber and subpartnumber columns. The orders table contains the columns part and subpart, which make up a foreign key of parts:<pre>sp_foreignkey orders, parts, part, subpart</pre></p>                                                                                                                                                                                                                                                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"><li>• sp_foreignkey adds the key to the syskeys table. Keys make explicit a logical relationship that is implicit in your database design.</li><li>• sp_foreignkey does not enforce referential integrity constraints; use the foreign key clause of the create table or alter table command to enforce a foreign key relationship.</li><li>• The number and order of columns that make up the foreign key must be the same as the number and order of columns that make up the primary key. The datatypes (and lengths) of the primary and foreign keys must agree, but the null types need not agree.</li><li>• The installation process runs sp_foreignkey on the appropriate columns of the system tables.</li><li>• To display a report on the keys that have been defined, execute sp_helpkey.</li><li>• You cannot use a Java datatype with sp_foreignkey.</li></ul> |
| Permissions | Only the owner of the table or view can execute sp_foreignkey.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## See also

**Commands** alter table, create table, create trigger

**System procedures** sp\_commonkey, sp\_dropkey, sp\_helpjoins, sp\_helpkey, sp\_primarykey

## sp\_freeldll

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Unloads a dynamic link library (DLL) that was previously loaded into XP Server memory to support the execution of an extended stored procedure (ESP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | sp_freeldll <i>dll_name</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <i>dll_name</i><br>is the file name of the DLL being unloaded from XP Server memory.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Examples    | Unloads the <i>sqlsrvdll.dll</i> DLL:<br><pre>sp_freeldll "sqlsrvdll.dll"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Usage       | <ul style="list-style-type: none"> <li>• sp_freeldll cannot be executed from within a transaction.</li> <li>• sp_freeldll cannot free the DLL of a system ESP.</li> <li>• An alternative to unloading a DLL explicitly, using sp_freeldll, is to specify that DLLs always be unloaded after the ESP request that invoked them terminates. To do this, set the esp unload dll configuration parameter to 1 or start xpserver with the -u option.</li> <li>• sp_freeldll can be used to update an ESP function in a DLL without shutting down XP Server or Adaptive Server.</li> <li>• If you use sp_freeldll to unload a DLL that is in use, sp_freeldll will succeed, causing the ESP currently using the DLL to fail.</li> </ul> |
| Permissions | Only a System Administrator can execute sp_freeldll.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_addextendedproc, sp\_dropextendedproc, sp\_helpextendedproc

## sp\_getmessage

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Retrieves stored message strings from <code>sysmessages</code> and <code>sysusermessages</code> for <code>print</code> and <code>raiserror</code> statements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Syntax      | <code>sp_getmessage message_num, result output [, language]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><i>message_num</i><br/>is the number of the message to be retrieved.</p> <p><i>result output</i><br/>is the variable that receives the returned message text, followed by a space and the keyword <code>output</code>. The variable must have a datatype of <code>char</code>, <code>unichar</code>, <code>nchar</code>, <code>varchar</code>, <code>univarchar</code>, or <code>nvarchar</code>.</p> <p><i>language</i><br/>is the language of the message to be retrieved. <i>language</i> must be a valid language name in <code>syslanguages</code> table. If you include <i>language</i>, the message with the indicated <i>message_num</i> and <i>language</i> is retrieved. If you do not include <i>language</i>, then the message for the default session language, as indicated by the variable <code>@@langid</code>, is retrieved.</p> |
| Examples    | <p><b>Example 1</b> Retrieves message number 20001 from <code>sysusermessages</code>:</p> <pre>declare @myvar varchar(200) exec sp_getmessage 20001, @myvar output</pre> <p><b>Example 2</b> Retrieves the French language version of message number 20010 from <code>sysusermessages</code>:</p> <pre>declare @myvar varchar(200) exec sp_getmessage 20010, @myvar output, french</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Usage       | <ul style="list-style-type: none"> <li>Any application can use <code>sp_getmessage</code>, and any user can read the messages stored in <code>sysmessages</code> and <code>sysusermessages</code>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Permissions | Any user can execute <code>sp_getmessage</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Auditing    | Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**Commands** print, raiserror

**System procedures** sp\_addmessage, sp\_dropmessage

## sp\_grantlogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows only</b> Assigns Adaptive Server roles or default permissions to Windows users and groups when Integrated Security mode or Mixed mode (with Named Pipes) is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | <code>sp_grantlogin {<i>login_name</i>   <i>group_name</i>}<br/>["<i>role_list</i>"   default]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Parameters  | <p><i>login_name</i><br/>is the network login name of the Windows NT user.</p> <p><i>group_name</i><br/>is the Windows NT group name.</p> <p><i>role_list</i><br/>is a list of the Adaptive Server roles granted. The role list can include one or more of the following role names: <i>sa_role</i>, <i>sso_role</i>, <i>oper_role</i>. If you specify more than one role, separate the role names with spaces, not commas.</p> <p>default<br/>specifies that the <i>login_name</i> or <i>group_name</i> receive default permissions assigned with the grant statement or <i>sp_role</i> procedure.</p>                                                   |
| Examples    | <p><b>Example 1</b> Assigns the Adaptive Server <i>oper_role</i> to the Windows NT user “jeanluc”:</p> <pre>sp_grantlogin jeanluc, oper_role</pre> <p><b>Example 2</b> Assigns the default value to the Windows NT user “valle”. User “valle” receives any permissions that were assigned to her via the <i>grant</i> command or <i>sp_role</i> procedure:</p> <pre>sp_grantlogin valle</pre> <p><b>Example 3</b> Assigns the Adaptive Server <i>sa_role</i> and <i>sso_role</i> to all members of the Windows NT administrators group:</p> <pre>sp_grantlogin Administrators, "sa_role sso_role"</pre>                                                   |
| Usage       | <ul style="list-style-type: none"> <li>• You must create the Windows NT login name or group before assigning roles with <i>sp_grantlogin</i>. See your Windows NT documentation for details.</li> <li>• <i>sp_grantlogin</i> is active only when Adaptive Server is running in Integrated Security mode or Mixed mode when the connection is Named Pipes. If Adaptive Server is running under Standard mode or Mixed mode with a connection other than Named Pipes, use <i>grant</i> and <i>sp_role</i> instead.</li> <li>• If you do not specify a <i>role_list</i> or <i>default</i>, the procedure automatically assigns the default value.</li> </ul> |

- The default value does not indicate an Adaptive Server role. It specifies that the user or group should receive any permissions that were assigned to it via the grant command or sp\_role procedure.
- Using sp\_grantlogin with an existing *login\_name* or *group\_name* overwrites the user's or group's existing roles.

Permissions

Only a System Administrator can execute sp\_grantlogin.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                                  |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38                       | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** grant, setuser

**System procedures** sp\_addlogin, sp\_displaylogin, sp\_droplogin, sp\_locklogin, sp\_logininfo, sp\_modifylogin, sp\_revokelgin, sp\_role



## sp\_ha\_admin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Performs administrative tasks on Adaptive Servers configured with Sybase Failover in a high availability system. <code>sp_ha_admin</code> is installed with the <i>installhavss</i> script on UNIX platforms or the <i>insthasv</i> script on Windows NT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <code>sp_ha_admin [cleansessions   help]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Parameters  | <p><code>cleansessions</code><br/>removes old entries from <code>sysessions</code>. Old <code>sysessions</code> entries are typically left behind because either Adaptive Server failed to clean up <code>sysessions</code> during a reboot, or because a client failed to connect to Adaptive Server.</p> <p><code>help</code><br/>displays the syntax for <code>sp_ha_admin</code>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Examples    | <p><b>Example 1</b> Removes old entries from <code>sysessions</code> left by a client connection that did not exit correctly:</p> <pre>sp_ha_admin cleansessions (return status = 0)</pre> <p><b>Example 2</b> Displays the syntax for <code>sp_ha_admin</code>:</p> <pre>sp_ha_admin "help"  sp_ha_admin Usage: sp_ha_admin command [, option1 [, option2]] sp_ha_admin commands: sp_ha_admin 'cleansessions' sp_ha_admin 'help' (return status = 0)</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"> <li><code>sp_ha_admin</code> performs administrative tasks on Adaptive Server that are configured for Sybase's Failover in a high availability system. <code>sp_ha_admin</code> is not installed using the <i>installmaster</i> script; instead, use the <i>installhavss</i> script that installs and configures for Sybase's Failover (<i>insthasv</i> on Windows NT).</li> <li><code>sp_ha_admin</code> returns a 0 if it successfully cleaned up <code>sysessions</code>, and returns a 1 if it encounters an error.</li> <li><code>sp_ha_admin</code> enters a message in the errorlog if it could not remove any entries from <code>sysessions</code> (for example, if it could not get a lock on <code>sysessions</code>).</li> <li>To view all the current entries in <code>sysessions</code>, enter: <pre>select * from sysessions</pre> </li> </ul> |
| Permissions | Only the a System Administrator with the <code>ha_role</code> can execute <code>sp_ha_admin</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

## sp\_help

**Description** Reports information about a database object (any object listed in sysobjects) and about system or user-defined datatypes, as well as user-defined functions, computed columns and function-based indexes. Column displays optimistic\_index\_lock.

**Syntax** sp\_help [*objname*]

**Parameters** *objname*  
is the name of any object in sysobjects or any user-defined datatype or system datatype in systypes. You cannot specify database names. *objname* can include tables, views, stored procedures, logs, rules, defaults, triggers, referential constraints, encryption keys, and check constraints, but refers to tables when you enable optimistic\_index\_lock. Use owner names if the object owner is not the user running the command and is not the Database Owner.

**Examples** **Example 1** Displays a list of objects in sysobjects and displays each object's name, owner, and object type. Also displays a list of each user-defined datatype in systypes, indicating the datatype name, storage type, length, null type, default name, and rule name. Null type is 0 (null values not allowed) or 1 (null values allowed):

```
sp_help
```

**Example 2** Displays information about a partitioned publishers table. sp\_help also lists any attributes assigned to the specified table and its indexes, giving the attribute's class, name, integer value, character value, and comments.

```
sp_help publishers
```

| Name       | Owner | Object_Type | Create_date        |
|------------|-------|-------------|--------------------|
| publishers | dbo   | user table  | Oct 7 2005 11:14AM |

| Column_name      | Type                   | Length   | Prec | Scale | Nulls | Default_name | Rule_name  |
|------------------|------------------------|----------|------|-------|-------|--------------|------------|
| Access_Rule_name | Computed_Column_object | Identity |      |       |       |              |            |
| pub_id           | char                   | 4        | NULL | NULL  | 0     | NULL         | pub_idrule |
|                  | NULL                   |          |      | NULL  | 0     |              |            |
| pub_name         | varchar                | 40       | NULL | NULL  | 1     | 0            | NULL       |
|                  | NULL                   |          |      | NULL  | 0     |              |            |
| city             | varchar                | 20       | NULL | NULL  | 1     | 0            | NULL       |
|                  | NULL                   |          |      | NULL  | 0     |              |            |
| state            | char                   | 2        | NULL | NULL  | 1     | 0            | NULL       |
|                  | NULL                   |          |      | NULL  | 0     |              |            |

```
Object does not have any indexes.
```

```

keytype  object      related_objs  object_keys      related_keys
-----  -
primary  publishers -- none --  pub_id,*,*,*,*,*,*,*  *,*,*,*,*,*,*,*

name      type      partition_type  partitions  partition_keys
-----  -
publishers  base table  roundrobin      3  NULL

partition_name      partition_id  pages  segment  create_date
-----
publishers_608002166  608002166      1  default  Oct 13 2005 11:18AM
publishers_1116527980 1116527980      1  default  Oct 13 2005 11:18AM
publishers_1132528037 1132528037      1  default  Oct 13 2005 11:19AM

```

```

Partition_Conditions
-----
NULL

```

```

Avg_pages  Max_pages  Min_pages  Ratio(Max/Avg)  Ratio(Min/Avg)
-----
1          1          1  1.0000000      1.0000000

```

Lock scheme Allpages  
The attribute 'exp\_row\_size" is not applicable to tables with allpages lock scheme.

```

exp_row  reservepagegap  fillfactor  max_rows_per_page  identity_gap
-----
0        0            0            0            0

concurrency_opt_threshold  optimistic_index_lock  dealloc_first_txtpg
-----
0                          0                          0

```

**Example 3** Displays information about a partitioned titles table:

sp\_help titles

```

Name          Owner          Object_Type      Create_date
-----
titles        db             user table      Oct 7 2005 11:14AM
(1 row affected)

Column_name  Type  Length  Prec  Scale  Nulls  Default_name  Rule_name  Access_Rule_name
-----
Identity
-----
title_id    tid      6  NULL  NULL    0  NULL          title_idrule  NULL
0
title      varchar  80  NULL  NULL    0  NULL          NULL          NULL
0
type       char    12  NULL  NULL    0  typedflt      NULL          NULL

```

```

0
pub_id      char      4 NULL NULL      1 NULL      NULL      NULL
0
price       money     8 NULL NULL      1 NULL      NULL      NULL
0
advance     money     8 NULL NULL      1 NULL      NULL      NULL
0
total_sales int       4 NULL NULL      1 NULL      NULL      NULL
0
notes       varchar    200 NULL NULL     1 NULL      NULL      NULL
0
pubdate     datetime   8 NULL NULL      0 datedflt  NULL      NULL
0
contract    bit        1 NULL NULL      0 NULL      NULL      NULL
0
index_name  index_description  index_keys

```

Object has the following indexes

```

index_name  index_keys      index_description  index_max_rows_per_page
index_fillfactor  index_reservepagegap  index_created      index_local
-----
title_idx   total_sales     clustered          0
0
0 Oct 13 2005 5:20PM Local Index

```

```

index_ptn_name  index_ptn_seg
-----
p1              default
p2              default
p3              default
title_idx_98505151  default

```

```

keytype  object      related_object  object_keys
related_keys
-----
foreign  roysched    titles          title_id, *, *, *, *, *, *, * title_id, *, *,
*, *, *, *, *
foreign  salesdetail titles          title_id, *, *, *, *, *, *, * title_id, *, *,
*, *, *, *
foreign  titleauthor titles          title_id, *, *, *, *, *, *, * title_id, *, *,
*, *, *, *
foreign  titles      publishers      pub_id, *, *, *, *, *, *, *
pub_id, *, *, *, *, *, *, *
primary  titles      -- none --      title_id, *, *, *, *, *, *, *
*, *, *, *, *, *, *, *

```

```

name      type      partition_type  partitions  partition_keys
-----
titles    base table  range          4          pubdate

```

```

partition_name  partition_id  pages  segment  create_date
-----
q1              937051343      1  default  Oct 13 2005 5:20PM
q2              953051400      1  default  Oct 13 2005 5:20PM
q3              969051457      1  default  Oct 13 2005 5:20PM
q4              985051514      1  default  Oct 13 2005 5:20PM

```

Partition\_Conditions

```

-----
VALUES <= ("3/31/2006")
VALUES <= ("6/30/2006")
VALUES <= ("9/30/2006")
VALUES <= ("12/31/2006")
VALUES <= ("3'31'2006")

```

```

Avg_pages  Max_pages  Min_pages  Ratio(Max/Avg)  Ratio(Min/Avg)
-----
          1           1           1  1.000000      1.000000

```

Lock scheme Allpages

The attribute 'exp\_row\_size" is not applicable to tables with allpages lock scheme.

```

exp_row  reservepagegap  fillfactor  max_rows_per_page  identity_gap
-----
        0           0           0           0           0

concurrency_opt_threshold  optimistic_index_lock  dealloc_first_txtpg
-----
                          0                          0                          0

```

**Example 4** Displays information about the trigger marytrig owned by user "mary". The quotes are needed, because the period is a special character:

```

sp_help "mary.marytrig"

Name          Owner          Object_type
-----
marytrig     mary           trigger

Data_located_on_segment  When_created
-----
not applicable           Mar 20 2002  2:03PM

```

**Example 5** Displays information about the system datatype money:

sp\_help money

```

Type_name  Storage_type  Length  Prec  Scale  Nulls  Defaul_name
-----

```

```

Rule_name  Access_Rule_name  Identity
-----  -----  -----
money      money                    8  NULL  NULL  1  NULL
NULL      NULL                      0

```

**Example 6** Displays information about the user-defined datatype `identity`. The report indicates the base type from which the datatype was created, whether it allows nulls, the names of any rules and defaults bound to the datatype, and whether it has the `IDENTITY` property:

```
sp_help identity
```

```

Type_name  Storage_type  Length  Prec  Scale  Nulls  Defaul_name
-----  -----  -----  -----  -----  -----  -----
Rule_name  Access_Rule_name  Identity
-----  -----  -----
identity   numeric         4  NULL  NULL  1  NULL
NULL      NULL            1

```

Shows a new column, indicating whether optimistic index locking is enabled. 1 indicates that the option is enabled; 0 indicates that it is not.

```
sp_help "mytable"
```

```

-----
exp_row_size  reserve  pagegap  fillfactor  max_rows_per_page
-----
1            0        0        0            0
concurrency_opt_threshold  optimistic_index_lock
-----
0            1

```

**Example 7** Shows a virtual computed column:

```
alter table authors add fullname as au_fname + ' ' + au_lname
sp_help authors
```

Object has the following computed columns

```

Column_Name  Property
-----  -----
fullname     virtual

```

```
Text
```

```
-----
AS au_fname + ' ' + au_lname
```

**Example 8** Shows a virtual computed column to a materialized computed column:

```
alter table authors modify fullname materialized
sp_help authors
```

Object has the following computed columns

```
Column_Name Property
-----
fullname      materialized
```

Text

```
-----
AS au_fname + ' ' + au_lname
MATERIALIZED
```

**Example 9** The result set for `sp_help table_name` includes the `Decrypt_Default_name` column, which indicates the decrypt default name for the column. For example, if you run the following:

```
create table encr_table(col1 int encrypt decrypt_default 1)
```

When you run `sp_help` on `encr_table`, it shows the following:

```
Column_name Type Length Prec Scale Nulls Default_name Rule_name Access_Rule_name
Computed_Column_object Identity Encrypted Decrypt_Default_name
-----
c1          int      4 NULL NULL      0 NULL      NULL      NULL
NULL                                     1 encr_table_col1_1036527695
```

## Usage

- `sp_help` looks for an object in the current database only.
- `sp_help` follows the Adaptive Server rules for finding objects:
  - If you do not specify an owner name, and you own an object with the specified name, `sp_help` reports on that object.
  - If you do not specify an owner name, and do not own an object of that name, but the Database Owner does, `sp_help` reports on the Database Owner's object.
  - If neither you nor the Database Owner owns an object with the specified name, `sp_help` reports an error condition, even if an object with that name exists in the database for a different owner. Qualify objects that are owned by database users other than yourself and the Database Owner with the owner's name, as shown in Example 4.
  - If both you and the Database Owner own objects with the specified name, and you want to access the Database Owner's object, specify the name in the format `dbo.objectname`.



- `sp_help` works on temporary tables if you issue it from `tempdb`.
- Columns with the `IDENTITY` property have an “Identity” value of 1; others have an “Identity” value of 0. In example 2, there are no `IDENTITY` columns.
- `sp_help` lists any indexes on a table, including indexes created by defining unique or primary key constraints in the `create table` or `alter table` statements. It also lists any attributes associated with those indexes. However, `sp_help` does not describe any information about the integrity constraints defined for a table. Use `sp_helpconstraint` for information about any integrity constraints.
- `sp_help` displays the following new settings:
  - The locking scheme, which can be set with `create table` and changed with `alter table`
  - The expected row size, which can be set with `create table` and changed with `sp_chgattribute`
  - The reserve page gap, which can be set with `create table` and changed with `sp_chgattribute`
  - The row lock promotion settings, which can be set or changed with `sp_setpglockpromote` and dropped with `sp_droprowlockpromote`
- `sp_help` includes the report from:
  - `sp_helpindex` – showing the order of the keys used to create the index and the space management properties
  - `sp_helppartition` – showing the partition information of the table
  - `sp_helpcomputedcolumn` – showing the computed column information of the table
- When Component Integration Services is enabled, `sp_help` displays information on the storage location of remote objects.
- `sp_help` displays information about encryption keys. When a key name is specified as the parameter to `sp_help`, the command lists the key’s name, owner, object type, and creation date.
- `sp_help tablename` indicates if a column is encrypted, including the name of the decrypt default on the column, if one exists.

Permissions

Any user can execute `sp_help`.

Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documents** sp\_help reports information about SQLJ stored procedures and SQLJ functions. See *Java in Adaptive Server Enterprise* for more information about SQLJ routines.

**Commands** alter table, create table

**System procedures** sp\_chgattribute, sp\_droprowlockpromote, sp\_helppartition, sp\_helpcomputedcolumn, sp\_helpconstraint, sp\_helpindex, sp\_setpglockpromote

## sp\_help\_resource\_limit

|             |                                                                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports on resource limits.                                                                                                                                                                                                                       |
| Syntax      | sp_help_resource_limit [ <i>name</i> [, <i>appname</i> [, <i>limittime</i> [, <i>limitday</i> [, <i>scope</i> [, <i>action</i> [, <i>verbose</i> ]]]]]]]]]                                                                                        |
| Parameters  | <p><i>name</i></p> <p>is the Adaptive Server login to which the limits apply. For information about limits that govern a particular login, specify the login <i>name</i>. For information about limits without regard to login, specify null.</p> |

---

**Note** If you are not a System Administrator, specify your own login, or a login of NULL, to display information about the resource limits that apply to you.

---

*appname*

is the name of the application to which the limit applies. For information about limits that govern a particular application, specify the application name that the client program passes to the Adaptive Server in the login packet. For information about limits without regard to application, specify null.

*limittime*

is the time during which the limit is enforced. For information about limits in effect at a given time, specify the time, with a value between “00:00” and “23:59”, using the following form:

"*HH:MM*"

For information about limits without regard to time, specify null.

*limitday*

is any day on which the limit is enforced. For information about resource limits in effect on a given day of the week, specify the full weekday name for the default server language, as stored in the `syslanguages` system table of the master database. For information about limits without regard to the days on which they are enforced, specify null.

*scope*

is the scope of the limit. Specify one of the following:

| Scope code | For help on all limits that govern                                          |
|------------|-----------------------------------------------------------------------------|
| 1          | Queries                                                                     |
| 2          | Query batches (one or more SQL statements sent by the client to the server) |
| 4          | Transactions                                                                |

| Scope code | For help on all limits that govern                                                                                                         |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 6          | Both query batches and transactions                                                                                                        |
| NULL       | The specified <i>name</i> , <i>appname</i> , <i>limittime</i> , <i>limitday</i> , and <i>action</i> , without regard to their <i>scope</i> |

*action*

is the action to take when the limit is exceeded. Specify one of the following:

| Action code | For help on all limits that                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1           | Issue a warning                                                                                                                                           |
| 2           | Abort the query batch                                                                                                                                     |
| 3           | Abort the transaction                                                                                                                                     |
| 4           | Kill the session                                                                                                                                          |
| NULL        | Govern the specified <i>name</i> , <i>appname</i> , <i>limittime</i> , <i>limitday</i> , and <i>scope</i> , without regard to the <i>action</i> they take |

*verbose*

when used, the output is displayed in the verbose mode, with value 1 or 0 (zero).

Examples

**Example 1** Lists all resource limits stored in the sysresourcelimits system table:

```
sp_help_resource_limit
```

**Example 2** Lists all limits for the user “joe\_user”:

```
sp_help_resource_limit joe_user
```

**Example 3** Lists all limits for the application *my\_app*:

```
sp_help_resource_limit NULL, my_app
```

**Example 4** Lists all limits enforced at 9:00 a.m.:

```
sp_help_resource_limit NULL, NULL, "09:00"
```

**Example 5** An alternative way of listing the limits enforced at 9:00 a.m.:

```
sp_help_resource_limit @limittype = "09:00"
```

**Example 6** Lists all limits enforced on Mondays:

```
sp_help_resource_limit NULL, NULL, NULL, Monday
```

**Example 7** Lists any limit in effect for “joe\_user” on Mondays at 9:00 a.m.

```
sp_help_resource_limit joe_user, NULL, "09:00", Monday
```

**Example 8** To list all limits in verbose mode:

```
sp_help_resource_limit null,null,null,null,null,null,1
```

**Example 9** To list all resource limits in verbose mode:

```
sp_help_resource_limit @verbose=1
```

|             |                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage       | <ul style="list-style-type: none"> <li>• <code>sp_help_resource_limit</code> reports on all resource limits, limits for a given login or application, limits in effect at a given time or day of the week, or limits with a given scope or action.</li> </ul> |
| Permissions | Any user can execute <code>sp_help_resource_limit</code> to list his or her own resource limits. Only a System Administrator can execute <code>sp_help_resource_limit</code> to list limits that apply to other users.                                        |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                              |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Documents** See the *System Administration Guide* for more information on resource limits.

**System procedures** `sp_add_resource_limit`, `sp_drop_resource_limit`, `sp_modify_resource_limit`

## sp\_help\_qpgroup

**Description** Reports information on an abstract plan group.

**Syntax** sp\_help\_qpgroup [ *group* [, *mode* ]]

**Parameters** *group*  
 is the name of an abstract plan group.

*mode*  
 is the type of report to print, one of the following:

| Mode    | Information returned                                                                                                                                                                                                                                    |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| full    | The number of rows and number of plans in the group, the number of plans that use two or more rows, the number of rows and plan IDs for the longest plans, and number of hash keys and hash key collision information. This is the default report mode. |
| stats   | All of the information from the “full” report, except hash key information.                                                                                                                                                                             |
| hash    | The number of rows and number of abstract plans in the group, the number of hash keys, and hash-key collision information.                                                                                                                              |
| list    | The number of rows and number of abstract plans in the group, and the following information for each query/plan pair: hash key, plan ID, first few characters of the query, and the first few characters of the plan.                                   |
| queries | The number of rows and number of abstract plans in the group, and the following information for each query: hash key, plan ID, first few characters of the query.                                                                                       |
| plans   | The number of rows and number of abstract plans in the group, and the following information for each plan: hash key, plan ID, first few characters of the plan.                                                                                         |
| counts  | The number of rows and number of abstract plans in the group, and the following information for each plan: number of rows, number of characters, hash key, plan ID, first few characters of the query.                                                  |

**Examples** **Example 1** Reports summary information about all abstract plan groups in the database:

```
sp_help_qpgroup

Group                GID        Plans
-----
ap_stdin              1           0
ap_stdout             2           0
dev_test              3          209
```

**Example 2** Reports on the test\_plans group:

```
sp_help_qpgroup test_plans

Query plans group 'test_plans', GID 8

Total Rows  Total QueryPlans
```

```

-----
          6              3
sysqueryplans rows consumption, number of query plans per row count

```

```

Rows          Plans
-----
          2              3

```

```

Hashkeys
-----
          3

```

There is no hash key collision in this group.

- Usage**
- When used with an abstract plan group name, and no mode parameter, the default mode for `sp_help_qpgroup` is full.
  - Hash-key collisions indicate that more than one plan for a particular user has the same hash-key value. When there are hash key collisions, the query text of each query with the matching hash key must be compared to the user's query text in order to identify the matching query, so performance is slightly degraded.

**Permissions** Any user can execute `sp_help_qpgroup`.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

| <b>Event</b> | <b>Audit option</b>         | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | <code>exec_procedure</code> | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **System procedures** `sp_help_qplan`

## sp\_help\_qplan

**Description** Reports information about an abstract plan.

**Syntax** sp\_help\_qplan *id* [, *mode* ]

**Parameters** *id*  
is the ID of the abstract plan.

*mode*  
is the type of report to print, one of the following:

| mode  | Information returned                                                                                                                        |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------|
| full  | The plan ID, group ID, and hash key, and the full query and plan text.                                                                      |
| brief | The same as full, but only prints about 80 characters of the query and plan, rather than the full query and plan. This is the default mode. |
| list  | The hash key, ID, and first 20 characters of the query and plan.                                                                            |

**Examples** **Example 1** Prints the brief abstract plan report:

```
sp_help_qplan 800005881
gid          hashkey      id
-----
           5  2054169974   937054374

query
-----
select type, avg(price) from titles group by type

query_plan
-----
( plan
  ( store Worktab1
    ( i_scan type_price titles )
  )
  ( t_scan ( ...
```

**Example 2** Prints the full abstract plan report:

```
sp_help_qplan 784005824, full
```

**Usage** • If you do not supply a value for the mode parameter, the default is brief.

**Permissions** Any user can execute sp\_help\_qplan to see the abstract plan of a query that he or she owns. Only the System Administrator and the Database Owner can display an abstract plan owned by another user.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:



| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_find\_qplan, sp\_help\_qpgroup

## sp\_helpapptrace

**Description** Determines which sessions Adaptive Server is tracing. sp\_helpapptrace returns the server process IDs (spids) for all the sessions Adaptive Server is tracing, the spids of the sessions tracing them, and the name of the tracefile.

**Syntax** sp\_helpapptrace

**Examples**

```
sp_helpapptrace
```

| traced_spid | tracer_spid | trace_file                |
|-------------|-------------|---------------------------|
| -----       | -----       | -----                     |
| 11          | exited      | /tmp/myfile1              |
| 13          | 14          | /tpcc/sybase.15_0/myfile2 |

**Usage** sp\_helpapptrace returns these columns:

- traced\_spid – spid of the session you are tracing.
- tracer\_spid – spid of the session that traced\_spid is tracing. Prints “exited” if the tracer\_spid session has exited.
- trace\_file – full path to the tracefile.

**Rebinding a trace**

If a session is tracing another session, but quits without disabling the tracing, Adaptive Server allows a new session to rebind with the earlier trace. This means that a sa or sso is not required to finish every trace they start, but can start a trace session, quit, and then rebind to this trace session

## sp\_helppartition

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Lists partition-related information of a table or index.                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | sp_helppartition [ <i>tablename</i> [, { null   <i>indexname</i>   'all' }], <i>partitionname</i> ] ]                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <p><i>tablename</i><br/>is the name of a table in the current database.</p> <p>null<br/>specifies that information about base table partitions is to be listed.</p> <p><i>indexname</i><br/>is the name of an index in the current table. Information about this index displays.</p> <p>'all'<br/>specifies that all index partition information is to be listed.</p> <p><i>partitionname</i><br/>is the name of the partition in the base table or index.</p> |
| Examples    | <b>Example 1</b> Returns summary and detailed information about the data partitions in the titles table.                                                                                                                                                                                                                                                                                                                                                       |

```
sp_helppartition titles
go
```

```
name          type          partition_type  partitions  partition_keys
-----
titles        base table range                5  total_sales
```

(1 row affected)

```
partition_name  partition_id  pages  row_count  segment  create_date
-----
smallsales      1440005130    1      5  titleseg1  Sep 26 2005 5:44PM
smallsales2     1456005187    1      0  titleseg2  Sep 26 2005 5:44PM
smallsales3     1472005244    1      2  titleseg3  Sep 26 2005 5:44PM
mediumsales4    1488005301    1      8  titleseg4  Sep 26 2005 5:44PM
bigsales5       1504005358    1      3  titleseg5  Sep 26 2005 5:44PM
```

```
Partition_Conditions
```

```
-----
VALUES <= (1000)
VALUES <= (2000)
VALUES <= (3000)
VALUES <= (10000)
VALUES <= (25000)
```

```

Avg_pages   Max_pages   Min_pages   Ratio (Max/Avg)   Ratio (Min/Avg)
-----
1           1           1           1.000000          1.000000
(return status = 0)

```

**Example 2** Returns summary partition information about the titles table and detailed information about the smallsales data partition.

```
sp_helppartition titles, null, smallsales
```

```

name        type        partition_type partitions  partition_keys
-----
titles      base table range                5 total_sales

```

(1 row affected)

```

partition_name partition_id pages  row_count segment  create_date
-----
smallsales      1440005130    1      5  titleseg1 Sep 26 2005 5:44PM

```

Partition\_Conditions

```

-----
VALUES <= (1000)
(return status = 0)

```

**Example 3** First, creates the nonclustered index ncidx\_local on the my\_titles table, then returns summary partition information about my\_titles and detailed information on the partition ncip4 on ncidx\_local.

```

create nonclustered index ncidx_local on my_titles(title_id) local index
(ncip1, ncip2, ncip3, ncip4, ncip5)

```

```

go
sp_helppartition my_titles, ncidx_local, ncip4
go

```

```

name        type        partition_type partitions  partition_keys
-----
ncidx_local local index range                5 total_sales

```

(1 row affected)

```

partition_name partition_id pages  row_count segment  create_date
-----
ncip4          1584005643    1      8  default  Sep 26 2005 6:06PM

```

Partition\_Conditions

```

-----

```

```
VALUES <= (10000)
(return status = 0)
```

### Usage

- `sp_helppartition` lists partition related information at the table, index, and partition level. The table- or index-level partition information includes index type (whether it is a local or global index), partition type, number of partitions, and partition keys, if applicable. For each partition, the information include partition name, id, number of pages, segment name, create date, and the partition condition if applicable.

The summary information displays the number of pages per partition, the minimum and maximum number of pages, and the ratio between the average number of pages and the maximum or minimum number.

- If a table name is not supplied, `sp_helppartition` lists the owner, table name, number of partitions, and the partition type of all user tables in the current database.
- If 'all' is specified instead of an index name or null, `sp_helppartition` lists the table- and index-level partition information for each index of the specified table and of the base table.
- If a particular index is specified, `sp_helppartition` lists the index-level information for that index.
  - If the partition name is not specified, `sp_helppartition` displays the partition-level information for all partitions in the index, and summary information for the partitions.
  - If the partition name is specified, `sp_helppartition` displays only the partition-level information for that partition.
- If only the table name is specified, `sp_helppartition` displays table-level index partition information for the base table and partition-level information for all partitions in the base table.
- If null is specified instead of an index name, and a partition name is specified, `sp_helppartition` displays table-level partition information for the base table and partition-level information for the named partition—with no summary information.
- Partitions are created using `create table`, `alter table`, and `select into`. See these commands for more information about partitioning.
- Use `sp_helpsegment` to display the number of used and free pages on the segment on which the partition is stored.

Accuracy of results

- The values reported in the “pages” column may differ from the actual values. To determine whether the count is inaccurate, run sp\_statistics and sp\_helppartition to compare the data page count. The count provided by sp\_statistics is always accurate.

If the page count reported by sp\_statistics differs from the sum of the partition pages reported by sp\_helppartition by more than 5 percent, run one of these commands to update the partition statistics:

- dbcc checkdb
- dbcc checktable
- update all statistics
- update table statistics

Then, rerun sp\_helppartition for an accurate report.

Permissions Any user can execute sp\_helppartition.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Catalog system procedures** sp\_statistics

**Commands** alter table, create table, select into

**System procedures** sp\_helpsegment

## sp\_helpcache

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays information about the objects that are bound to a data cache or the amount of overhead required for a specified cache size.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Syntax      | <code>sp_helpcache {cache_name   "cache_size[P   K   M   G]" ,<br/>'instance instance_name'}</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><i>cache_name</i><br/>is the name of an existing data cache.</p> <p><i>cache_size</i><br/>specifies the size of the cache, specified by P for pages, K for kilobytes, M for megabytes, or G for gigabytes. The default is K.</p> <p><i>instance_name</i><br/>name of the instance whose cache you are investigating.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Examples    | <p><b>Example 1</b> Displays information about items bound to pub_cache:</p> <pre>sp_helpcache pub_cache</pre> <p><b>Example 2</b> Shows the amount of overhead required to create an 80MB data cache:</p> <pre>sp_helpcache "80M"</pre> <p><b>Example 3</b> Displays information about all caches and all items bound to them:</p> <pre>sp_helpcache</pre> <p><b>Example 4</b> <i>For cluster environments</i> – displays the overhead for the cache C2 on instance “blade1” for size 10M:</p> <pre>sp_helpcache 'C2', '10M', 'instance blade1'</pre>                                                                                                                                                                                                                                                                                                                                                 |
| Usage       | <ul style="list-style-type: none"> <li>• To see the size, status, and I/O size of all data caches on the server, use <code>sp_cacheconfig</code>.</li> <li>• When you configure data caches with <code>sp_cacheconfig</code>, all the memory that you specify is made available to the data cache. Overhead for managing the cache is taken from the default data cache. The <code>sp_helpcache</code> displays the amount of memory required for a cache of the specified size.</li> <li>• <i>For cluster environments</i> – if you do not specify an <i>instance_name</i>, <code>sp_helpcache</code> displays information for all caches.</li> <li>• To bind objects to a cache, use <code>sp_bindcache</code>. To unbind a specific object from a cache, use <code>sp_unbindcache</code>. To unbind all objects that are bound to a specific cache, use <code>sp_unbindcache_all</code>.</li> </ul> |

- The procedure sp\_cacheconfig configures data caches. The procedure sp\_poolconfig configures memory pools within data caches.
- sp\_helpcache computes overhead accurately up to 74GB.
- Although you can still use sp\_bindcache on a system tempdb, the binding of the system tempdb is now non-dynamic. Until you restart the server, the changes do not take effect, and sp\_helpcache reports a status of “P” for pending, unless you have explicitly bound the system tempdb to the default data cache, in which case the status as “V” for valid, because by default the system tempdb is already bound to the default data cache.

Permissions Any user can execute sp\_helpcache.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_bindcache, sp\_cacheconfig, sp\_poolconfig, sp\_unbindcache, sp\_unbindcache\_all



## sp\_helpcomputedcolumn

**Description** Reports information on the computed columns in a specified table.

**Syntax** `sp_helpcomputedcolumn {tablename}`

**Parameters** *tablename*  
names the table that contains computed columns.

**Examples** This example reports the computed columns in the mytitles table:

```
sp_helpcomputedcolumn mytitles
Column_Name Property
-----
sum_sales      materialized

Text
-----
AS price * total_sales materialized

(return status = 0)
```

**Usage**

**Permissions** Any user can use sp\_helpcomputedcolumn.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## sp\_helpconfig

**Description** Reports help information on configuration parameters.

**Syntax** sp\_helpconfig "*configname*"[, "*size*"]

**Parameters**

*configname*  
is the configuration parameter being queried, or a non-unique parameter fragment.

*size*  
is the size of memory, specified by B (bytes), K (kilobytes), M (megabytes), G (gigabytes), or P (pages). Used without the type of size specified, *size* specifies the number of the entity being configured using this parameter, for examples, locks, open indexes, and so on. *size* is ignored if *configname* is not a unique parameter name.

**Examples** **Example 1** Returns a report on all configuration options that start with “allow”:

```
sp_helpconfig "allow"
```

Configuration option is not unique.

| option_name                    | config_value | run_value |
|--------------------------------|--------------|-----------|
| allow backward scans           | 1            | 1         |
| allow nested triggers          | 1            | 1         |
| allow procedure grouping       | 1            | 1         |
| allow remote access            | 1            | 1         |
| allow resource limits          | 0            | 0         |
| allow sendmsg                  | 0            | 0         |
| allow sql server async i/o     | 1            | 1         |
| allow updates to system tables | 0            | 0         |

**Example 2** Returns a report on how much memory is needed to create a metadata cache for 421 object descriptors:

```
sp_helpconfig "open objects", "421"
```

number of open objects sets the maximum number of database objects that are open at one time on SQL Server. The default run value is 500.

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 100           | 2147483647    | 500           | 500           | 243         |

Configuration parameter, 'number of open objects', will consume 207K of memory if configured at 421.

**Example 3** Returns a report on how many database descriptors would fill a 1MB database cache:

```
sp_helpconfig "open databases", "1M"
```

number of open databases sets the maximum number of databases that can be open at one time on SQL Server. The default run value is 12.

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 5             | 2147483647    | 12            | 12            | 433         |

Configuration parameter, 'number of open databases', can be configured to 28 to fit in 1M of memory.

**Example 4** Returns a report on how many locks will use 512K of memory:

```
sp_helpconfig "number of locks", "512K"
```

number of locks sets the number of available locks. The default run value is 5000.

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 1000          | 2147483647    | 5000          | 5000          | 528         |

Configuration parameter 'number of locks', can be configured to 4848 to fit in 512K of memory.

**Example 5** Returns a report on the status of the allow updates to system tables configuration parameter:

```
sp_helpconfig "allow updates to system tables"
```

allow updates to system tables allows system tables to be updated directly. The default is 0 (off).

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 0             | 1             | 0             | 0             | 0           |

Usage

- sp\_helpconfig reports help information on configuration parameters, such as how much memory would be needed if the parameter were set to a certain value. sp\_helpconfig also displays the current setting, the amount of memory used for that setting, the default value, and the minimum and maximum settings.

---

**Note** The “maximum value” setting refers to the largest number that the parameter’s datatype can accept, rather than to an actual configurable value.

In many cases, the maximum allowable values for configuration parameters are extremely high. The maximum value for your server is usually limited by available memory and other resources, rather than by configuration parameter limitations.

---

- cluster options displays all strictly cluster-wide configuration options.
- If system\_view is set to cluster, sp\_helpconfig displays configuration information for all instances in the cluster.
- If system\_view is set to instance, sp\_helpconfig displays configuration information for the current instance.
- If you use a nonunique parameter fragment for *configname*, sp\_helpconfig returns a list of matching parameters with their configured values and current values. See Example 1.
- sp\_helpconfig accepts static, dynamic, and read-only options.
- sp\_helpconfig 'restricted decrypt permission' returns the following display:

```
sp_helpconfig 'restricted decrypt permission'
0 - restricted decrypt permission disabled (default).
1 - restricted decrypt permission enabled

Minimum Value  Maximum Value  Default Value  Current Value
  Memory Used   Unit           Type
-----
0               0  switch      1             0
                dynamic
```

Planning metadata cache configuration

- Use sp\_helpconfig when you are planning a metadata cache configuration for a server.

For example, suppose you were planning to move a database that contained 2000 user indexes to a different server. To find how much memory you would need to configure for that server so that it would accommodate the database's user indexes, enter the following command:

```
sp_helpconfig "open indexes", "2000"
```

number of open indexes sets the maximum number of indexes that can be open at one time on SQL Server. The default run value is 500.

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 100           | 2147483647    | 500           | 500           | 208         |

Configuration parameter, 'number of open indexes', will consume 829k of memory if configured at 2000.

Alternatively, suppose you had 1MB of memory available for the index cache, and you needed to know how many index descriptors it would support. Run the following command:

```
sp_helpconfig "open indexes", "1M"
```

number of open indexes sets the maximum number of indexes that can be open at one time on SQL Server. The default run value is 500.

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 100           | 2147483647    | 500           | 500           | 208         |

Configuration parameter 'number of open indexes', can be configured to 2461 to fit in 1M of memory.

Based on this output, if you have 1MB of memory, you can create an index descriptor cache that can contain a maximum of 2461 index descriptors.

To create this cache, set the number of open indexes configuration parameter as follows:

```
sp_configure "number of open indexes", 2461
```

Using *sp\_helpconfig* with *sybdiagdb* (Sybase Technical Support only)

---

**Note** Sybase Technical Support may create the *sybdiagdb* database on your system for debugging purposes. This database holds diagnostic configuration data, and is for use by Sybase Technical Support only.

---

The following *configname* options have been added to *sp\_helpconfig* for Sybase Technical Support to use with the *sybdiagdb* database:

- *number of ccbs* – the number of configurable action point control blocks available to aid debugging.
- *caps per ccb* – the maximum number of configurable action points that can be configured at any one time within one configurable action point.
- *average cap size* – the estimated number of bytes of memory required to store the information associated with a typical configurable action point.

For example:

```
sp_helpconfig "number of ccbs"
```

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 0             | 100           | 0             | 0             | 0           |

```
sp_helpconfig "caps per ccb"
```

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 5             | 500           | 50            | 50            | 0           |

```
sp_helpconfig "average cap size"
```

| Minimum Value | Maximum Value | Default Value | Current Value | Memory Used |
|---------------|---------------|---------------|---------------|-------------|
| 100           | 10000         | 200           | 200           | 0           |

**Permissions**

The options specified in “Using sp\_helpconfig with sybdiagdb (Sybase Technical Support only)” on page 385 can be used only by Sybase Technical Support. Any user can execute sp\_helpconfig with other *configname* options.

**Auditing**

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also**

**System procedures** sp\_configure, sp\_countmetadata, sp\_monitorconfig

## sp\_helpconstraint

|             |                                                                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports information about integrity constraints used in the specified tables.                                                                                                                                                                     |
| Syntax      | sp_helpconstraint [ <i>objname</i> ][, <i>detail</i> ]                                                                                                                                                                                            |
| Parameters  | <p><i>objname</i></p> <p>is the name of a table that has one or more integrity constraints defined by a create table or alter table statement.</p> <p><i>detail</i></p> <p>returns information about the constraint's user or error messages.</p> |
| Examples    | <p><b>Example 1</b> Displays the constraint information for the store_employees table in the pubs3 database. The store_employees table has a foreign key to the stores table (stor_id) and a self-reference (mgr_id references emp_id):</p>       |

```
sp_helpconstraint store_employees

name                                defn
-----                                -
store_empl_stor_i_272004000         store_employees FOREIGN KEY
                                     (stor_id) REFERENCES stores(stor_id)
store_empl_mgr_id_288004057         store_employees FOREIGN KEY
                                     (mgr_id) SELF REFERENCES
                                     store_employees(emp_id)
store_empl_2560039432              UNIQUE INDEX( emp_id) :
                                     NONCLUSTERED, FOREIGN REFERENCE
```

(3 rows affected)

Total Number of Referential Constraints: 2

Details:

```
-- Number of references made by this table: 2
-- Number of references to this table: 1
-- Number of self references to this table: 1
```

Formula for Calculation:

```
Total Number of Referential Constraints
= Number of references made by this table
+ Number of references made to this table
- Number of self references within this table
```

**Example 2** Displays more detailed information about the pubs3..salesdetail constraints, including the constraint type and any constraint error messages:

```
sp_helpconstraint titles, detail

name                                type
```

```
defn
  msg
-----
-----
datedflt          default value
  create default datedflt as getdate()

typedflt          default value
  create default typedflt as "UNDECIDED"

titles_pub_id_96003373    referential constraint
  titles FOREIGN KEY (pub_id) REFERENCES publishers(pub_id)
  standard system error message number : 547

roysched_title__144003544    referential constraint
  roysched FOREIGN KEY (title_id) REFERENCES titles(title_id)
  standard system error message number : 547

salesdetai_title__368004342    referential constraint
  salesdetail FOREIGN KEY (title_id) REFERENCES titles(title_id)
  standard system error message number : 547

titleautho_title__432004570    referential constraint
  titleauthor FOREIGN KEY (title_id) REFERENCES titles(title_id)
  standard system error message number : 547

titles_800033162          unique constraint
  UNIQUE INDEX ( title_id) : NONCLUSTERED, FOREIGN REFERENCE
  standard system error message number : 2601
```

(7 rows affected)

Total Number of Referential Constraints: 4

Details:

```
-- Number of references made by this table: 1
-- Number of references to this table: 3
-- Number of self references to this table: 0
```

Formula for Calculation:

```
Total Number of Referential Constraints
= Number of references made by this table
+ Number of references made to this table
- Number of self references within this table.
```

**Example 3** Displays a listing of all tables in the pubs3 database:



```
sp_helpconstraint
```

| id        | name            | Num_referential_constraints |
|-----------|-----------------|-----------------------------|
| 80003316  | titles          | 4                           |
| 16003088  | authors         | 3                           |
| 176003658 | stores          | 3                           |
| 256003943 | salesdetail     | 3                           |
| 208003772 | sales           | 2                           |
| 336004228 | titleauthor     | 2                           |
| 896006223 | store_employees | 2                           |
| 48003202  | publishers      | 1                           |
| 128003487 | roysched        | 1                           |
| 400004456 | discounts       | 1                           |
| 448004627 | au_pix          | 1                           |
| 496004798 | blurbs          | 1                           |

```
(11 rows affected)
```

#### Usage

- `sp_helpconstraint` truncates foreign keys and reference keys to 30 characters.
- `sp_helpconstraint` prints the name and definition of the integrity constraint, and the number of references used by the table. The `detail` option returns information about the constraint's user or error messages.
- Running `sp_helpconstraint` with no parameters lists all the tables containing references in the current database, and displays the total number of references in each table. `sp_helpconstraint` lists the tables in descending order, based on the number of references in each table.
- `sp_helpconstraint` reports only the integrity constraint information about a table (defined by a `create table` or `alter table` statement). It does not report information about rules, triggers, or indexes created using the `create index` statement. Use `sp_help` to see information about rules, triggers, and indexes for a table.
- For constraints that do not have user-defined messages, Adaptive Server reports the system error message associated with the constraint. Query `sysmessages` to obtain the actual text of that error message.
- You can use `sp_helpconstraint` only for tables in the current database.
- If a query exceeds the configured number of auxiliary scan descriptors, Adaptive Server returns an error message. You can use `sp_helpconstraint` to determine the necessary number of scan descriptors. See the *System Administration Guide* or more information on the number of aux scan descriptors configuration parameter.

- A System Security Officer can prevent the source text of constraint definitions from being displayed to most users who execute sp\_helpconstraint. To restrict select permission on the text column of the syscomments table to the object owner or a System Administrator, use sp\_configure to set the select on syscomments.text column parameter to 0. This restriction is required to run Adaptive Server in the evaluated configuration. See the *System Administration Guide* for more information about the evaluated configuration.

Permissions Any user can execute sp\_helpconstraint.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** alter table, create table

**System procedures** sp\_configure, sp\_help, sp\_helpdb, sp\_monitorconfig

## sp\_helpdb

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports information about a particular database or about all databases.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Syntax      | <code>sp_helpdb [dbname [, order]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <p><i>dbname</i><br/>is the name of the database on which to report information. Without this optional parameter, <code>sp_helpdb</code> reports on all databases. <i>dbname</i> can include wildcard characters to return all databases that match the specified pattern.</p> <p><i>order</i><br/>The default order of the output is by <code>lstart</code>, which is the order in which the databases were created or altered. Use <code>device_name</code> along with <i>dbname</i> to display the output of <code>sp_helpdb</code> ordered by <code>device_name</code>.</p> |

**Examples**                      **Example 1** Displays information about all the databases in Adaptive Server.

```
sp_helpdb

name          db_size  owner  bid  created          status
-----
master        24.0 MB  sa     1    Jan 07, 2004    mixed log and data
model         8.0 MB   sa     3    Jan 07, 2004    mixed log and data
pubs2         8.0 MB   sa     4    Jan 21, 2004    trunc log on chkpt,
mixed log and data
sybssystemdb  8.0 MB   sa    31513  Jan 07, 2004    mixed log and data
sybssystemprocs 112.0 MB sa    31514  Jan 07, 2004    trunc log on chkpt, mixed
log and data
tempdb        8.0 MB   sa     2    Feb 24, 2004    select into/bulkcopy/
pllsort, trunc log on
chkpt, mixed log| and
data

(1 row affected)
(return status = 0)
```

**Example 2** Issued from within `pubs2`, displays information about the `pubs2` database, and includes segment information:

```
1> use pubs2
2> go
1> sp_helpdb pubs2
2> go

name  db_size  owner  dbid  created          status
-----
pubs2 20.0 MB  sa     4     Apr 13, 2005    trunc log on chkpt, mixed log
and data

(1 row affected)
pubs2
```

```

device_fragments  size  usage          created          free kbytes
-----
master            10.0 MB  data and log   Apr 13 2005 10:29AM  2304
pubs_2_dev        10.0 MB  data and log   Apr 13 2005 10:33AM  9888

device            segment
-----
master            default
master            logsegment
master            system
pubs_2_dev        default
pubs_2_dev        logsegment
pubs_2_dev        system
pubs_2_dev        titleseg1
pubs_2_dev        titleseg2
pubs_2_dev        titleseg3
pubs_2_dev        titleseg4
pubs_2_dev        titleseg5
return status = 0)

```

**Example 3** Not issued from within pubs2, displays information about the pubs2 database:

```

sp_helpdb pubs2

name db_size owner dbid created status
-----
pubs2 20.0 MB sa 4 Jan 21, 2004 trunc log on chkpt, single
user,
mixed log and data

(1 row affected)

device_fragments  size  usage          created          free kbytes
-----
master            10.0 MB  data and log   Apr 13 2005 10:29AM  2304
pubs_2_dev        10.0 MB  data and log   Apr 13 2005 10:33AM  9888
(return status = 0)

```

**Example 4** Specifies device\_name for the order parameter to display the device fragments for mydb in alphabetical order, overriding the default sort order of sp\_helpdb.

```

sp_helpdb mydb, device_name

name db_size owner dbid created status
-----
mydb 4.5 MB sa 5 Feb 27, 2003 no options set

```

(1 row affected)

| device_fragments | size   | usage     | created            | free kbytes    |
|------------------|--------|-----------|--------------------|----------------|
| A                | 1.5 MB | data only | Feb 27 2003 7:50AM | 1530           |
| B                | 1.0 MB | log only  | Feb 27 2003 7:50AM | not applicable |
| C                | 2.0 MB | data only | Feb 27 2003 7:50AM | 846            |

**Example 5** Displays the row lock promotion attributes set for the pubtune database:

```
sp_helpdb pubtune
```

| name    | attribute_class | attribute          | int_value | char_value                        | comments |
|---------|-----------------|--------------------|-----------|-----------------------------------|----------|
| pubtune | lock strategy   | row lock promotion | NULL      | PCT = 95, LWM = 300,<br>HWM = 300 |          |

**Example 6** Displays whether or not a database is a user-created temporary database under the status column:

```
sp_helpdb "mytempdb3"
```

| name     | db_size | owner | dbid | created     | status                                                                    |
|----------|---------|-------|------|-------------|---------------------------------------------------------------------------|
| mytempdb | 32.0 MB | sa    | 7    | Dec 2, 2001 | select into/bulkcopy/pllsort, trunc<br>log on chkpt, user created temp db |

## Usage

- `sp_helpdb` reports on the specified database when `dbname` is given. If no value is supplied for `dbname`, `sp_helpdb` reports on all the databases listed in `master.dbo.sysdatabases`.
- If you enable asynchronous log service on a database, the attribute column in the `sp_helpdb` output displays “async log srv”.

For more information about asynchronous log service, see `sp_dboption`, and Chapter 3, “Advanced Optimizing Tools” in *Performance and Tuning: Optimizer*.

- For log segment disk pieces in a dedicated log database, `sp_helpdb` issues “not applicable” for the free space field in its per-disk-piece report. `sp_helpdb` also includes a column titled free pages, which is the value for the number of free pages the log segment has.
- *In cluster environments* – `sp_helpdb` does not display device-related information if the specified database is a local temporary database owned by a remote instance.

- *dbname* can include wildcard characters to return all databases that match the specified pattern. See Chapter 4, “Expressions, Identifiers, and Wildcard Characters” in *Reference Manual: Building Blocks* for details about using wildcard characters.
- Executing `sp_helpdb dbname` from *dbname* includes free space and segment information in the report.
- `sp_helpdb` displays information about a database’s attributes, giving the attribute’s class, name, integer value, character value, and comments, if any attributes are defined. Example 3 shows cache binding attributes for the `pubs2` database.
- `sp_helpdb` reports if a database is offline.
- `sp_helpdb` reports row lock promotion thresholds, if any are defined for the database.
- A database created with the `for load` option has a status of “don’t recover” in the output from `sp_helpdb`.
- When Component Integration Services is enabled, `sp_helpdb` lists the default storage location for the specified database or all databases. If there is no default storage location, the display indicates “NULL”.

Permissions Any user can execute `sp_helpdb`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Documents** Chapter 3, “Advanced Optimizing Tools” in *Performance and Tuning: Optimizer*, Chapter 4, “Expressions, Identifiers, and Wildcard Characters” in *Reference Manual: Building Blocks*,

**Commands** `alter database`, `create database`

**System procedures** `sp_configure`, `sp_dboption`, `sp_rename`

## sp\_helpdevice

|             |                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports information about a particular device or about all Adaptive Server database devices and dump devices.                                                 |
| Syntax      | <code>sp_helpdevice [devname]</code>                                                                                                                          |
| Parameters  | <i>devname</i><br>is the name of the device about which to report information. If you omit this parameter, <code>sp_helpdevice</code> reports on all devices. |
| Examples    | <b>Example 1</b> Displays information about all the devices on Adaptive Server:                                                                               |

```
1> sp_helpdevice
2> go
```

```
device_name physical_name      description
            status cntrltype vdevno      vpn_low     vpn_high
-----
-----
dev1        d:\sybdata\RV150.dev1 special, dsync off, directio on, physical
disk, 150.00 MB, Free: 0.00 MB
            2          0          2          0          76799

dev2        d:\sybdata\RV150.dev2 special, dsync on, directio off, physical
disk, 150.00 MB, Free: 130.00 MB
            16386       0          3          0          76799

master      d:\sybdata\RV150.mas special, dsync on, directio off, default
disk, physical disk, 30.00 MB, Free: 0.50 MB
            3          0          0          0          15359

sysprocsdev d:\sybdata\RV150.ssp special, dsync on, directio off, physical
disk, 120.00 MB, Free: 0.00 MB
            16386       0          1          0          61439

tapedump1  \\.\TAPE0      disk, dump device
            16          2          0          0          20000

tapedump2  \\.\TAPE1      tape,          625 MB, dump device
            16          3          0          0          20000
```

```
(6 rows affected, return status = 0)
```

**Example 2** Reports information about the dump device named diskdump:

```
sp_helpdevice diskdump
```

Usage

- sp\_helpdevice displays the amount of unallocated space per device, indicated by the placeholder `Free` in the description column in the output

---

**Note** A small amount of space can remain unused on a device, especially for servers with larger page sizes. For example, the last 2MB of a 250MB device in a 16K server cannot be allocated, and sp\_helpdevice reports this as free. This is because the size of an allocation unit in a 16K server is 4Mb, so only multiples of allocation units can be allocated.

---

- sp\_helpdevice displays information on the specified device, when *devname* is given, or on all devices in master.dbo.sysdevices, when no argument is given.
- The sysdevices table contains dump devices and database devices.

Database devices can be designated as default devices, which means that they can be used for database storage. This can occur when a user issues create database or alter database and does not specify a database device name or gives the keyword default. To make a database device a default database device, execute the system procedure sp\_diskdefault.

- Add database devices to the system with disk init. Add dump devices with sp\_addumpdevice.
- If you issue sp\_helpdevice against a single device, it displays a list of allocated fragments on that device.
- The description column displays information about the device type. The device types are:
  - block device
  - file system device
  - raw device

The number in the status column corresponds to the status description in the “description” column.

The cntrtype column specifies the controller number of the device. The cntrtype is 2 for disk or file dump devices and 3–8 for tape dump devices. For database devices, the cntrtype is usually 0 (unless your installation has a special type of disk controller).

The vdevno column is 0 for dump devices, 0 for the master database device, and 1 or higher for other database devices.



The `vpn_low` and `vpn_high` columns represent virtual page numbers, each of which is unique among all the devices in Adaptive Server.

Permissions Any user can execute `sp_helpdevice`.

Auditing Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** `disk init`, `dump database`, `dump transaction`, `load database`, `load transaction`

**System procedures** `sp_addumpdevice`, `sp_deviceattr`, `sp_diskdefault`, `sp_dropdevice`, `sp_logdevice`

## sp\_helpextendedproc

| Description | Displays extended stored procedures (ESPs) in the current database, along with their associated DLL files.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------|-------|-------------|----------|----------|----------|-------|-------|-----------|----------|-------------|----------|
| Syntax      | sp_helpextendedproc [ <i>esp_name</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| Parameters  | <i>esp_name</i><br>is the name of the extended stored procedure. It must be a procedure in the current database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| Examples    | <p><b>Example 1</b> Lists the xp_cmdshell ESP and the name of the DLL file in which its function is stored:</p> <pre>use sybtempprocs go sp_helpextendedproc xp_cmdshell</pre> <table><thead><tr><th>ESP Name</th><th>DLL Name</th></tr></thead><tbody><tr><td>-----</td><td>-----</td></tr><tr><td>xp_cmdshell</td><td>sybsyesp</td></tr></tbody></table> <p><b>Example 2</b> Lists all the ESPs in the current database, along with the names of the DLL files in which their functions are stored:</p> <pre>sp_helpextendedproc</pre> <table><thead><tr><th>ESP Name</th><th>DLL Name</th></tr></thead><tbody><tr><td>-----</td><td>-----</td></tr><tr><td>xp_freedl</td><td>sybsyesp</td></tr><tr><td>xp_cmdshell</td><td>sybsyesp</td></tr></tbody></table> | ESP Name | DLL Name | ----- | ----- | xp_cmdshell | sybsyesp | ESP Name | DLL Name | ----- | ----- | xp_freedl | sybsyesp | xp_cmdshell | sybsyesp |
| ESP Name    | DLL Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| -----       | -----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| xp_cmdshell | sybsyesp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| ESP Name    | DLL Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| -----       | -----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| xp_freedl   | sybsyesp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| xp_cmdshell | sybsyesp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| Usage       | <ul style="list-style-type: none"><li>• If the <i>esp_name</i> is omitted, sp_helpextendedproc lists all the extended stored procedures in the database.</li><li>• The <i>esp_name</i> is case sensitive. It must match the <i>esp_name</i> used to create the ESP.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| Permissions | Only a System Administrator can execute sp_helpextendedproc to see all the ESPs in the database. All users can execute sp_helpextendedproc to see ESPs owned by themselves or by the Database Owner.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |          |       |       |             |          |          |          |       |       |           |          |             |          |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |          |       |       |             |          |          |          |       |       |           |          |             |          |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create procedure, drop procedure

**Extended system procedure** xp\_cmdshell

**System procedures** sp\_addextendedproc, sp\_dropextendedproc

## sp\_helpexternlogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Component Integration Services only</b> Reports information about external login names.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | sp_helpexternlogin [ <i>server</i> [, <i>loginame</i> [, <i>rolename</i> ]]]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Parameters  | <i>server</i><br>is the name of the remote server that has been added to the local server with sp_addserver.<br><i>loginame</i><br>is a login account on the local server.<br><i>rolename</i><br>is the Adaptive Server user's assigned role.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Examples    | <b>Example 1</b> Displays all remote servers, local login names, role names, and external logins:<br><pre>sp_helpexternlogin</pre> <b>Example 2</b> Displays local login names, role names, and external logins for the server named SSB:<br><pre>sp_helpexternlogin SSB</pre> <b>Example 3</b> Displays remote servers, local login names and external logins for the user named "milo":<br><pre>sp_helpexternlogin NULL, milo</pre> <b>Example 4</b> Displays external logins for remote server SSB where the local user name is "trixi":<br><pre>sp_helpexternlogin SSB, trixi</pre> <b>Example 5</b> Displays external logins for remote server SSB for local users with sa_role:<br><pre>sp_helpexternlogin SSB, NULL, sa_role</pre> |
| Usage       | <ul style="list-style-type: none"><li>sp_helpexternlogin displays all remote servers, the user's local login name, role name, and the user's external login name.</li><li>Add remote servers with sp_addserver. Add local logins with sp_addlogin.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Permissions | Any user can execute sp_helpexternlogin.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addexternlogin, sp\_addlogin, sp\_addserver, sp\_dropexternlogin, sp\_helpserver

## sp\_helpgroup

**Description** Reports information about a particular group or about all groups in the current database.

**Syntax** sp\_helpgroup [grpname]

**Parameters** *grpname*  
is the name of a group in the database created with sp\_addgroup.

**Examples** **Example 1** Displays information about all groups in the current database:

```
sp_helpgroup
Group_name      Group_id
-----
hackers         16384
public          0
```

**Example 2** Displays information about the group “hackers”:

```
sp_helpgroup hackers
```

```
Group_name      Group_id      Users_in_group      Userid
-----
hackers         16384        ann                  4
hackers         16384        judy                  3
```

- Usage**
- To get a report on the default group, “public,” enclose the name “public” in single or double quotes (“public” is a reserved word).
  - If there are no members in the specified group, sp\_helpgroup displays the header, but lists no users, as follows:

```
Group_name      Group_id      Users_in_group      Userid
-----
```

**Permissions** Any user can execute sp\_helpgroup.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** grant, revoke

**System procedures** sp\_addgroup, sp\_changegroup, sp\_dropgroup, sp\_helprotect, sp\_helpuser

## sp\_helpindex

**Description** Reports information about the indexes created on a table. Reports information on computed column indexes and function-based indexes.

**Syntax** sp\_helpindex *objname*

**Parameters** *objname*  
is the name of a table in the current database.

**Examples** **Example 1** Displays the types of indexes on the sysobjects table:

```
sp_helpindex sysobjects

index_name index_keys index_description index_max_rows_per_page
          index_fillfactor index_reservepagegap index_created
          index_local

sysobjects      id          clustered, unique          0
                0
                Global Index
ncsysobjects    name, uid nonclustered, unique
                0          0          Apr 12 2005  2:38PM
                Global Index

(2 rows affected)
index_pt_name          index_ptn_seg
-----
sysobjects_1          system
ncsysobjects_1        system
```

**Example 2** Displays information about the index on the titles table in the pubs2 database. The titles table is partitioned, but the index titleind is not. titleind is a nonclustered (single-partitioned), global index.

```
sp_helpindex titles

index_name index_keys index_description index_max_rows_per_page
          index_fillfactor index_reservepagegap index_created
          index_local

titleind      title      nonclustered          0
              Global Index

(1 row affected)
index_pt_name          index_ptn_seg
-----
titleind_1232004389    default
```



**Example 3** Displays index information about the mysalesdetail table. mysalesdetail is partitioned by hash on the ord\_num column. A clustered, local index, with three partitions, has also been created on ord\_num.

```
sp_helpindex mysalesdetail

index_name index_keys index_description index_max_rows_per_page
          index_fillfactor index_reservepagegap index_created      index_local
-----
-----
clust_idx  ord_num    clustered                                0
          0                                0 Apr 12 2005 2:38PM Local Index

(1 row affected)
index_pt_name      index_ptn_seg
-----
clust_idx_1344004788  default
clust_idx_1360004845  default
clust_idx_1376004902  default
```

**Example 4** Displays a function-based index:

```
create index sum_sales on mytitles (price * total_sales)
sp_helpindex mytitles

Object has the following indexes

index_name index_keys index_description index_max_rows_per_page
          index_fillfactor index_reservepagegap index_created      index_local
-----
-----
sum_sales  sybfi2_1  nonclustered                                0
          0                                0 Oct 12 2005 3:34PM Global Index

(1 row affected)
index_ptn_name      index_ptn_seg
-----
sum_sales_1724867646 default

(1 row affected)

Object has the following functional index keys

Internal_Index_Key_Name
-----
sybfi2_1

(1 row affected)

Expression
-----
price * total_sales
```

(return status = 0)

- Usage
- sp\_helpindex lists any indexes on a table, including indexes created by defining unique or primary key constraints defined by a create table or alter table statement.
  - sp\_helpindex displays any attributes (for example, cache bindings) assigned to the indexes on a table.
  - sp\_helpindex displays:
    - Partition information for each index.
    - Whether the index is local or global, clustered or nonclustered.
    - The max\_rows\_per\_page setting of the indexes.
    - Information about clustered indexes on data-only locked tables.  
The index ID (indid) of a clustered index in data-only locked tables is not equal to 1.
    - The column order of the keys, to indicate whether they are in ascending or descending order.
    - Space manage property values.
    - The key column name followed by the order. Only descending order is displayed. For example, if there is an index on column a ASC, b DESC, c ASC, “index\_keys” shows “a, b DESC, c”.

Permissions Any user can execute sp\_helpindex.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                          |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>audited</b>           | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38                       | exec_procedure      | Execution of a procedure | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** create index, drop index, update statistics  
**System procedures** sp\_help, sp\_helpkey, sp\_helppartition

## sp\_helpjava

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays information about Java classes and associated JARs that are installed in the database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | <code>sp_helpjava ["class"[, <i>java_class_name</i>[, "detail"   "depends"]]]   "jar", <i>jar_name</i>[, "depends"]]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Parameters  | <p>"class"   "jar"<br/>specifies whether to display information about a class or a JAR. Both "class" and "jar" are keywords, so the quotes are required.</p> <p><i>java_class_name</i><br/>the name of the class about which you want information. The class must be a system class or a user-defined class that is installed in the database.</p> <p>detail<br/>specifies that you want to see detailed information about the class.</p> <p>depends<br/>lists all the database objects that depend on the specified class or classes in the JAR, including SQLJ functions, SQLJ stored procedures, views, Transact-SQL stored procedures, and tables.</p> <p><i>jar_name</i><br/>the name of the JAR for which you want to see information. The JAR must be installed in the database using <code>installjava</code>.</p> |
| Examples    | <p><b>Example 1</b> Displays the names of all classes and associated JAR files installed in the database:</p> <pre>sp_helpjava</pre> <p><b>Example 2</b> Displays the name of all classes:</p> <pre>sp_helpjava "class"</pre> <p><b>Example 3</b> Displays detailed information about the Address class:</p> <pre>sp_helpjava "class", Address, detail Class ----- Address  (1 row affected) Class Modifiers ----- public synchronized  Implemented Interfaces</pre>                                                                                                                                                                                                                                                                                                                                                       |

-----  
java.io.Serializable

Extended Superclass

-----  
java.lang.Object

Constructors

-----  
public Address()  
public Address(java.lang.String,java.lang.String)

Methods

-----  
public final native java.lang.Class java.lang.Object.getClass()  
public native int java.lang.Object.hashCode()  
public boolean java.lang.Object.equals(java.lang.Object)  
public java.lang.String java.lang.Object.toString()  
public final native void java.lang.Object.notify()  
public final native void java.lang.Object.notifyAll()  
public final native void java.lang.Object.wait(long) throws  
java.lang.InterruptedException  
public final void java.lang.Object.wait(long,int) throws  
java.lang.InterruptedException  
public final void java.lang.Object.wait() throws  
java.lang.InterruptedException  
public java.lang.String Address.display()  
public void Address.removeLeadingBlanks()

Fields

-----  
public java.lang.String Address.street  
public java.lang.String Address.zip

- Usage
- The depends parameter lists dependencies of a class or classes if the class is listed in the external name clause of a create statement for a SQLJ routine or is used as a datatype of a column in the database.
- Permissions
- Any user can execute sp\_helpjava.
- Auditing
- Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documents** See *Java in Adaptive Server Enterprise* for more information about Java in the database.

**Commands** remove java

**Utilities** extractjava, installjava

## sp\_helpjoins

**Description** Lists the columns in two tables or views that are likely join candidates.

**Syntax** `sp_helpjoins lefttab, righttab`

**Parameters** *lefttab*  
is the first table or view.

*righttab*  
is the second table or view. The order of the parameters does not matter.

**Examples** **Example 1** Displays a list of columns that are likely join candidates in the sales and salesdetail tables:

```

sp_helpjoins sales, salesdetail
a1      a2      b1      b2      c1      c2
      d1      d2      e1      e2      f1      f2
      g1      g2      h1      h2
-----
-----
      stor_id  stor_id  ord_num  ord_num  NULL    NULL
      NULL    NULL    NULL    NULL    NULL    NULL
      NULL    NULL    NULL    NULL    NULL

```

**Example 2** Displays a list of columns that are likely join candidates in the sysobjects and syscolumns system tables:

```

sp_helpjoins sysobjects, syscolumns
a1  a2  b1  b2  c1  c2  d1  d2  e1  e2
      f1  f2  g1  g2  h1  h2
-----
-----
id  id  NULL NULL NULL NULL NULL NULL NULL
      NULL NULL NULL NULL NULL

```

**Usage**

- The column pairs that sp\_helpjoins displays come from either of two sources. sp\_helpjoins checks the syskeys table in the current database to see if any foreign keys have been defined with sp\_foreignkey on the two tables, then checks to see if any common keys have been defined with sp\_commonkey on the two tables. If sp\_helpjoins does not find any foreign keys or common keys there, it checks for keys with the same user-defined datatypes. If that fails, it checks for columns with the same name and datatype.
- sp\_helpjoins does not create any joins.

Permissions Any user can execute sp\_helpjoins.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_commonkey, sp\_foreignkey, sp\_helpkey, sp\_primarykey

## sp\_helpkey

**Description** Reports information about a primary, foreign, or common key of a particular table or view, or about all keys in the current database.

**Syntax** sp\_helpkey [*tablename*]

**Parameters** *tablename*  
 is the name of a table or view in the current database. If you do not specify a name, the procedure reports on all keys defined in the current database.

**Examples** Displays information about the keys defined in the current database. The “object\_keys” and “related\_keys” columns refer to the names of the columns that make up the key:

```
sp_helpkey

keytype object      related_object object_keys      related_keys
-----
primary authors    -- none --      au_id,*,*,*,*,*,*,* *,*,*,*,*,*,*,*
foreign titleauthor authors      au_id,*,*,*,*,*,*,* au_id,*,*,*,*,*,*,*
                                     *,*
```

- Usage**
- sp\_helpkey lists information about all primary, foreign, and common key definitions that reference the table *tablename* or, if *tablename* is omitted, about all the keys in the database. Define these keys with the sp\_primarykey, sp\_foreignkey, and sp\_commonkey system procedures.
  - sp\_helpkey does not provide information about the unique or primary key integrity constraints defined by a create table statement. Use sp\_helpconstraint to determine what constraints are defined for a table.
  - Create keys to make explicit a logical relationship that is implicit in your database design so that applications can use the information.
  - If you specify an object name, sp\_helpkey follows the Adaptive Server rules for finding objects:
    - If you do not specify an owner name, and you own an object with the specified name, sp\_helpkey reports on that object.
    - If you do not specify an owner name, and you do not own an object of that name, but the Database Owner does, sp\_helpkey reports on the Database Owner’s object.
    - If neither you nor the Database Owner owns an object with the specified name, sp\_helpkey reports an error condition, even if an object with that name exists in the database for a different owner.



- If both you and the Database Owner own objects with the specified name, and you want to access the Database Owner's object, specify the name in the form *dbo.objectname*.
- Qualify objects that are owned by database users other than yourself and the Database Owner with the owner's name, as in "mary.myproc".

Permissions Any user can execute `sp_helpkey`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** `create trigger`

**System procedures** `sp_commonkey`, `sp_foreignkey`, `sp_primarykey`

## sp\_helplanguage

**Description** Reports information about a particular alternate language or about all languages.

**Syntax** sp\_helplanguage [*language*]

**Parameters** *language*  
is the name of the alternate language you want information about.

**Examples** **Example 1** Displays information about the alternate language, “french”:

```
sp_helplanguage french
```

```
langid dateformat datefirst upgrade      name
      alias
      months
      shortmonths
      days
-----
-----
-----
-----
-----
1      dmy          1          0          french
french
janvier , février , mars , avril , mai , juin , juillet , août , septembre ,
      octobre , novembre , décembre
jan , fév , mar , avr , mai , jui , juil , août , sep , oct , nov , déc
lundi , mardi , mercredi , jeudi , vendredi , samedi , dimanche
```

**Example 2** Displays information about all installed alternate languages:

```
sp_helplanguage
```

**Usage**

- sp\_helplanguage reports on a specified language, when the language is given, or on all languages in master.dbo.syslanguages, when no language is supplied.

**Permissions** Any user can execute sp\_helplanguage.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_addlanguage, sp\_droplanguage, sp\_setlangalias

## sp\_helplog

|             |                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports the name of the device that contains the first page of the transaction log.                                                                                       |
| Syntax      | sp_helplog                                                                                                                                                                |
| Parameters  | None.                                                                                                                                                                     |
| Examples    | Reports “master” as the name of the device:<br><br><pre>sp_helplog</pre> <p>In database 'master', the log starts on device 'master'.</p>                                  |
| Usage       | <ul style="list-style-type: none"> <li>sp_helplog displays the name of the device that contains the first page of the transaction log in the current database.</li> </ul> |
| Permissions | Any user can execute sp_helplog.                                                                                                                                          |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                       |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

|          |                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------|
| See also | <p><b>Commands</b> alter database, create database</p> <p><b>System procedures</b> sp_helpdevice, sp_logdevice</p> |
|----------|--------------------------------------------------------------------------------------------------------------------|

## sp\_helpobjectdef

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Component Integration Services only</b> Reports owners, objects, and type information for remote object definitions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | sp_helpobjectdef [ <i>objname</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Parameters  | <p><i>objname</i></p> <p>is the name of the object as it is defined in the sysattributes table. The <i>objname</i> can be in any of the following forms:</p> <ul style="list-style-type: none"> <li>• <i>dbname.owner.object</i></li> <li>• <i>dbname..object</i></li> <li>• <i>owner.object</i></li> <li>• <i>object</i></li> </ul> <p><i>dbname</i> and <i>owner</i> are optional. <i>object</i> is required. If <i>owner</i> is not supplied, the <i>owner</i> defaults to the current user name. If <i>dbname</i> is supplied, it must be the current database, and <i>owner</i> must be supplied or marked with the placeholder <i>dbname..object</i>. Enclose a multipart <i>objname</i> in quotes.</p> |
| Examples    | <p><b>Example 1</b> Displays all remote object definitions in the current database:</p> <pre>sp_helpobjectdef</pre> <p><b>Example 2</b> Displays remote object definitions for the tb1 table owned by the Database Owner:</p> <pre>sp_helpobjectdef "dbo.tb1"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Usage       | <ul style="list-style-type: none"> <li>• If no <i>objname</i> is supplied, sp_helpobjectdef displays all remote object definitions.</li> <li>• A server name is not permitted in the <i>objname</i> parameter.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Permissions | Any user can execute sp_helpobjectdef.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create table, create existing table, drop table

**System procedures** sp\_addobjectdef, sp\_dropobjectdef, sp\_helpserver

## sp\_helpremotelogin

|             |                                                                                                                                                                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports information about a particular remote server's logins or about all remote server logins.                                                                                                                                                                                                       |
| Syntax      | sp_helpremotelogin [ <i>remoteserver</i> [, <i>remotename</i> ]]                                                                                                                                                                                                                                       |
| Parameters  | <p><i>remoteserver</i><br/>is the name of the server about which to report remote login information.</p> <p><i>remotename</i><br/>is the name of a particular remote user on the remote server.</p>                                                                                                    |
| Examples    | <p><b>Example 1</b> Displays information about all the remote users of the remote server GATEWAY:</p> <pre>sp_helpremotelogin GATEWAY</pre> <p><b>Example 2</b> Displays information about all the remote users of all the remote servers known to the local server:</p> <pre>sp_helpremotelogin</pre> |
| Usage       | <ul style="list-style-type: none"> <li>sp_helpremotelogin reports on the remote logins for the specified server, when <i>remoteserver</i> is given, or on all servers, when no parameter is supplied.</li> </ul>                                                                                       |
| Permissions | Any user can execute sp_helpremotelogin.                                                                                                                                                                                                                                                               |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                    |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_addremotelogin, sp\_droremotelogin, sp\_helpserver

## sp\_helpprotect

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports on permissions for database objects, users, groups, or roles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | sp_helpprotect [ <i>name</i> [, <i>username</i> [, "grant"<br>[, "none"   "granted"   "enabled"   <i>role_name</i> [, <i>permission_name</i> ]]]]]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <p><i>name</i><br/>is either the name of the table, view, stored procedure, SQLJ stored procedure, SQLJ function, user-defined function, name of a user, user-defined role, or group in the current database. If you do not provide a name, sp_helpprotect reports on all permissions in the database.</p> <p><i>username</i><br/>is a user's name in the current database.</p> <p>grant<br/>displays the privileges granted to <i>name</i> with grant option.</p> <p>none<br/>ignores roles granted to the user when determining permissions granted.</p> <p>granted<br/>includes information on all roles granted to the user when determining permissions granted.</p> <p>enabled<br/>includes information on all roles activated by the user when determining permissions granted.</p> <p><i>permission_name</i><br/>allows sp_helpprotect to provide information (grantor name, grantee name, table/column name, grantability) for any specific permission granted in a given database.</p> <p>The value of this parameter can be any value from the sysprotects.action column.</p> |
| Examples    | <p><b>Example 1</b> This series of grant and revoke statements, executing sp_helpprotect titles results in this display:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

```
grant select on titles to judy
grant update on titles to judy
revoke update on titles(price) from judy
grant select on publishers to judy
with grant option
go
sp_helpprotect titles

grantor grantee type      action  object      column      grantable
```



```

-----
dbo      judy      Grant  Select  titles  All      FALSE
dbo      judy      Grant  Update  titles  advance  FALSE
dbo      judy      Grant  Update  titles  notes    FALSE
dbo      judy      Grant  Update  titles  pub_id   FALSE
dbo      judy      Grant  Update  titles  pubdate  FALSE
dbo      judy      Grant  Update  titles  title    FALSE
dbo      judy      Grant  Update  titles  title_id  FALSE
dbo      judy      Grant  Update  titles  total_sales  FALSE
dbo      judy      Grant  Update  titles  type     FALSE
dbo      judy      Grant  Select  publishers  all      TRUE

```

**Example 2** Issuing the following grant statement results in `sp_helprotect` displaying the following:

```

grant select, update on titles(price, advance)
  to mary
  with grant option
go
sp_helprotect titles

```

```

grantor  grantee  type  action  object  column  grantable
-----  -
dbo      mary     Grant  Select  titles  advance  TRUE
dbo      mary     Grant  Select  titles  price    TRUE
dbo      mary     Grant  Update  titles  advance  TRUE
dbo      mary     Grant  Update  titles  price    TRUE

```

**Example 3** Displays all the permissions that “judy” has in the database:

```
sp_helprotect judy
```

**Example 4** Displays any permissions that “csmith” has on the `sysusers` table, as well as whether “csmith” has with grant option which allows “csmith” to grant permissions to other users:

```
sp_helprotect sysusers, csmith, "grant"
```

```

grantor  grantee  type  action  object  column  grantable
-----  -
dbo      doctor   Grant  Delete  sysusers  All      FALSE
dbo      doctor   Grant  Insert  sysusers  All      FALSE
dbo      doctor   Grant  References  sysusers  All      FALSE
dbo      doctor   Grant  Select  sysattributes  All      FALSE

```

```

(1 row affected)
(return status = 0)

```

**Example 5** Displays information about the permissions that the doctor role has in the database:

```
sp_helprotect doctor
```

| grantor | grantee | type  | action     | object        | column | grantable |
|---------|---------|-------|------------|---------------|--------|-----------|
| dbo     | doctor  | Grant | Delete     | sysusers      | All    | FALSE     |
| dbo     | doctor  | Grant | Insert     | sysusers      | All    | FALSE     |
| dbo     | doctor  | Grant | References | sysusers      | All    | FALSE     |
| dbo     | doctor  | Grant | Select     | sysattributes | All    | FALSE     |

```
(1 row affected)
(return status = 0)
```

**Example 6** Displays information on all roles granted to “csmith”:

```
sp_helprotect csmith, null, null, "granted"
```

| grantor | grantee | type  | action     | object   | column | grantable |
|---------|---------|-------|------------|----------|--------|-----------|
| dbo     | csmith  | Grant | Update     | sysusers | All    | FALSE     |
| dbo     | doctor  | Grant | Delete     | sysusers | All    | FALSE     |
| dbo     | doctor  | Grant | Insert     | sysusers | All    | FALSE     |
| dbo     | doctor  | Grant | References | sysusers | All    | FALSE     |

```
(1 row affected)
(return status = 0)
```

**Example 7** Displays information on all active roles granted to “rpillai”:

```
sp_helprotect rpillai, null, null, "enabled"
```

| grantor | grantee | type  | action | object        | column | grantable |
|---------|---------|-------|--------|---------------|--------|-----------|
| dbo     | public  | Grant | Select | sysattributes | All    | FALSE     |

```
(1 row affected)
(return status = 0)
```

**Example 8** Advises that SQLJ function access is public:

```
sp_helprotect function_sqlj
```

```
Implicit grant to public for SQLJ functions.
```

**Example 9** Uses the action “Decrypt” from sysprotects.action:

```
sp_helprotect @permission_name = "Decrypt"
```

| grantor | grantee  | type  | action  | object   | column | grantable |
|---------|----------|-------|---------|----------|--------|-----------|
| sal     | hr_login | Grant | Decrypt | employee | ssn    | TRUE      |
| sal     | hr_role  | Grant | Decrypt | employee | ssn    | FALSE     |

#### Usage

- `sp_helprotect` reports permissions on a database object. If you supply the *username* parameter, only that user's permissions on the database object are reported. If *name* is not an object, `sp_helprotect` checks to see if it is a user, a group, a role, or a permission name. If it is, `sp_helprotect` lists the permissions for the user, group, or role.
- `sp_helprotect` looks for objects and users in the current database only.
- If you do not specify an optional value such as `granted`, `enabled`, `none`, or *role\_name*, Adaptive Server returns information on all roles activated by the current specified user.
- If the specified user is not the current user, Adaptive Server returns information on all roles granted to the specified user.
- Displayed information always includes permissions granted to the group in which the specified user is a member.
- In granting permissions, a System Administrator is treated as the object owner. If a System Administrator grants permission on another user's object, the owner's name appears as the grantor in `sp_helprotect` output.

#### *sp\_helprotect* and encrypted columns

`sp_helprotect` reports new information on encrypted columns, encryption keys, and users as follows:

- Tables and columns – reports who has been granted decrypt permission and on which columns.
- Encryption keys – reports who has been granted select permission.
- Users – indicates users who have been granted create encryption key permission.

#### Permissions

Any user can execute `sp_helprotect` to view his or her own permissions. Only the SSO can view permissions for all users.

#### Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** grant, revoke

**System procedures** sp\_activeroles, sp\_displayroles

## sp\_helpsegment

|             |                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports information about a particular segment or about all segments in the current database.                                                                              |
| Syntax      | sp_helpsegment [ <i>segname</i> ]                                                                                                                                          |
| Parameters  | <i>segname</i><br>is the name of the segment about which you want information. If you omit this parameter, information about all segments in the current database appears. |
| Examples    | <b>Example 1</b> Reports information about all segments in the current database:                                                                                           |

```
sp_helpsegment
```

| segment | name       | status |
|---------|------------|--------|
| 0       | system     | 0      |
| 1       | default    | 1      |
| 2       | logsegment | 0      |
| 3       | seg1       | 0      |
| 4       | seg2       | 0      |
| 5       | seg3       | 0      |
| 6       | seg4       | 0      |

**Example 2** Reports information about the segment named `order_seg`. This includes database tables and indexes that bond to this segment—the tables/indexes currently having this segment specified at the table/index level—as well as the objects currently on this segment (partitions that are actually located on this segment). In addition, this example reports the total number of pages, free pages, used pages, and reserved pages on this segment:

```
sp_helpsegment seg1
```

```
segment name                status
-----
      3 seg1                  0

device          size          free_pages
-----
pubs_dev1      2.0MB          240
```

Objects on segment 'seg1':

```
table_name    index_name        indid  partition_name
-----
fictionsales  fictionsales      0      q1
pb_fictionsales pb_fictionsales  0      lov
```

Objects currently bound to segment 'seg1':

```
table_name  index_name  indid
-----
new_titles  new_titles      0

total_size  total_pages  free-pages  used_pages  reserved pages
-----
2.0MB       256         240         16          0
```

**Example 3** Reports information about the default segment. The keyword default must be enclosed in quotes. The output has been abridged due to length.

```
sp_helpsegment "default"
```

```
segment  name  status
-----
      1  default  1

device  size  free_pages
-----
master  14.0MB  303
pubs_dev1  2.0MB  240
pubs_dev2  2.0MB  232
pubs_dev3  2.0MB  232
pubs_dev4  2.0MB  240
```

Objects on segment 'default':

| table_name | index_name | indid | partition_name      |
|------------|------------|-------|---------------------|
| -----      | -----      | ----- | -----               |
| au_pix     | au_pix     | 0     | au_pix_864003078    |
| au_pix     | tau_pix    | 0     | tau_pix_864003078   |
| ...        |            |       |                     |
| titles     | title_idx  | 0     | p1                  |
| titles     | title_idx  | 0     | p2                  |
| titles     | title_idx  | 0     | p3                  |
| titles     | title_idx  | 0     | title_idx_985051514 |

Objects currently bound to segment 'default':

| table_name  | index_name | indid |  |  |
|-------------|------------|-------|--|--|
| -----       | -----      | ----- |  |  |
| au_pix      | au_pix     | 0     |  |  |
| ...         |            |       |  |  |
| titleauthor | titleidind | 3     |  |  |
| titles      | title_idx  | 1     |  |  |

| total_size | total_pages | free_pages | used_pages | reserved_pages |
|------------|-------------|------------|------------|----------------|
| -----      | -----       | -----      | -----      | -----          |
| 22.0MB     | 2816        | 1247       | 1569       | 0              |

**Example 4** Reports information about the segment on which the transaction log is stored:

```
1> sp_helpsegment "logsegment"
2> go
```

| segment name | status |
|--------------|--------|
| -----        | -----  |
| 2 logsegment | 0      |

| device    | device size |
|-----------|-------------|
| -----     | -----       |
| master    | 14.0MB      |
| pubs_dev1 | 2.0MB       |
| pubs_dev2 | 2.0MB       |
| pubs_dev3 | 2.0MB       |
| pubs_dev4 | 2.0MB       |

| free_pages |
|------------|
| -----      |
| 1239       |

Objects on segment 'logsegment':

```
table_name index_name indid partition_name
-----
syslogs    syslogs      0    syslogs_8
```

Objects currently bound to segment 'logsegment':

```
table_name index_name indid
-----
syslogs    syslogs      0
```

```
total_size    total_pages    free_pages    used_pages    reserved_pages
-----
22.0MB        2816           1239          13            0
```

(return status = 0)

**Usage**

- sp\_helpsegment displays information about the specified segment, when *segname* is given, or about all segments in the current database, when no argument is given.
- When you first create a database, Adaptive Server automatically creates the system, default, and logsegment segments. Use sp\_addsegment to add segments to the current database.
- If you specify a log segment from a dedicated log database for the *segname* parameter, sp\_helpsegment reports the number of free pages in the log segment.
- The system, default, and logsegment segments are numbered 0, 1, and 2, respectively.
- The “status” column indicates which segment is the default pool of space. Use sp\_placeobject or the on *segment\_name* clause of the create table or create index command to place objects on specific segments.
- The “indid” column is 0 if the table does not have a clustered index and is 1 if the table has a clustered index.

**Permissions**

Any user can execute sp\_helpsegment.

**Auditing**

Values in event and extrainfo columns from the sysaudits table are:



| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create index, create table

**System procedures** sp\_addsegment, sp\_dropsegment, sp\_extendsegment, sp\_helpdb, sp\_helpdevice, sp\_placeobject

## sp\_helpserver

**Description** Reports information about a particular remote server or about all remote servers.

**Syntax** sp\_helpserver [server]

**Parameters** server  
is the name of the remote server about which you want information.

**Examples** **Example 1** Displays information about the remote server GATEWAY:

```
sp_helpserver GATEWAY
```

**Example 2** Displays information about the local Backup Server:

```
sp_helpserver SYB_BACKUP
```

```
name          network_name  status                                     id
-----
SYB_BACKUP SYB_BACKUP  timeouts, no net password encryption  1
```

**Example 3** Displays information about all the remote servers known to the local server:

```
sp_helpserver
```

**Usage**

- sp\_helpserver reports information about all servers in master.dbo.syssservers or about a particular remote server, when server is specified.
- When Component Integration Services is installed, sp\_helpserver lists the server class for each server.

**Permissions** Any user can execute sp\_helpserver.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                               |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• Roles – Current active roles</li> <li>• Keywords or options – NULL</li> <li>• Previous value – NULL</li> <li>• Current value – NULL</li> <li>• Other information – All input parameters</li> <li>• Proxy information – Original login name, if set proxy in effect</li> </ul> |

**See also** **System procedures** sp\_addserver, sp\_dropserver, sp\_helpremotelogin, sp\_serveroption

## sp\_helpsort

|             |                                                                  |
|-------------|------------------------------------------------------------------|
| Description | Displays Adaptive Server's default sort order and character set. |
| Syntax      | sp_helpsort                                                      |
| Parameters  | None.                                                            |

**Examples** **Example 1** For Class 1 (single-byte) character sets, sp\_helpsort displays the name of the server's default sort order, its character set, and a table of its primary sort values. On a 7-bit terminal, it appears as follows:

```
sp_helpsort
Sort Order Description
-----
Character Set = 1, iso_1
      ISO 8859-1 (Latin-1) - Western European 8-bit character set.
Sort Order = 50, bin_iso_1
      Binary sort order for the ISO 8859/1 character set (iso_1).
Characters, in Order
-----
! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _
` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~
! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _
` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~
```

**Example 2** On an 8-bit terminal, it appears as follows:

```
Sort Order Description
-----
Character Set = 1, iso_1
      ISO 8859-1 (Latin-1) - Western European 8-bit character set.
Sort Order = 50, bin_iso_1
      Binary sort order for the ISO 8859/1 character set (iso_1).
Characters, in Order
-----
! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _
` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~
ı ç £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾ ¿ À
Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï Ð Ñ Ò Ó Ô Õ Ö × Ø Ù Ú Û Ü Ý Þ à
á â ã ä å æ ç è é ê ë ì í î ï ñ ò ó ô õ ö ÷ ø ù ú û ü ý þ ÿ
```

**Example 3** For a Class 2 (multibyte) character set, the characters are not listed, but a description of the character set is included. For example:

```
Sort Order Description
-----
Character Set = 140, euc_jis
  Japanese. Extended Unix Code mapping for JIS-X0201
  (hankaku katakana) and JIS-X0208 (double byte) roman,
  kana, and kanji.
  Class 2 character set
Sort Order = 50, bin_eucjis
  Binary sort order for Japanese using the EUC JIS
  character set as a basis.
```

**Example 4** For case-insensitive character sets, the name and sort order ID of available case-insensitive sort orders is listed:

| Name            | ID |
|-----------------|----|
| nocase_eucgb    | 52 |
| nocase_cp936    | 52 |
| nocase_gb18030  | 52 |
| nocase_eucjis   | 52 |
| nocase_sjis     | 52 |
| nocase_deckanji | 52 |

Usage • Binary sort order is the default.

Permissions Any user can execute sp\_helpsort.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                               |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• Roles – Current active roles</li> <li>• Keywords or options – NULL</li> <li>• Previous value – NULL</li> <li>• Current value – NULL</li> <li>• Other information – All input parameters</li> <li>• Proxy information – Original login name, if set proxy in effect</li> </ul> |

## sp\_helptext

**Description** Displays the source text of a compiled object, as well as the text for user-defined functions, computed columns, or function-based index definitions.

**Syntax** `sp_helptext objname[,grouping_num][, numlines[, printopts]]`

**Parameters**

*objname*

is the name of the compiled object for which the source text is to be displayed. The compiled object must be in the current database.

*grouping\_num*

is an integer identifying an individual procedure, when *objname* represents a group of procedures. This parameter tells `sp_helptext` to display the source text for a specified procedure in the group.

This parameter also specifies the start line number from which to generate the SQL text, when the *printopts* argument is used.

---

**Note** Views, defaults, and other non-procedural objects are never grouped; use *number* only for groups of procedures.

---

*numlines*

specifies the numbers of lines for which to generate SQL text. If the argument *printopts* is also used with `showsql`, *numlines* specifies the number of lines of SQL text to display; if *printopts* is used with `context`, *numlines* is treated as the context block width surrounding the starting line number.

*printopts*

supports various comma-separated properties of the output format. One or more of these print options can be specified, in any order, as a comma-separated string:

- `showsql` – generates formatted SQL output for the compiled object. If `showsql` does not appear in the *printopts* list, this property is not invoked.
- `linenumbers` – produces line numbers for each line of SQL output.
- `comments` – produces the line numbers as a comment field (`/*<nnn>*/`), so that the generated SQL can still recreate the compiled object, without further edits, if necessary.
- `context` – produces a context block of output around a specified starting line number. If `no`, or `null`, *numlines* parameter is called, a default context block of five lines, generated before and after the line number of interest, is supplied.
- `noparams` – suppresses the automatically generated parameter information. Use this print option to produce only the relevant portion of SQL output for the compiled object.
- `ddlgen` – generates the SQL text as a DDL script, prefacing the output with a `use database` command and a `drop object` command. This allows you to reproduce almost exactly the SQL required to recreate most compiled objects, such as procedures, triggers, views, defaults, and rules.

The print options `ddlgen` and `context` are mutually exclusive specifiers. Used together, they raise an error. To get line numbers when you are displaying a context block of SQL text, use the `context` and `linenumbers` specifiers.

## Examples

**Example 1** Displays the source text of `pub_idrule`. Since this rule is in the `pubs2` database, execute this command from `pubs2`:

```
sp_helptext pub_idrule

# Lines of Text
-----
1

text
-----
create rule pub_idrule
as @pub_id in ("1389", "0736", "0877",
              "1622", "1756")
   or @pub_id like "99[0-9][0-9]"
```

**Example 2** Displays the source text of `sp_helptext`. Since system procedures are stored in `sybssystemprocs`, execute this command from `sybssystemprocs`:

```
sp_helptext sp_helptext
```

**Example 3** Displays the source text of the `myproc` group behavior where you specify no *number* argument. The number of the procedure displays beside the text:

```
sp_helptext myproc
# Lines of Text
-----
2
number
text
-----
1
create procedure myproc; as select 1
2
create procedure myproc;2 as select 2
(2 rows affected)
```

**Example 4** Displays the source text of `myproc`, specifying a procedure in the *myproc* group but displaying no grouping number.

```
sp_helptext myproc, 2
# Lines of Text
-----
1
text
-----
create procedure myproc;2 as select 2
```

**Example 5** Generates text for `sp_help`:

```
sp_helptext sp_help,NULL,NULLM 'showsql'
```

**Example 6** To generate text for `sp_help`, producing line numbers:

```
sp_helptext sp_help, NULL,NULL, 'showsql,linenumbers'
```

**Example 7** To generate the text for `sp_help`, in a context block of seven lines starting at line 25, with output generated in a comment block:

```
sp_helptext sp_help,25,7, 'showsql,comments,context'
```

**Example 8** Generates the text for `sp_droptabledef`, producing the output as a stand-alone DDL script that you can use to recreate the procedure:

```
sp_helptext sp_droptabledef,NULL,NULL, 'showsql,ddlgen'
```

```

-----
use sybtempprocs

-----

IF EXISTS (SELECT 1 FROM sysobjects
WHERE name = 'sp_droptabledef'
AND type = 'P'
DROP PROCEDURE sp_droptabledef
-----

/*Sccsud="%Z%generic/sproc/src/%M%%I%G%"/
/*
**Omni only
*/
create procedure sp_droptabledef
    @tablename varchar(92) /*tablename*/
as begin
    declare @status int
    exec @status = sp_dropobjectdef @tablename
    return(@status)
end
-----
(return status = 0)

```

**Example 9** Uses `sp_helptext` on a view created with delimited identifiers. You do not need `set quoted_identifier` on to extract the SQL defining the view. You do need it ON to create objects using delimited identifiers.

```

set quoted_identifier ON
-----
create table "t one"
    (c1 int,
    "c two" varchar(10),
    "c three" int)
-----
create table "t two"
    ("t2 one" int,
    "t2 two" varchar(10),
    t2_three int)
-----
create view "v one" as
    select * from "t one"
    UNION
    select "t2 one","t2 two",t2_three
    from "t two"
-----

```

**Example 10**



Uses `sp_helptext` on one of its subprocedures, `sp_showtext_output`, to identify the context of SQL source code surrounding line 813:

```
sp_helptext sp_showtext_output,
813, NULL, 'context, linenumbers, showsql'
```

#### Usage

- `sp_helptext` truncates trailing spaces when displaying the source text from `syscomments`
- `sp_helptext` prints out the number of rows in `syscomments` (255 characters long each) that are occupied by the compiled object, followed by the source text of the compiled object.
- The source-text is displayed using `char(255)`, so trailing spaces are present in the displayed text. The text stored in `syscomments` may not include these trailing spaces. `syscomments` stores the text "as supplied," so another application or tool may not have included these trailing spaces. Because of this, you should not use `sp_helptext` to get a copy of the text stored. Instead, use other tools like `defncopy`.
- `sp_helptext` looks for the source text in the `syscomments` table in the current database.
- You can encrypt the source text with `sp_hidetext`.
- When `sp_helptext` operates on a group of procedures, it prints the number column from `syscomments` in addition to the source text.
- A System Security Officer can prevent the source text of compiled objects from being displayed to most users who execute `sp_helptext`. To restrict select permission on the text column of the `syscomments` table to the object owner or a System Administrator, use `sp_configure` to set the `select on syscomments.text` column parameter to 0. This restriction is required to run Adaptive Server in the evaluated configuration. See the *System Administration Guide* for more information about the evaluated configuration.
- Even when you use `sp_helptext` in `ddlgen` mode, the `showsql` print option is required.
- The object whose text you want to retrieve must reside in the database where the procedure is executed.
- If the text is either hidden or not in `syscomments`, an error message is raised. If, however, you request a context block output, and the text is missing or hidden, a message reporting the missing text is printed, but no error is raised.

- Text generated using the `ddlgen print` option may still fail to create a compiled object correctly if it contains references to other objects, such as temporary tables, that do not already exist when the generated script is executed.
- If the compiled object contains a `select *` statement, it usually reflects the entire column list of the table this statement references.
- You can generate SQL text for compiled objects created with quoted identifiers, but if the compiled object contains a `select *` statement, the expanded column list appears with bracketed identifiers after Adaptive Server writes the text to `syscomments`.

For example:

```
[this column], [column name with space]
```

It is not necessary to set `quoted_identifier ON` when generating text for compiled objects that are themselves, or use, delimited identifiers.

Permissions

Any user can execute `sp_helptext`.

Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** `sp_checksourc`, `sp_configure`, `sp_hidetext`

## sp\_helpthreshold

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports the segment, free-space value, status, and stored procedure associated with all thresholds in the current database or all thresholds for a particular segment.                                                                                                                                                                                                                                                                         |
| Syntax      | sp_helpthreshold [ <i>segname</i> ]                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <i>segname</i><br>is the name of a segment in the current database.                                                                                                                                                                                                                                                                                                                                                                            |
| Examples    | <p><b>Example 1</b> Shows all thresholds on the log segment:</p> <pre>sp_helpthreshold logsegment</pre> <p><b>Example 2</b> Shows all thresholds on all segments in the current database:</p> <pre>sp_helpthreshold</pre> <p><b>Example 3</b> Shows all thresholds on the default segment. Note the use of quotes around the reserved word “default”:</p> <pre>sp_helpthreshold "default"</pre>                                                |
| Usage       | <ul style="list-style-type: none"> <li>sp_helpthreshold displays threshold information for all segments in the current database. If you provide the name of a segment, sp_helpthreshold lists all thresholds in that segment.</li> <li>The status column is 1 for the last-chance threshold and 0 for all other thresholds. Databases that do not store their transaction logs on a separate segment have no last-chance threshold.</li> </ul> |
| Permissions | Any user can execute sp_helpthreshold.                                                                                                                                                                                                                                                                                                                                                                                                         |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                            |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** sp\_addthreshold, sp\_droptreshold, sp\_helpsegment, sp\_modifythreshold, sp\_thresholdaction

## sp\_helpuser

**Description** Reports information about a particular user, group, or alias, or about all users, in the current database.

**Syntax** sp\_helpuser [*name\_in\_db*]

**Parameters** *name\_in\_db*  
is the user's name in the current database.

**Examples** **Example 1** Displays information about all users in the current database:

```
sp_helpuser
Users_name  ID_in_db    Group_name  Login_name
-----
ann         4           hackers    ann
dbo         1           public     sa
guest       2           public     NULL
judy        3           hackers    judy
```

**Example 2** Displays information about the Database Owner (user name "dbo"):

```
sp_helpuser dbo
Users_name      ID_in_db    Group_name  Login_name
-----
dbo              1           public     sa
Users aliased to user.
Login_name
-----
andy
christa
howard
linda
```

**Usage**

- sp\_helpuser reports information about all users of the current database. If you specify a *name\_in\_db*, sp\_helpuser reports information on the specified user only.
- If the specified user is not listed in the current database's sysusers table, sp\_helpuser checks to see if the user is aliased to another user or is a group name.

**Permissions** Any user can execute sp\_helpuser.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_adduser, sp\_dropuser, sp\_helpgroup

## sp\_hidetext

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Hides the source text for the specified compiled object, as well as the text of computed columns and function-based index keys. sp_hidetext also encrypts the text for user-defined functions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax      | sp_hidetext [ <i>objname</i> [, <i>tablename</i> [, <i>username</i> ]]]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>objname</i><br/>specifies the compiled object for which to hide the source text.</p> <p><i>tablename</i><br/>specifies the name of the table or view for which to hide the source text.</p> <p><i>username</i><br/>specifies the name of the user who owns the compiled object for which to hide the source text.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Examples    | <p><b>Example 1</b> Hides the source text of all compiled objects in the current database:</p> <pre>sp_hidetext</pre> <p><b>Example 2</b> Hides the source text of the user-defined stored procedure, sp_sort_table, that is owned by Mary:</p> <pre>sp_hidetext @objname = "sp_sort_table",<br/>            @username = "Mary"</pre> <p><b>Example 3</b> Hides the source text of the stored procedure pr_phone_list:</p> <pre>sp_hidetext "pr_phone_list"</pre> <p><b>Example 4</b> Hides the source text of all check constraints, defaults, and triggers defined on the table my_tab:</p> <pre>sp_hidetext @tablename = "my_tab"</pre> <p><b>Example 5</b> Hides the source text of the view my_vu and all check constraints, defaults, and triggers defined on the table my_tab:</p> <pre>sp_hidetext "my_vu", "my_tab"</pre> <p><b>Example 6</b> Hides the source text of all compiled objects that are owned by Tom:</p> <pre>sp_hidetext @username = "Tom"</pre> |

- Usage
- `sp_hidetext` hides the source text for the specified compiled object.
- 
- Warning!** Before executing `sp_hidetext`, make sure you have a backup of the source text. The results of executing `sp_hidetext` are not reversible.
- 
- If you do not provide any parameters, `sp_hidetext` hides the source text for all compiled objects in the current database.
  - If you use `sp_hidetext` followed by a cross-platform dump and load, you must manually drop and re-create all hidden objects.

Permissions Any user can use `sp_hidetext` to hide the source text of his or her own compiled objects. Only a Database Owner or a System Administrator can hide the source text of compiled objects that are owned by another user or use `sp_hidetext` with no parameters.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** `dump database`, `dump transaction`, `load database`, `load transaction`

**Documents** See the *Transact-SQL User's Guide* for more information about hiding source text.

**System procedures** `sp_checksourc`

## sp\_import\_qpgroup

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Imports abstract plans from a user table into an abstract plan group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <code>sp_import_qpgroup tab, usr, group</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Parameters  | <p><i>tab</i></p> <p>is the name of a table from which to copy the plans. You can specify a database name, but not an owner name, in the form <i>dbname..tablename</i>. The total length can be up to 255 characters long.</p> <p><i>usr</i></p> <p>is the name of the user whose ID should be assigned to the abstract plans when they are imported.</p> <p><i>group</i></p> <p>is the name of the abstract plan group that contains the plans to be imported.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Examples    | <p>Copies plans from the table <code>moveplans</code> to the <code>new_plans</code> group, giving them the user ID for the Database Owner:</p> <pre>sp_import_qpgroup moveplans, dbo, new_plans</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Usage       | <ul style="list-style-type: none"><li>• <code>sp_import_qpgroup</code> copies plans from a user table to an abstract plan group in <code>sysqueryplans</code>. With <code>sp_export_qpgroup</code>, it can be used to copy abstract plan groups between servers and databases, or to copy plans belonging to one user and assign them the ID of another user.</li><li>• <code>sp_import_qpgroup</code> creates the abstract plan group if it does not exist when the procedure is executed.</li><li>• If an abstract plan group exists when <code>sp_import_qpgroup</code> is executed, it cannot contain any plans for the specified user. <code>sp_import_qpgroup</code> does not check the query text to determine whether queries already exist in the group. If you need to import plans for a user into a group where some plans for the user already exist:<ul style="list-style-type: none"><li>• Use <code>sp_import_qpgroup</code> to import the plans into a new plan group.</li><li>• Use <code>sp_copy_all_qpplans</code> to copy the plans from the newly-created group to the destination group. <code>sp_copy_all_qpplans</code> does check queries to be sure that no duplicate plans are created.</li><li>• If you no longer need the group you created for the import, drop the plans in the group with <code>sp_copy_all_qpplans</code>, then drop the group with <code>sp_drop_qpgroup</code>.</li></ul></li><li>• To create an empty table in order to bulk copy abstract plans, use:<pre>select * into load_table</pre></li></ul> |



```

from sysqueryplans
where 1 = 2

```

**Permissions** Only a System Administrator or the Database Owner can execute `sp_import_qpgroup`.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

| <b>Event</b> | <b>Audit option</b>         | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | <code>exec_procedure</code> | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **Commands** `create plan`

**System procedures** `sp_copy_all_qplans`, `sp_copy_qplan`, `sp_drop_all_qplans`, `sp_drop_qpgroup`, `sp_export_qpgroup`, `sp_help_qpgroup`

## sp\_indsuspect

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Checks user tables for indexes marked as suspect during recovery following a sort order change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax      | sp_indsuspect [ <i>tab_name</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Parameters  | <i>tab_name</i><br>is the name of the user table to be checked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Examples    | Checks the table newaccts for indexes marked as suspect:<br><br><pre>sp_indsuspect newaccts</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Usage       | <ul style="list-style-type: none"> <li>• sp_indsuspect with no parameter creates a list of all tables in the current database that have indexes that need to be rebuilt as a result of a sort order change. With a <i>tab_name</i> parameter, sp_indsuspect checks the specified table for indexes marked as suspect during recovery following a sort order change.</li> <li>• Use sp_indsuspect to list all suspect indexes. The table owner or a System Administrator can use dbcc reindex to check the integrity of the listed indexes and to rebuild them if necessary.</li> </ul> |
| Permissions | Any user can execute sp_indsuspect.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** dbcc

## sp\_jreconfig

**Description** Manages the Java PCA/JVM. Enables or disables arguments and directives, changes configuration values, and reports configuration values.

---

**Note** You can safely change the `pca_jvm_module_path`, `pca_jvm_work_dir`, `pca_jvm_dbg_agent_port`, `pca_jvm_java_dbg_agent_suspend`, `pca_jvm_java_options` and `pca_jvm_netio` arguments. Do not use `sp_jreconfig` to change other arguments or directives unless instructed to do so by Sybase Technical Support.

---

**Syntax**

```
sp_jreconfig {
    add array_arg, new_string |
    array_clear array_arg |
    array_enable array_arg |
    array_disable array_arg |
    delete array_arg, string_value |
    disable { directive | argument | array_arg, string_value } |
    enable { directive | argument | array_arg, string_value } |
    list { list_type [, formatted ] | units | units, units_type[, formatted ] } |
    reload_config |
    report { directive[, formatted ] | directive, args[, formatted ]
            |argument[, formatted ] } |
    update { argument, old_value, new_value } }
```

**Parameters**

`add`  
adds a new argument to an argument array. Use `add` only with arguments where `units_type` is array.

`array_arg`  
is the name of an argument where `units_type` is array.

`new_string`  
is the string value for a new array element.

`array_clear`  
deletes all element in an argument array.

`array_enable`  
enables all elements in an argument array. Sets each array element to enabled.

`array_disable`  
disables, but does not delete, all elements in an argument array. Sets each element to disabled.

delete

removes an existing element from an argument array. Use delete only with arguments where *units\_type* is array.

disable

disables the specified directive or argument.

*string\_value*

identifies an array element in the named argument array that is to be deleted, enabled, or disabled.

directive

is the name of a valid directive.

argument

is the name of a valid argument.

enable

enables a directive or an argument.

list

lists groups of related arguments as, for example, sp\_jreconfig list, directives or sp\_jreconfig list, enabled. Also, lists all arguments of a specific type as, for example, sp\_jreconfig list, units, string. To see all current *units\_types* values, use sp\_jreconfig list, units.

formatted

formats the displayed list for readability; longer values may be truncated.

---

**Note** In formatted reports, the process of improving readability may truncate wide columns. In addition, column headings may be overridden and may not match the actual table name. Do not format reports if the output will be parsed or potential data truncation is not acceptable.

---

*list\_type*

specifies a type of list. Values are:

- directives – list of directives
- enabled – list of enabled arguments
- disabled – list of disabled arguments
- argnames – list of argument names, each argument's *units\_type*, and the directive to which each belongs

units

when used with list, generates a list of *units\_type* currently in use.

*units\_type*

is a type of argument. Every argument has a *units\_type* that identifies its type. Values are:

- switch
- string
- number
- array

*reload\_config*

reloads the configuration from the sybpcidb tables into memory. See “Restoring default configuration values to sybpcidb” in Chapter 2, “Managing the Java Environment,” in *Java in Adaptive Server Enterprise*.

*report*

creates a report based on arguments supplied. Usually used to generate a report for an argument to see its current value and whether or not it is enabled. Can also be used to generate a report for a directive or its arguments.

*directive*

is any valid directive.

*args*

is a keyword used with *report* to generate a list of argument names for the named directive. For example:

```
sp_jreconfig report, "PCA_JVM", "args"
```

*update*

modifies a string or numeric value for an argument where *units\_type* is string, number, or array. You cannot modify an argument when *units\_type* is switch.

*old\_value*

is a string or numeric value that identifies the existing argument or array element being updated.

*new\_value*

is a string or numeric value that defines the new argument or array element.

**Examples**

**Example 1** Generates a formatted report for the PCA\_JVM\_OPT directive:

```
sp_jreconfig "report", "PCA_JVM_OPT", "formatted"
```

**Example 2** Generates a report of the arguments of the PCA\_JVM\_OPT directive:

```
sp_jreconfig "report", "PCA_JVM_OPT", "args"
```

**Example 3** Generates a report for the argument `pca_jvm_netio`.

```
sp_jreconfig "report", "pca_jvm_netio"
```

**Example 4** Generates a report for all arguments that match `"pca_jvm"`. A partial argument name generates a report for all matching arguments.

```
sp_jreconfig "report", "pca_jvm_"
```

**Example 5** *Generating lists* – displays a list of all directives and their state: enabled or disabled.

```
sp_jreconfig "list", "directives"
```

**Example 6** *Generating lists* – displays a list of all arguments, their units types, and directives.

```
sp_jreconfig "list", "argnames", "formatted"
```

**Example 7** *Generating lists* – displays a list of all currently enabled arguments.

```
sp_jreconfig "list", "enabled"
```

**Example 8** *Generating lists* – displays a formatted list of all array arguments.

```
sp_jreconfig "list", "units", "array", "formatted"
```

**Example 9** *Generating lists* – display a list of argument unit types. The report for this command is formatted by default. Using the `“-formatted”` option generates an error.

```
sp_jreconfig "list", "units"
```

**Example 10** *Enabling directives and arguments* – enables the `PCA_JVM_WORK_DIR` directive. You can use a partial directive name as long as it includes sufficient information to uniquely identify the directive.

```
sp_jreconfig "enable", "PCA_JVM_WORK_DIR"  
sp_jreconfig "enable", "WORK_DIR"
```

**Example 11** *Enabling directives and arguments* – enables the `pca_jvm_netio` argument.

```
sp_jreconfig "enable", "pca_jvm_netio"
```

**Example 12** *Disabling directives and arguments* – disables the `WORK_DIR` directive. This example uses a partial directive name, which must include sufficient information to uniquely identify the directive.

---

```
sp_jreconfig "disable", "WORK_DIR"
```

---

**Note** Disabling a directives causes its arguments to behave as disabled, but does not change their base states.

---

**Example 13** *Disabling directives and arguments* – disables the `pca_jvm_netio` argument.

```
sp_jreconfig "disable", "pca_jvm_netio"
```

**Example 14** *Disabling directives and arguments* – disables array elements in `PCA_JVM_WORK_DIR`. The path, but not the permissions mask, is required. See Chapter 8, “File and Network Access Using Java,” in *Java in Adaptive Server Enterprise*.

```
sp_jreconfig "disable", "pca_jvm_work_dir",
"/some/path"
```

**Example 15** *Updating string, number, and array arguments* – updates a string argument. This example updates the file location of the `pca_jvm_log_filename` argument.

```
sp_jreconfig "update", "pca_jvm_log_filename", "/old/path/filename.log",
"/new/path/filename.log"
```

---

**Note** The update option cannot be used with directives or switch argument as these items can not be modified.

---

**Example 16** *Updating string, number, and array arguments* – updates a number argument. Numeric values must be enclosed in quotes (as strings) for the stored procedure. Adaptive Server stores them as numeric values.

```
sp_jreconfig "update", "pca_jvm_min_port", "1026",
"2056"
```

**Example 17** *Updating string, number, and array arguments* – for the `PCA_JVM_WORK_DIR` directive, `work_dir` values consist of a path and an optional permission mask. Although the permission mask is optional, you must include the original string path to identify the `work_dir`. A permission mask is optional. If it is not supplied, the system uses a default mask with an octal equivalent of 0666. Example a does not set a permission mask; it uses the default mask. Examples b and c each set a permission mask of 0644.

```
[a] sp_jreconfig "update", "pca_jvm_work_dir",
"/old/path", "/new/working/directory"
```

```
[b] sp_jreconfig "update", "pca_jvm_work_dir",  
    "/old/path", "/new/working/directory(u=rw,go=r) "
```

```
[c] sp_jreconfig "update", "pca_jvm_work_dir",  
    "/old/path", "/new/working/directory(u+w,ugo+r) "
```

**Example 18** *Adding array elements* – adds new elements to the `pca_jvm_work_dir` argument array in the `PCA_JVM_WORK_DIR` directive. Example a uses the default mask. Examples b and c each set a permissions mask of 0644. (The mask is evaluated from left to right.)

```
[a] sp_jreconfig "add", "pca_jvm_work_dir",  
    "/new/working/directory"
```

```
[b] sp_jreconfig "add", "pca_jvm_work_dir",  
    "/new/working/directory(u=rw,go=r) "
```

```
[c] sp_jreconfig "add", "pca_jvm_work_dir",  
    "/new/working/directory(u+w,ugo+r) "
```

**Example 19** *Deleting array elements* – Deletes an array element in `pca_jvm_work_dir`.

```
sp_jreconfig "delete", "pca_jvm_work_dir",  
    "/new/working/directory"
```

---

**Note** To delete an element in `pca_jvm_work_dir` in the `PCA_JVM_WORK_DIR` directive, you can specify a partial string if the string supplied identifies a unique record. The permission mask is not required; you only need to supply the path even if the `work_dir` element was originally defined with a specific permission mask.

---

**Example 20** *Enabling or disabling all elements in an array* – enables all elements in the `pca_jvm_work_dir` array.

```
sp_jreconfig "array_enable", "pca_jvm_work_dir"
```

**Example 21** *Enabling or disabling all elements in an array* – disables all elements in the `pca_jvm_work_dir` array.

```
sp_jreconfig "array_disable", "pca_jvm_work_dir"
```

**Example 22** *Clearing all records in an array* – deletes all records in the `pca_jvm_work_dir` array and creates an empty array.

```
sp_jreconfig "array_clear", "pca_jvm_work_dir"
```



**Example 23** *Reloading default configuration values* – Loads the configuration values stored in `sybpcidb` into memory.

```
sp_jreconfig "reload_config"
```

Usage

Enabling and disabling directives and arguments

Enabling and disabling a directive works like a toggle:

- *When a directive is enabled*– Adaptive Server uses the configured value (enabled or disabled) of each argument. This is the value stored in `sybpcidb`.
- *When a directive is disabled* – Adaptive Server disregards the configured value (enabled or disabled) of each argument and treats all arguments of the directive as disabled, although the base value of each argument is retained in `sybpcidb`.

Arguments can be individually enabled or disabled. Arguments are of these types:

- *switch* – these arguments turn a feature on or off. For example, if the argument for logging is enabled, a log file is generated; if the argument for logging is disabled, no log file is generated.
- *string* – these arguments are for string and number values. Enabling a string or number argument ensures that Adaptive Server uses the configured value. Disabling a string or number argument means that Adaptive Server ignores the configured value and uses the default value. The configured and default values may or may not be the same.
- *array* – an array argument is a collection of related string arguments, each of which can be individually enabled or disabled. When an individual string argument (or element) is disabled, its value is ignored and the behavior is the same as if the element had been deleted. When enabled, the argument value is included in the collection and is active.

Array arguments can be enabled or disabled at will; you do not have to delete a value and then re-enter it later on.

**Table 1-16: Configuration directives for `sp_jreconfig`**

| Directive                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>PCA_JVM_MODULE_PATH</code> | The path to the JVM shared-object library. If you use a JRE other than that supplied by Sybase, you must configure this argument to point to a location accessible to the PCA/JVM. This can be an absolute path or a relative path that extends <code>\$\$SYBASE</code> . If an absolute path, start the path with “/” on UNIX or “\” on Windows. Otherwise, Adaptive Server assumes a relative path and looks under <code>\$\$SYBASE</code> . |

| Directive                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PCA_JVM_OPT                 | Do not change default values unless instructed to do so by Sybase Technical Support.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| PCA_JVM_DIR_OPTIONS         | Directory definitions used by the JVM for the ROOT and TEMP directories. Do not change these values unless you are a knowledgeable user or you have been directed to do so by Sybase Technical Support.<br><br><b>Warning!</b> Use this directive with care. The <code>pca_jvm_tmp_dir</code> in the <code>PCA_JVM_DIR_OPTIONS</code> directive should always point to the system temporary directory. Changing this location can be a serious security risk. The JVM allows files to be opened for reading and writing, and allows file creation in this directory. |
| PCA_JVM_WORK_DIR            | Configures the JVM trusted directories. This argument consists of a collection of specific locations in your file system where your Java program classes can perform certain file I/O operations. Each directory can have an optional permission mask that defines which file I/O operations are allowed in each directory.                                                                                                                                                                                                                                          |
| PCA_JVM_MIN_JNI_VERSION     | Minimum backward compatible JNI version.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PCA_JVM_LOGGING             | JRE/VM logging options.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PCA_JVM_EXT_CLASS_LOADER    | Global and database extension class loaders.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PCA_JVM_JAVA_OPTIONS        | Java start-up options, both normal and extended.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PCA_JVM_JAVA_DBG_AGENT_PORT | Java VM debug agent port number (used for debugging Java applications with a Java debugger). See <i>Java in Adaptive Server Enterprise</i> for more information.                                                                                                                                                                                                                                                                                                                                                                                                     |
| PCA_JVM_SYS_DEVICE_PATH     | Platform-specific system device directories (required for Solaris).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**Table 1-17: PCA\_JVM\_MODULE\_PATH arguments**

| Argument                         | Units type | Default value     | Default state | Description                                                                                                         |
|----------------------------------|------------|-------------------|---------------|---------------------------------------------------------------------------------------------------------------------|
| <code>pca_jvm_module_path</code> | string     | Platform specific | Enabled       | The location of the JVM shared library using a relative path located under \$SYBASE, or a fully qualified filename. |

**Table 1-18: PCA\_JVM\_OPT arguments**

| Argument                                       | Units type | Default value | Default state | Description                                    |
|------------------------------------------------|------------|---------------|---------------|------------------------------------------------|
| <code>pca_jvm_abort</code>                     | switch     | On            | Enabled       | Abort abort(2) all on any failure (dangerous). |
| <code>pca_jvm_allow_unchecked_socketops</code> | switch     | N/A           | Disabled      | Allow unchecked socket operations.             |
| <code>pca_jvm_debug</code>                     | switch     | N/A           | Disabled      | Report PCA_DEBUG requests.                     |

| Argument                         | Units type | Default value | Default state | Description                                                       |
|----------------------------------|------------|---------------|---------------|-------------------------------------------------------------------|
| pca_jvm_except                   | switch     | N/A           | Enabled       | Report excepting PCA/VM JNI/JVM invocations.                      |
| pca_jvm_heap_ratio               | string     | 0.3           | Enabled       | VM Heap / PCI memory ratio.                                       |
| pca_jvm_jvmti                    | switch     | N/A           | Disabled      | Java VM Tools Interface.                                          |
| pca_jvm_min_port                 | number     | 1026          | Enabled       | Allow VM network support.                                         |
| pca_jvm_netio                    | switch     | N/A           | Disabled      | Allow VM network support.                                         |
| pca_jvm_report                   | switch     | N/A           | Disabled      | Report PCA/VM JNI/JVM invocations.                                |
| pca_jvm_security_manager_enabled | switch     | N/A           | Disabled      | Enable the SecurityManager in the PCA/JVM.                        |
| pca_jvm_sigcache_density         | number     | 100           | Enabled       | PCA/VM signature cache target density.                            |
| pca_jvm_sigcache_enabled         | switch     | N/A           | Enabled       | Enable PCA/VM signature cache.                                    |
| pca_jvm_sigcache_fixed_ratio     | number     | 50            | Enabled       | PCA/VM signature cache size percentage fixed.                     |
| pca_jvm_sigcache_freeboard       | number     | 30            | Enabled       | PCA/VM signature cache space recovery percentaga on cache sweeps. |
| pca_jvm_sigcache_size            | number     | 512           | Enabled       | PCA/VM signature cache size in KBytes.                            |
| pca_jvm_sigcache_size_type       | number     | 1             | Enabled       | PCA/VM signature cache size_type 0:AS_PCT 1:Kbyte 2:Mbyte.        |
| pca_jvm_sigcache_washcycle       | number     | 1000          | Enabled       | PCA/VM signature cache wash daemon cycle time (ms).               |
| pca_jvm_sigcache_washdaemon      | switch     | N/A           | Disabled      | Enable PCA/VM signature cache wash daemon.                        |
| pca_jvm_strace                   | switch     | N/A           | Enabled       | Produce stack traces on none emulated VM handles.                 |

**Table 1-19: PCA\_JVM\_DIR\_OPTIONS arguments**

| Argument         | Units type | Default value     | Default state | Description                                                             |
|------------------|------------|-------------------|---------------|-------------------------------------------------------------------------|
| pca_jvm_root_dir | string     | Platform specific | Enabled       | Absolute path to the system root directory. Required for file I/O.      |
| pca_jvm_tmp_dir  | string     | Platform specific | Enabled       | Absolute path to the system temporary directory. Required for file I/O. |

**Table 1-20: PCA\_JVM\_WORK\_DIR arguments**

| Argument         | Units type | Default value     | Default state | Description                                                                                                                                                                                                       |
|------------------|------------|-------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pca_jvm_work_dir | array      | Platform specific | Disabled      | The absolute path (and optional permission mask) where the JVM is allowed to do file I/O. See Chapter 8, “File and Network Access Using Java,” in <i>Java in Adaptive Server Enterprise</i> for more information. |

**Table 1-21: PCA\_JVM\_MIN\_JNI\_VERSION arguments**

| Argument                | Units type | Default value     | Default state | Description                              |
|-------------------------|------------|-------------------|---------------|------------------------------------------|
| pca_jvm_min_jni_version | string     | 'JNI_VERSION_1_2' | Enabled       | Minimum backward compatible JNI version. |

**Table 1-22: PCA\_JVM\_LOGGING arguments**

| Argument             | Units type | Default value       | Default state | Description                                              |
|----------------------|------------|---------------------|---------------|----------------------------------------------------------|
| pca_jvm_ase_logging  | switch     | N/A                 | Enabled       | Configure Adaptive Server logging.                       |
| pca_jvm_log_filename | string     | '/tmp/Java_vm.log1' | Disabled      | A fully qualified filename that the VM uses for logging. |

**Table 1-23: PCA\_JVM\_EXT\_CLASS\_LOADER arguments**

| Argument                        | Units type | Default value | Default state | Description                      |
|---------------------------------|------------|---------------|---------------|----------------------------------|
| pca_jvm_ext_class_loader_global | array      | none          | Disabled      | Global Extension Class Loader.   |
| pca_jvm_ext_class_loader_dbase  | array      | none          | Disabled      | Database Extension Class Loader. |

**Table 1-24: PCA\_JVM\_JAVA\_OPTIONS arguments**

| Argument             | Units type | Default value                       | Default state | Description                             |
|----------------------|------------|-------------------------------------|---------------|-----------------------------------------|
| pca_jvm_java_options | array      | "-Djava.awt.headless=true"          | Enabled       | Run Java in headless mode.              |
| pca_jvm_java_options | array      | "-Djava.compiler=JIT"               | Enabled       | Force JIT compilation and optimization. |
| pca_jvm_java_options | array      | "-XX:+CITune:"                      | Disabled      | Time spent in JIT Compiler (1.4 only).  |
| pca_jvm_java_options | array      | "-XX:+Use AltSigs"                  | Disabled      | This option seems to crash the J2SE.    |
| pca_jvm_java_options | array      | "-XX:CodeCacheExpansionSize=512000" | Enabled       | Code Cache extension size.              |
| pca_jvm_java_options | array      | "-Xbatch"                           | Disabled      | Disabled background compilation.        |

| Argument             | Units type | Default value             | Default state | Description                                                                                     |
|----------------------|------------|---------------------------|---------------|-------------------------------------------------------------------------------------------------|
| pca_jvm_java_options | array      | "-Xcheck:jni"             | Enabled       | Perform additional checks for JNI functions.                                                    |
| pca_jvm_java_options | array      | "-Xfuture"                | Disabled      | Perform strict checks, anticipating future default.                                             |
| pca_jvm_java_options | array      | "-Xincgc"                 | Disabled      | Enable incremental garbage collection.                                                          |
| pca_jvm_java_options | array      | "-Xint"                   | Disabled      | Interpreted mode execution only.                                                                |
| pca_jvm_java_options | array      | "-Xloggc:./myGClog"       | Disabled      | Log GC status to a file with teim stamps.                                                       |
| pca_jvm_java_options | array      | "-Xmixed"                 | Disabled      | Mixed mode execution (default).                                                                 |
| pca_jvm_java_options | array      | "-Xms64m"                 | Disabled      | Set initial Java heap size.                                                                     |
| pca_jvm_java_options | array      | "-Xmx64m"                 | Disabled      | Set maximum Java heap size.                                                                     |
| pca_jvm_java_options | array      | "-XnoClassgc"             | Disabled      | Disable class garbage collection.                                                               |
| pca_jvm_java_options | array      | "-Xprof"                  | Disabled      | Output cpu profiling data.                                                                      |
| pca_jvm_java_options | array      | "-Xrs"                    | Disabled      | Reduce use of OS signals by Java/VM.                                                            |
| pca_jvm_java_options | array      | "-Xshare:auto"            | Disabled      | Configure shared class data (set to auto, off or on).                                           |
| pca_jvm_java_options | array      | "-Xss64m"                 | Disabled      | Set Java thread stack size.                                                                     |
| pca_jvm_java_options | array      | "-enablesystemassertions" | Enabled       | Enable Java/VM System Assertions - applies only to platforms using the Sun HotSpot (TM) JavaVM. |
| pca_jvm_java_options | array      | "-esa"                    | Enabled       | Enable All System Assertions - only applies to platforms using the Sun HotSpot (TM) JavaVM.     |
| pca_jvm_java_options | array      | "-verbose:class"          | Disabled      | Class loading within the JRE/VM.                                                                |
| pca_jvm_java_options | array      | "-verbose:gc"             | Disabled      | Garbage Collection statistics.                                                                  |
| pca_jvm_java_options | array      | "-verbose:jni"            | Disabled      | Java Native Interface (JNI) invokations.                                                        |

Table 1-25: PCA\_JVM\_JAVA\_DBG\_AGENT\_PORT arguments

| Argument                       | Units type | Default value | Default state | Description                                            |
|--------------------------------|------------|---------------|---------------|--------------------------------------------------------|
| pca_jvm_java_dbg_agent_port    | number     | 8000          | Disabled      | Configure the port number and the Java VM Debug Agent. |
| pca_jvm_java_dbg_agent_suspend | switch     | N/A           | Disabled      | Java VM Debug Agent starts suspended when enabled.     |

**Table 1-26: PCA\_JVM\_SYS\_DEVICE\_PATH arguments**

| Argument                | Unit type | Default value     | Default state     | Description                                       |
|-------------------------|-----------|-------------------|-------------------|---------------------------------------------------|
| pca_jvm_sys_device_path | array     | Platform specific | Platform specific | Internal system option for Sun OS. DO NOT CHANGE. |

**Permissions** Only a System Administrator can execute sp\_jreconfig to change the settings of the PCA/JVM.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Stored procedures** sp\_pciconfig

## sp\_ldapadmin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Creates or lists an LDAP URL search string, verifies an LDAP URL search string or login, or specifies the access accounts and tunable LDAPUA-related parameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Syntax      | <p>sp_ldapadmin <i>command</i> [, <i>option1</i> [, <i>option2</i>]]</p> <p>Valid <i>command</i> [, <i>option1</i> [, <i>option2</i>]] options are:</p> <pre> 'set_primary_url', 'url' 'set_secondary_url', 'url' 'set_dn_lookup_url', 'url' 'set_secondary_dn_lookup_url', 'url' 'set_access_acct', 'distinguished_name', 'password' 'set_secondary_access_acct', 'distinguished_name', 'password' 'set_fallback_interval', time_in_minutes 'suspend', {'primary'   'secondary'} 'activate', {'primary'   'secondary'} 'list' 'list_urls' 'list_access_acct' 'check_url', 'url' 'reinit_descriptors' 'check_login', 'name' 'set_timeout', timeout_in_milli_seconds 'set_log_interval', log_interval_in_minutes 'set_num_retries', num_retries 'set_max_ldapua_native_threads', max_ldapua_native_threads 'set_max_ldapua_desc', max_ldapua_desc 'set_abandon_ldapua_when_full', {true false} 'starttls_on_primary', {true false} 'starttls_on_secondary', {true false} 'help' </pre> |
| Parameters  | <p>set_primary_url, <i>'ldapurl'</i><br/>creates the specified search string <i>ldapurl</i>. Exactly one primary search string can be created.</p> <p>The syntax for <i>ldapurl</i> is:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

`ldapurl::=ldap://host:port/node?attributes?base | one | sub?filter`

where:

- *host* – is the host name of the LDAP server.
- *port* – is the port number of the LDAP server.
- *node* – specifies the node in the object hierarchy at which to start the search.
- *attributes* – is a list of attributes to return in the result set. Each LDAP server may support a different list of attributes.
- *base* – qualifies the search criteria, specifying a search of the base node.
- *one* – qualifies the search criteria. *base* specifies a search of the base node; *one* specifies a search of node and one sublevel below node; and *sub* specifies a search of node and all node sublevels.
- *sub* – specifies a search of node and all node sublevels.
- *filter* – specifies the attribute or attributes to be authenticated. The filter can be simple, such as “uid=\*,” or compound, such as “(uid=\*)(ou=group).” The syntax is LDAP server dependent and uses a wildcard (\*) to describe the login name.

`set_secondary_url, { 'ldapurl' | null }`

creates the specified secondary search string *ldapurl* or no secondary search string. Exactly one secondary search string can be created.

`set_dn_lookup_url, distinguished_name_url`

uses the searched distinguished name algorithm to authenticate the login with an LDAP directory server when you set `set_dn_lookup_url` to a non-NULL value.

*distinguished\_name\_url* has a maximum length of 255 characters and is used to search for a distinguished name associated with the login name.

`set_secondary_dn_lookup_url, distinguished_name_url`

creates the specified secondary distinguished name algorithm to authenticate the login with an LDAP directory server when you set `set_secondary_dn_lookup_url` to a non-NULL value.

*distinguished\_name\_url* has a maximum length of 255 characters and is used to search for a distinguished name associated with the login name.



- set\_access\_acct*, *account\_distinguished\_name*, *account\_password*  
specifies the identity and password that Adaptive Server uses to conduct searches and other read-only administrative actions. The identity is in the form of a distinguished name. Use *account\_distinguished\_name* to authenticate this user with the LDAP server. Both *account\_distinguished\_name* and *account\_password* are limited to 255 characters each.
- set\_secondary\_access\_acct*, *account\_distinguished\_name*, *account\_password*  
creates the secondary identity and password that Adaptive Server uses to conduct searches and other read-only administrative actions. The identity is in the form of a distinguished name. Use *account\_distinguished\_name* to authenticate this user with the LDAP server. Both *account\_distinguished\_name* and *account\_password* are limited to 255 characters each.
- set\_failback\_interval*  
sets the interval at which the Adaptive Server housekeeper utility checks for failed LDAP servers.
- suspend*, {'primary' | 'secondary'}  
suspends the use of a primary or secondary URL for authentication.
- activate*, {'primary' | 'secondary'}  
enables using the set of primary or secondary URLs for authentication.
- list*  
displays LDAP search strings.
- list\_urls*  
displays LDAP URL search strings.
- list\_urls*  
displays LDAP URL search strings.
- list\_access\_acct*  
displays the LDAP access account distinguished name set.
- check\_url*, '*ldapurl*'  
verifies an LDAP URL search string. Can also verify the existence of a user account, but it does not authenticate the user.
- check\_login*, *login\_name*  
verifies a user account for the existing LDAP URL search strings. It does not authenticate the user.

'set\_timeout' *timeout\_in\_milli\_seconds*

sets the time in milliseconds that Adaptive Server waits for a response from the LDAP server before abandoning the authentication request.

The default value for `set_timeout` is 10,000 milliseconds (10 seconds.) Valid values are between 1 and 3,600,000 (one hour.)

'set\_log\_interval', *log\_interval*

sets the log interval, specified in minutes, from 0 to 480 minutes. The default value is 3 minutes. 0 implies that all messages are printed.

set\_num\_retries, *num\_retries*

sets the number of retries attempted after transient errors. The valid range for `set_num_retries` is 1 – 60, and the default is 3.

'set\_max\_ldapua\_native\_threads', *max\_ldapua\_native\_threads*

sets the maximum number of native threads that can be running concurrently in an engine processing an LDAP authentication request.

The minimum value of `set_max_ldapua_native_threads` is 1. The maximum value is `max native threads` minus number of dump threads as specified using `sp_configure`. The default value is the same as the maximum value.

`sp_configure` ensures that `max native threads` is sufficient for `set_max_ldapua_native_threads` and the value of the configuration parameter number of dump threads.

set\_max\_ldapua\_desc, *max\_ldapua\_desc*

sets the maximum number of LDAP descriptors per engine. The valid range for `set_max_ldapua_desc` is 1 – 20, and the default is 20.

set\_abandon\_ldapua\_when\_full', {true | false}

allows you to seek alternative means of LDAP user authentication when the native threads per engine capacity is exceeded.

When no more threads are available, the request is abandoned if `set_abandon_ldapua_when_full` is set to true. If `enable ldap user auth` is set to 1, the client is authenticated using Adaptive Server syslogins. If `enable ldap user auth` is set to 2, the client login fails.

If `set_abandon_ldapua_when_full` is set to false, the authentication request is blocked until the LDAP descriptor can accept new authentication requests.

help

displays usage information for `sp_ldapadmin`.

**reinit\_descriptors**

Unbinds all established LDAP server descriptors, and reinitializes the LDAP user-authentication subsystem. The syntax is:

```
sp_ldapadmin 'reinit_descriptors'
```

Whenever a certification authority trusted root file is modified, the System Security Officer must use `reinit_descriptors` to reinitialize LDAP user authentication. For complete documentation, see `sp_ldapadmin` in the *Reference Manual: Procedures*.

**set\_log\_interval, log\_interval**

sets the time for the error message logging interval, in minutes. The valid range for `set_log_interval` is 0 – 480, and the default is 3.

**Examples**

**Example 1** Creates an LDAP URL search string for the LDAP SunONE Directory Server.

```
sp_ldapadmin set_primary_url, 'ldap://voyager:389/
ou=People,dc=MyCompany,dc=com??sub?uid=*'
```

The search string identifies a directory server listening on host name “voyager,” port number 389 (the default LDAP protocol port), the base node to begin the search is within organizational unit (ou) “People,” and the domain is “MyCompany.com.” It returns all attributes that match the filter `uid=*`. Adaptive Server replaces the wildcard with the Adaptive Server login name that is to be authenticated.

**Example 2** Creates an LDAP URL search string defined in OpenLDAP 2.0.25 using the criteria described in Example 1.

```
sp_ldapadmin set_primary_url, 'ldap://voyager:389/
dc=MyCompany,dc=com??sub?cn=*'
```

**Example 3** Sets the secondary LDAP URL search string to null, indicating no failover and no secondary LDAP server.

```
sp_ldapadmin set_secondary_url, null
```

**Example 4** Creates an LDAP URL search string with a compound filter.

```
sp_ldapadmin set_primary_url, 'ldap://voyager:389/
ou=people,dc=siroe,dc=com??sub?(&(uid=*)
(ou=accounting))'
```

**Example 5** Uses the default Microsoft Active Directory schema found on Windows 2000 controllers:

```
1> sp_ldapadmin set_access_acct, 'cn=aseadmin, cn=Users, dc=mycompany,
dc=com', 'aseadmin secret password'
2> go
```

```
1> sp_ldapadmin set_dn_lookup_url,
    'ldap://mydomainhostname:389/cn=Users,dc=mycompany,dc=com?
    distinguishedName?sub?samaccountname=*'
2> go

1> sp_ldapadmin set_primary_url,'ldap://mydomainhostname:389/'
2> go
```

The “aseadmin” username is added to the Active Directory server and granted read access to the trees and objects where users are found. The LDAP attribute specified by distinguishedName is obtained and used to authenticate the user. The filter specifies a search on attribute samaccountname=\*; the \* wildcard is replaced with the name from the Adaptive Server login record.

For example, “samaccountname=jqppublic” returns DN attribute “distinguishedName” with value “cn=John Q. Public, cn=Users,dc=mycompany, dc=com” to Adaptive Server. Adaptive Server uses this string to bind to *ldap://mydomainhostname:389*. If the bind is successful, authentication succeeds.

**Example 6** Sets the maximum number of native threads to 12:

```
sp_ldapadmin 'set_max_ldapua_native_threads', '12'
```

**Example 7** sets the time that Adaptive Server waits for a response from the LDAP server before abandoning the authentication request to 25,000 milliseconds:

```
sp_ldapadmin, 'set_timeout', '25000'
```

**Example 8** Disables the authentications requests until the LDAP descriptor can accept new authentication requests:

```
sp_ldapadmin 'set_abandon_ldapua_when_full', 'false'
```

**Example 9** Displays the current LDAP values:

```
sp_ldapadmin

Primary:
URL:                'ldap://linuxpuneeng1:50917/'
DN Lookup URL:
'ldap://linuxpuneeng1:50917/dc=sybase,dc=com??sub?uid=*'
Access Account:    'cn=Directory Manager'
Active:            'TRUE'
Status:            'READY'
Secondary:
URL:                ''
DN Lookup URL:    ''
```

```

Access Account:      ''
Active:             'FALSE'
Status:             'NOT SET'
Timeout value:      '5000' milliseconds
Log interval:       '1' minutes
Number of retries:  '3'
Maximum LDAPUA native threads per Engine: '400'
Maximum LDAPUA descriptors per Engine: '3'
Abandon LDAP user authentication when full: 'false'

(return status = 0)

```

- Usage**
- The LDAP vendor determines the syntax of the search string. In all cases, the search string specifies the attribute name that uniquely identifies the user in the form “*attribute=wildcard*” as in “cn=\*.”
  - The first attribute in a compound filter must define the Relative Distinguished Name (RDN). For example, “...sub?(uid=\*)(ou=group).” Otherwise, the authentication fails.
  - When a search string is added, Adaptive Server verifies that it uses valid LDAP URL syntax and that it references an existing node. To ensure that the valid string returns expected values, carefully choose and verify the search string when configuring Adaptive Server.
  - The secondary URL search string enables failover to another LDAP server. Adaptive Server uses the primary URL search string unless the LDAP Server is not active or the search string is invalid. In this event, Adaptive Server uses the secondary URL search string for authentication.
  - The login sequence of searched DN algorithm requires Adaptive Server to bind to the LDAP server using the access account before it can perform searches. Adaptive Server obtains an LDAP descriptor (handle) as a result of the bind. This descriptor is used for searching the DN of the login on the LDAP server.
- Permissions** Only the System Security Officer can execute sp\_ldapadmin.
- Auditing** Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

## sp\_listener

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Dynamically starts and stops Adaptive Server listeners on any given port on a per-engine basis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <pre>sp_listener "command", "server_name   network", engine   remaining</pre> <p>Or:</p> <pre>sp_listener "command", "[protocol:]machine:port", engine</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <p><i>command</i><br/>can be any of the following:</p> <ul style="list-style-type: none"> <li>• <b>start</b> – starts a listener on the specified ports on each of the specified engines</li> <li>• <b>stop</b> – terminates the specified listeners.</li> <li>• <b>suspend</b> – prevent the listener from accepting any more connections.</li> <li>• <b>resume</b> – instructs suspended listeners to resume listening again.</li> <li>• <b>status</b> – report on the state of the listeners specified by the parameters. The state is one of: active, stopped, or suspended.</li> </ul> <p><i>server_name   network</i><br/>is the name of the Adaptive Server, as specified in the interfaces file, or the name of the network.</p> <p>Specifying a common name with <code>sp_listener</code>:</p> <p><code>sp_listener</code> includes parameter <code>CN=common_name</code>, which specifies a common name for the SSL certificate. The syntax is:</p> <pre>sp_listener 'command', '[protocol: ]machine_name:port_number:"CN=common_name",engine_number</pre> <p>Use <code>CN=common_name</code> only if you specify <code>ssltcp</code> as the protocol. The <code>common_name</code> you specify here is validated against the <code>common_name</code> in the SSL certificate. If you do not include <code>CN=common_name</code>, Adaptive Server uses <code>server_name</code> to validate against the common name in the SSL certificate. If you include a fully-qualified domain name in the certificate, it must match <code>CN=common_name</code>.</p> |

The attribute name “CN” is case insensitive (it can be “CN”, “cn” or “Cn”), but the attribute value for the common name is case sensitive. For example, to specify the common name ase1.big server 1.com:

```
sp_listener 'start', 'ssltcp:blade1:17251:
"CN=ase1.big server 1.com"', '0'
```

*engine*

specifies the number of the engine affected by this command. *engine* can be a single-engine number in quotes (“2”), a list (“3,5,6”), a range (“2 – 5”), or mix of all (“2,3 – 5,7”).

---

**Note** Windows NT ignores the *engine* parameter.

---

*remaining*

specifies that the command is to take effect on all engines on which it can be meaningfully applied (that is, where the listener is in a state in which the command is can take effect).

*protocol*

the type of protocol. This can be one of: tcp, tli, ssltcp, ssltli, winsock, sslnlwsock, sslwsock.

*machine:port*

the machine name and port number (as specified in the interfaces file) to which the listener connects.

Examples

**Example 1** Create tcp listeners on engines 0-6 for port number 4226:

```
sp_listener "start", "goldie:4226", "0-6"
```

**Example 2** Create listeners for all master entries in the interfaces file for server orion:

```
sp_listener "start", "orion", "remaining"
```

**Example 3** Start listeners on engines 1, 3 and 5 for each master entry in the interfaces file corresponding to server orion:

```
sp_listener "start", "orion", "1,3,5"
```

**Example 4** Start TCP listeners on port 4226 on machine goldie for all engines not already listening to this port:

```
sp_listener "start", "goldie:4226", "remaining"
```

**Example 5** Stop the listener on port number 4226 on engine number 2:

```
sp_listener "stop", "tcp:goldie:4226", "2"
```



**Example 6** Stop all listeners on port number 4226 for all engines. Because this command includes the remaining parameter, it will not fail if some engines are not listening to the port:

```
sp_listener "stop", "tcp:goldie:4226", "remaining"
```

**Example 7** Suspend NT Winsock listener on port 4226:

```
sp_listener "suspend", "winsock:clouds:4226"
```

**Example 8** Resume NT Winsock listener on port 4227:

```
sp_listener "suspend", "winsock:clouds:4226"
```

**Example 9** Resume all active listeners on port number 4226:

```
sp_listener "resume", "tcp:goldie:4226", "remaining"
```

## Usage

- `sp_listener` uses either of two syntaxes, described in the syntax section, above. The first syntax affects all Adaptive Server master ports listed in the interfaces file. The second allows you to manage listeners not listed in the interfaces file.
- The semantics for `sp_listener` is atomic: if a command cannot be completed successfully, it is aborted.
- When the host component of a `sp_listener` command is an IPv6 address, it should be enclosed in brackets. For example,

```
tcp: [2001:ec8:4008:1::123] :80
```

- You can issue the status parameter by itself. The status parameter displays the state of all the listeners in the interfaces file.
- A listener can be in one of the following states: stopped, suspended, or active. `sp_listener` allows you to move listeners between these states. A request to move to a non-permissible state results in failure (For example, requesting to stop a non-existent listener). Use `sp_listener "status"` to determine the state of a listener.
- You can specify engines in the engine list as: an engine number (a single integer in quotes), a range of engine numbers ("3-6"), a comma-separated list of engines ("2,5,9"), or combinations of the previous two ("2,5,3-6,9").

- The remaining parameter specifies that, for the command you are running (start, stop, resume, and so on), the command runs successfully for all listeners that are in a state that allow the change (for example, moving states from start to stop). For example, if you attempt to start listeners on engines one through six, but engines one, four, and five are unavailable, sp\_listener... "remaining" starts listeners on engines two, three, and six, disregarding the offline engines. You cannot specify an engine number if you include the remaining parameter.
- The maximum number of listeners is 32. If you create an Adaptive Server with two master ports in the interfaces file, you can start at most 30 more listeners on other ports. Apart from the first listener, each supplementary listener consumes resources similar to a user connection, so in a setup where 25 user connections are configured, starting three listeners at startup (corresponding to three master entries) leaves room for 30 user connections.

Permissions                      The user must have sa\_role.

Auditing                              Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                          |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>audited</b>           | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38                       | exec_procedure      | Execution of a procedure | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also                              For limitations related to IPV6 in sp\_listener, see the section “Specifying a common name” in the chapter “Confidentiality of Data,” in the *System Administration Guide*.

## sp\_listsuspect\_db

|             |                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Lists all databases that currently have offline pages because of corruption detected on recovery.                                                                                                                                         |
| Syntax      | sp_listsuspect_db                                                                                                                                                                                                                         |
| Parameters  | None.                                                                                                                                                                                                                                     |
| Examples    | Lists the databases that have suspect pages:<br><br><code>sp_listsuspect_db</code>                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"> <li>• sp_listsuspect_db lists the database name, number of suspect pages, and number of objects containing suspect pages.</li> <li>• Use sp_listsuspect_page to identify the suspect pages.</li> </ul> |
| Permissions | Any user can execute sp_listsuspect_db.                                                                                                                                                                                                   |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                       |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

|          |                                                                                                  |
|----------|--------------------------------------------------------------------------------------------------|
| See also | <b>System procedures</b> sp_listsuspect_page, sp_setsuspect_granularity, sp_setsuspect_threshold |
|----------|--------------------------------------------------------------------------------------------------|

## sp\_listsuspect\_object

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Lists all indexes in a database that are currently offline because of corruption detected on recovery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Syntax      | sp_listsuspect_object [dbname]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Parameters  | <i>dbname</i><br>is the name of the database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Examples    | <b>Example 1</b> Lists the suspect indexes in the current database:<br><pre>sp_listsuspect_object</pre><br><b>Example 2</b> Lists the suspect indexes in the pubs2 database:<br><pre>sp_listsuspect_object pubs2</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Usage       | <ul style="list-style-type: none"><li>• If an index on a data-only-locked table has suspect pages, the entire index is taken offline during recovery. Offline indexes are not considered by the query optimizer.</li><li>• Use the system procedure sp_forceonline_object to bring an offline index online for repair.</li><li>• Indexes on allpages-locked tables are not taken completely offline during recovery; only individual pages of these indexes are taken offline. These pages can be brought online with sp_forceonline_object.</li><li>• sp_listsuspect_object lists the database name, object ID, object name, index ID, and access status for every suspect index in the specified database or, if <i>dbname</i> is omitted, in the current user database.</li><li>• A value of SA_ONLY in the access column means that the index has been forced online for System Administrator use only. A value of BLOCK_ALL means that the index is offline for everyone.</li></ul> |
| Permissions | Any user can execute sp_listsuspect_object.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documents** See the *System Administration Guide* for more information on recovery fault isolation.

**System procedures** sp\_forceonline\_object

## sp\_listsuspect\_page

**Description** Lists all pages in a database that are currently offline because of corruption detected on recovery.

**Syntax** sp\_listsuspect\_page [dbname]

**Parameters** *dbname*  
is the name of the database.

**Examples** **Example 1** Lists the suspect pages in the current database:

```
sp_listsuspect_page
```

**Example 2** Lists the suspect pages in the pubs2 database:

```
sp_listsuspect_page pubs2
```

**Usage**

- sp\_listsuspect\_page lists the database name, page ID, object, index ID, and access status for every suspect page in the specified database or, if *dbname* is omitted, in the current user database.
- A value of SA\_ONLY in the “access” column indicates that the page has been forced online for System Administrator use only. A value of BLOCK\_ALL indicates that the page is offline for everyone.

**Permissions** Any user can execute sp\_listsuspect\_page.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                          |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>audited</b>           | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38                       | exec_procedure      | Execution of a procedure | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **System procedures** sp\_listsuspect\_db, sp\_setsuspect\_granularity, sp\_setsuspect\_threshold

## sp\_lmconfig

**Description** Configures license management-related information on Adaptive Server.

**Syntax**

```
sp_lmconfig
    [ 'edition' [ , edition_type ] ]
    [ , 'license type' [ , license_type_name ] ]
    [ , 'smtp host' [ , smtp_host_name ] ]
    [ , 'smtp port' [ , smtp_port_number ] ]
    [ , 'email sender' [ , sender_email_address ] ]
    [ , 'email recipients' [ , email_recipients ] ]
    [ , 'email severity' [ , email_severity ] ]
```

**Parameters** `sp_lmconfig` without parameters displays the following license status information:

- License Name
- Version
- Quantity Status
- Expiration Date

`edition` is a static configuration parameter to specify the license edition.

`edition_type` specifies the edition type, and has the following possible values:

- null – is the default value. When a null value is specified, no product edition is configured, and Adaptive Server starts with a license for any edition.
- EE – indicates the Enterprise edition.
- SE – indicates the Small Business edition.
- DE – indicates the Developer’s edition.
- XE – indicates the Express edition.

`license type` is a static configuration parameter that specifies the license type for the installation of Adaptive Server, and is valid only when you specify a non-null edition.

*license\_type\_name*

specifies the license type of a particular installation of Adaptive Server. You need not specify license type if you are using the Developer's (DE) or Express (XE) edition. The valid, most typical values are:

- SRST – server license with network seats
- SVST – standby server license with network seats
- SRCU – server license with concurrent user seats
- SVCU – standby server license with concurrent user seats
- SRIA – server license with Internet access license
- SVIA – standby server license with Internet access license
- CP – CPU license
- SF – standby CPU license
- null – default

---

**Note** In addition to this list, sp\_lmconfig also accepts two-letter abbreviations for specialized and legacy license types. If the license type is not accepted, set the type to null and use the network license server options file to control the license used by this Adaptive Server.

---

smtp host, *smtp host name*

designates the SMTP host used to send E-mails for license event notifications.

smtp port, *smtp port number*

designates the SMTP port used to send Emails for license event notifications.

email sender, *sender email address*

specifies the E-mail address used as the senders address on license event E-mail notifications.

email recipients, *email recipients*

is a comma separated list of E-mail recipients who receive license event E-mail notifications.

email severity, *email severity*

is the minimum severity of an error that causes an E-mail notification to be sent. The default is error, and the other possibilities are warning and informational.



**Examples**                      Displays basic license configuration information for a system:

```
1> sp_lmconfig
2> go
```

| Parameter Name   | Config Value |
|------------------|--------------|
| edition          | null         |
| license type     | null         |
| smtp host        | smtp         |
| email recipients | cshi         |
| email severity   | ERROR        |
| smtp port        | 25           |
| email sender     | cshi         |

| License Name   | Version | Quantity | Status   | Expiry Date        |
|----------------|---------|----------|----------|--------------------|
| ASE_HA         | null    | 0        | not used | null               |
| ASE_DTM        | null    | 0        | not used | null               |
| ASE_JAVA       | null    | 0        | not used | null               |
| ASE_ASM        | null    | 0        | not used | null               |
| ASE_EJB        | null    | 0        | not used | null               |
| ASE_EFTS       | null    | 0        | not used | null               |
| ASE_DIRS       | null    | 0        | not used | null               |
| ASE_XRAY       | null    | 0        | not used | null               |
| ASE_MESSAGING  | null    | 0        | not used | null               |
| ASE_ENCRYPTION | null    | 0        | not used | null               |
| ASE_CORE       |         | 1        | graced   | Sep 11 2005 2:40AM |
| ASE_PARTITIONS |         | 1        | graced   | Sep 11 2005 2:40AM |

| Property Name | Property Value |
|---------------|----------------|
| PE            | null           |
| LT            | null           |
| ME            | null           |
| MC            | null           |
| MS            | null           |
| MM            | null           |
| CP            | null           |
| AS            | null           |

#### Usage

- If you do not specify an edition or use “null,” Adaptive Server looks for and uses whatever license edition it finds when it starts.
- The configuration options set by `sp_lmconfig` are stored in the *sylapi* properties file.

Permissions                    You must be a System Administrator to execute sp\_lmconfig.

Auditing                        Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also                        **Document**   The Adaptive Server installation guide for your platform.

## sp\_lock

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports the object names and IDs of processes that currently hold locks.                                                                                                                                                                                                                                                                                                                                                                                 |
| Syntax      | <code>sp_lock [spid1[, spid2]]   [@verbose = int]</code>                                                                                                                                                                                                                                                                                                                                                                                                 |
| Parameters  | <p><i>spid1</i><br/>is the Adaptive Server process ID number from the master.dbo.sysprocesses table. Run <code>sp_who</code> to get the <i>spid</i> of the locking process.</p> <p><i>spid2</i><br/>is another Adaptive Server process ID number to check for locks.</p> <p><code>@verbose = int</code><br/>displays a concatenated name of the table names instead of a <i>spid</i>, such as <code>test.testa</code>, following by the <i>spid</i>.</p> |

---

**Note** *int* can be any number, as `sp_lock` only check to see whether the value of `@verbose` is null or not.

---

### Examples

**Example 1** Shows the lock status of serial processes with spids 7, 18, and 23 and two families of processes. The family with fid 1 has the coordinating processes with `spid 1` and worker processes with spids 8, 9, and 10. The family with fid 11 has the coordinating processes with `spid 11` and worker processes with spids 12, 13, and 14:

```
sp_lock
```

The class column will display the cursor name for locks associated with a cursor for the current user and the cursor id for other users.

```

fid spid locktype          table_id page  dbname  class          context
-----
0   7   Sh_intent              480004741  0  master  Non Cursor Lock NULL
0   18  Ex_intent              16003088   0  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088  587  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088  590  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088 1114  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088 1140  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088 1283  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088 1362  pubtune Non Cursor Lock NULL
0   18  Ex_page                16003088 1398  pubtune Non Cursor Lock NULL
0   18  Ex_page-blk           16003088   634  pubtune Non Cursor Lock NULL
0   18  Update_page           16003088 1114  pubtune Non Cursor Lock NULL
0   18  Update_page-blk      16003088   634  pubtune Non Cursor Lock NULL
0   23  Sh_intent              16003088   0  pubtune Non Cursor Lock NULL
0   23  Sh_intent              176003658   0  pubtune Non Cursor Lock NULL

```

```

0 23 Ex_intent      208003772      0 pubtune Non Cursor Lock NULL
1  1 Sh_intent      176003658      0 tpcd    Non Cursor Lock Sync-pt
duration request
1  1 Sh_intent-blk 208003772      0 tpcd    Non Cursor Lock Sync-pt
duration request
1  8 Sh_page        176003658 41571 tpcd    Non Cursor Lock NULL
1  9 Sh_page        176003658 41571 tpcd    Non Cursor Lock NULL
1 10 Sh_page        176003658 41571 tpcd    Non Cursor Lock NULL
11 11 Sh_intent      176003658      0 tpcd    Non Cursor Lock Sync-pt
duration request
11 12 Sh_page        176003658 41571 tpcd    Non Cursor Lock NULL
11 13 Sh_page        176003658 41571 tpcd    Non Cursor Lock NULL
11 14 Sh_page        176003658 41571 tpcd    Non Cursor Lock NULL

```

**Example 2** Displays information about the locks currently held by spid 7.

```
sp_lock 7
```

The class column will display the cursor name for locks associated with a cursor for the current user and the cursor id for other users.

```

fid spid locktype  table_id  page dbname  class          context
-----
0   7   Sh_intent  480004741    0 master  Non Cursor Lock  NULL

```

**Example 3** First, queries the pubs2 database about the ID of its running processes that currently hold locks (1056003762), then queries the pubs2 database using the @verbose option, which returns the object name (master..spt\_values) in addition to the process ID:

```

1> use pubs2
2> go
1> sp_lock
2> go

```

The class column will display the cursor name for locks associated with a cursor for the current user and the cursor id for other users.

```

fid spid loid locktype  table_id  page row dbname class context
-----
0    15   30 Sh_intent 1056003762    0  0 master Non Cursor Lock

```

```

(1 row affected)
(return status = 0)

```

```

1> sp_lock @verbose=0
2> go

```

The class column will display the cursor name for locks associated with a cursor for the current user and the cursor id for other users.

```

fid  spid  loid  locktype  page  row  objectName          id          class  context
-----
0    15    30  Sh_intent  0     0   master..spt_values  1056003762 Non  Cursor
   Lock

```

```

(1 row affected)
(return status = 0)

```

#### Usage

- `sp_lock` with no parameters reports information on all processes that currently hold locks.
- The only user control over locking is through the use of the `holdlock` keyword in the `select` statement.
- Use the `object_name` system function to derive a table's name from its ID number.
- `sp_lock` in versions of the Cluster Edition earlier than 15.0.3 displayed information about only the locks associated with the instance on which you issued the stored procedure. `sp_lock` on Cluster Edition version 15.0.3 and later displays information about all locks in the cluster.
- `sp_lock` output is ordered by `fid` and then `spid`.
- The `loid` column identifies unique lock owner ID of the blocking transaction. Even `loid` values indicate that a local transaction owns the lock. Odd values indicate that an external transaction owns the lock.
- The `locktype` column indicates whether the lock is a shared lock (“Sh” prefix), an exclusive lock (“Ex” prefix) or an update lock, and whether the lock is held on a table (“table” or “intent”) or on a page (“page”).

A “blk” suffix in the “locktype” column indicates that this process is blocking another process that needs to acquire a lock. As soon as this process completes, the other process(es) moves forward. A “demand” suffix in the “locktype” column indicates that the process is attempting to acquire an exclusive lock. See the *Performance and Tuning Guide* for more information about lock types.

- The `class` column indicates whether a lock is associated with a cursor. It displays one of the following:
  - “Non Cursor Lock” indicates that the lock is not associated with a cursor.
  - “Cursor Id *number*” indicates that the lock is associated with the cursor ID number for that Adaptive Server process ID.

- A cursor name indicates that the lock is associated with the cursor *cursor\_name* that is owned by the current user executing *sp\_lock*.
- The *fid* column identifies the family (including the coordinating process and its worker processes) to which a lock belongs. Values for *fid* are:
  - A zero value indicates that the task represented by the *spid* is executed serially. It is not participating in parallel execution.
  - A nonzero value indicates that the task (*spid*) holding the lock is a member of a family of processes (identified by *fid*) executing a statement in parallel. If the value is equal to the *spid*, it indicates that the task is the coordinating process in a family executing a query in parallel.
- The *context* column identifies the context of the lock. Worker processes in the same family have the same context value. Legal values for “context” are as follows:

- “NULL” means that the task holding this lock is either a query executing serially, or is a query executing in parallel in transaction isolation level 1.
- “Sync-pt duration request” means that the task holding the lock will hold the lock until the query is complete.

A lock’s context may be “Sync-pt duration request” if the lock is a table lock held as part of a parallel query, if the lock is held by a worker process at transaction isolation level 3, or if the lock is held by a worker process in a parallel query and must be held for the duration of the transaction.

- “Ind pg” indicates locks on index pages (allpages-locked tables only)
- “Inf key” indicates an infinity key lock (for certain range queries at transaction isolation level 3 on data-only-locked tables)
- “Range” indicates a range lock (for range queries at transaction isolation level 3 on data-only-locked tables)

These new values may appear in combination with “Fam dur” (which replaces “Sync pt duration”) and with each other, as applicable.

- The *row* column displays the row number for row-level locks.
- *sp\_lock* output also displays the following lock types:
  - “Sh\_row” indicates shared row locks
  - “Update\_row” indicates update row locks

- “Ex\_row” indicates exclusive row locks

Permissions Any user can execute sp\_lock.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** kill, select

**System procedures** sp\_familylock, sp\_who

## sp\_locklogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Locks an Adaptive Server account so that the user cannot log in, or displays a list of all locked accounts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | <pre>sp_locklogin login   NULL   wildcard_string , "lock"   "unlock",            [except_login_name   except_role_name]            [, number_of_inactive_days]</pre> <p>Or:</p> <pre>sp_locklogin</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Parameters  | <p><code>sp_locklogin</code><br/>without any parameters, displays all locked logins.</p> <p><i>loginame</i><br/>is the name of the account to be locked or unlocked.</p> <p><code>all</code><br/>locks all logins except the sa_role.</p> <p><i>wildcard_string</i><br/>is any string with wildcards that identifies a set of logins.</p> <p><code>lock</code>   <code>unlock</code><br/>specifies whether to lock or unlock the account.</p> <p><i>except_login_name</i><br/>is the name of login that is exempted from being locked.</p> <p><i>except_role_name</i><br/>is the name of role that is exempted from being locked. For example, all logins in a role that are to be exempted.</p> <p><i>number_of_inactive_days</i><br/>is the number of days, from 1 to 32,767, that an account has been inactive.</p> |
| Examples    | <p><b>Example 1</b> Locks the login account for the user “charles”:</p> <pre>sp_locklogin charles, "lock"</pre> <p><b>Example 2</b> Locks all logins except those with the sa_role:</p> <pre>sp_locklogin "all", "lock", sa_role</pre> <p><b>Example 3</b> Displays a list of all locked accounts:</p> <pre>sp_locklogin</pre> <p><b>Example 4</b> Locks all login accounts that have not authenticated within the past 60 days:</p>                                                                                                                                                                                                                                                                                                                                                                                   |



```
sp_locklogin 'all', 'lock', NULL, 60
```

---

**Note** This command has no effect if the `sp_passwordpolicy` option “enable last login updates” is set to “0”.

---

**Usage**

Without any parameters, `sp_locklogin` displays all locked logins.

The `syslogins` columns `lockdate`, `locksuid` and `lockreason` are updated at time of locking/unlocking a login.

Conditions for using `sp_locklogin` are:

- No wild cards are allowed for exceptions.
- Existing functionality is undisturbed.
- The exception specified is first matched against logins. If such a login does not exist, then the exception is checked against roles.
- A value of `NULL` for a login means “all” logins.
- You see an error if the login name or exception you specify does not exist.
- Nothing happens if the specified “effective set” of logins to be locked is empty.
- If the exception is `NULL`, the set of logins specified (through the login parameter) is locked.
- Sybase high-availability Failover only – in versions of Adaptive Server earlier than 15.0, `sp_locklogin` checked to see if the login to be locked or unlocked existed on a remote high-availability server by verifying that the the `suid` (server user ID) of that login existed on the server.

In Adaptive Server version 15.0, `sp_locklogin` checks both the `suid` as well as the login name.

- You see an error if you specify any word other than `lock` or `unlock`.

**Permissions**

Only a System Security Officer can execute `sp_locklogin`.

**Auditing**

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addlogin, sp\_droplogin, sp\_modifylogin, sp\_password

## sp\_logdevice

**Description** Moves the transaction log of a database with log and data on the same device to a separate database device.

**Syntax** `sp_logdevice dbname, devname`

**Parameters** *dbname*  
is the name of the database whose syslogs table, which contains the transaction log, to put on a specific logical device.

*devname*  
is the logical name of the device on which to put the syslogs table. This device must be a database device associated with the database (named in create database or alter database). Run sp\_helpdb for a report on the database's devices.

**Examples** **Example 1** Creates the database products and puts the table products.syslogs on the database device logs:

```
create database products on default = "10M", logs = "2M"
go
sp_logdevice products, logs
go
```

**Example 2** For the database test with log and data on the same device, places the log for test on the log device logdev:

```
alter database test log on logdev
go
sp_logdevice test, logdev
go
```

**Usage**

- You can only execute sp\_logdevice in single-user mode.
- The sp\_logdevice procedure affects only future allocations of space for syslogs. This creates a window of vulnerability during which the first pages of your log remain on the same device as your data. Therefore, the preferred method of placing a transaction log on a separate device is the use of the log on option to create database, which immediately places the entire transaction log on a separate device.
- Place transaction logs on separate database devices, for both recovery and performance reasons.

A very small, noncritical database could keep its log together with the rest of the database. Such databases use dump database to back up the database and log and dump transaction with truncate\_only to truncate the log.

- dbcc checkalloc and sp\_helplog show some pages for syslogs still allocated on the database device until after the next dump transaction. After that, the transaction log is completely transferred to the device named when you executed sp\_logdevice.
- The size of the device required for the transaction log varies, depending on the amount of update activity and the frequency of transaction log dumps. As a rule, allocate to the log device 10 percent to 25 percent of the space you allocate to the database itself.
- Use sp\_logdevice only for a database with log and data on the same device. Do not use sp\_logdevice for a database with log and data on separate devices.
- To increase the amount of storage allocated to the transaction log use alter database. If you used the log on option to create database to place a transaction log on a separate device, use the following to increase the size of the log segment. If you did not use log on, execute sp\_logdevice:

```
sp_extendsegment seaname, devname
```

The device or segment on which you put syslogs is used *only* for the syslogs table. To increase the amount of storage space allocated for the rest of the database, specify any device other than the log device when you issue the alter database command.

- Use the disk init command to format a new database device for databases or transaction logs.

Permissions Only the Database Owner or a System Administrator can execute sp\_logdevice.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Documents** See the *System Administration Guide* for more information.

**Commands** alter database, create database, dbcc, disk init, dump database, dump transaction, select

**System procedures** sp\_extendsegment, sp\_helpdevice, sp\_helplog

## sp\_loginconfig

|             |                                                                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Displays the value of one or all integrated security parameters.                                                                                                                                                                                                                        |
| Syntax      | sp_loginconfig ["parameter_name"]                                                                                                                                                                                                                                                                              |
| Parameters  | <i>parameter_name</i><br>is the name of the integrated security parameter you want to examine. Values are: <ul style="list-style-type: none"><li>• login mode</li><li>• default account</li><li>• default domain</li><li>• set host</li><li>• key _</li><li>• key \$</li><li>• key @</li><li>• key #</li></ul> |

**Examples** **Example 1** Displays the values of all integrated security parameters:

```
sp_loginconfig
name                config_item
-----
login mode          standard
default account     NULL
default domain      NULL
set host            false
key _               domain separator
key $               space
key @               space
key #               -
```

**Example 2** Displays the value of the login mode security parameter:

```
sp_loginconfig "login mode"
name                config_item
-----
login mode          standard
```

- Usage
- The values of integrated security parameters are stored in the Windows NT Registry. See the chapter on login security in *Configuration Guide for Windows NT* for instructions on changing the parameters.
  - `sp_loginconfig` displays the *config\_item* values that were in effect when you started Adaptive Server. If you changed the Registry values after starting Adaptive Server, those values are not reflected in the `sp_loginconfig` output.
- Permissions      Only a System Administrator can execute `sp_loginconfig`.
- Auditing          Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also            **System procedures**   `sp_revokelogin`

## sp\_logininfo

**Description** **Windows NT only** Displays all roles granted to Windows NT users and groups with sp\_grantlogin.

**Syntax** sp\_logininfo ["login\_name" | "group\_name"]

**Parameters**

*login\_name*  
is the network login name of the Windows NT user.

*group\_name*  
is the Windows NT group name.

**Examples** **Example 1** Displays the permissions granted to the Windows NT user "regularjoe":

```
sp_logininfo regularjoe

account name      mapped login name  type           privilege
-----
HAZE\regularjoe  HAZE_regularjoe   user           'oper_role'
```

**Example 2** Displays all permissions that were granted to Windows NT users and groups with sp\_grantlogin:

```
sp_logininfo

account name      mapped login name  type           privilege
-----
BUILTIN\Administrators  BUILTIN\Administrators  group
      'sa_role sso_role oper_role sybase_ts_role navigator_role
      replication_role'
HAZE\regularjoe    HAZE_regularjoe    user           'oper_role'
PCSRE\randy        PCSRE_alexander    user           'default'
```

**Usage**

- sp\_logininfo displays all roles granted to Windows NT users and groups with sp\_grantlogin.
- You can omit the domain name and domain separator (\) when specifying the Windows NT user name or group name.

**Permissions** Only a System Administrator can execute sp\_logininfo.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:



| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** grant, setuser

**System procedures** sp\_displaylogin, sp\_grantlogin, sp\_revokelogin, sp\_role, sp\_who

## sp\_logiosize

**Description** Changes the log I/O size used by Adaptive Server to a different memory pool when doing I/O for the transaction log of the current database.

**Syntax** sp\_logiosize ["default" | "size" | "all"]

**Parameters**

**default**  
sets the log I/O size for the current database to Adaptive Server's default value (two logical pages), if a memory pool that is two logical pages is available in the cache. Otherwise, Adaptive Server sets the log I/O size to one logical page. Since default is a keyword, the quotes are required when specifying this parameter.

**size**  
is the size to set the log I/O for the current database. Values are multiples of the logical page size, up to four times the amount. You must enclose the value in quotes.

**all**  
displays the log I/O size configured for all databases grouped by the cache name.

**Examples** **Example 1** Displays the log I/O size configured for the current database:

```
sp_logiosize
```

The transaction log for database 'master' will use I/O size of 2 Kbytes.

**Example 2** Changes the log I/O size of the current database to use the 8K memory pool. If the database's transaction log is bound to a cache that does not have an 8K memory pool, Adaptive Server returns an error message indicating that such a pool does not exist, and the current log I/O size does not change:

```
sp_logiosize "8"
```

**Example 3** Changes the log I/O size of the current database to Adaptive Server's default value (one logical page size). If a memory pool the size of the logical page size does not exist in the cache used by the transaction log, Adaptive Server uses the 2K memory pool:

```
sp_logiosize "default"
```

**Example 4** Displays the log I/O size configured for all databases:

```
sp_logiosize "all"
```

```
Cache name: default data cache
Data base           Log I/O Size
-----
master              2 Kb
```

|                |      |
|----------------|------|
| tempdb         | 2 Kb |
| model          | 2 Kb |
| sybsystemprocs | 2 Kb |
| pubs3          | 2 Kb |
| pubtune        | 2 Kb |
| dbccdb         | 2 Kb |
| sybsyntax      | 2 Kb |

## Usage

- `sp_logiosize` displays or changes the log I/O size for the current database. Any user can execute `sp_logiosize` to display the configured log I/O size. Only a System Administrator can change the log I/O size.
- If you specify `sp_logiosize` with no parameters, Adaptive Server displays the log I/O size of the current database.
- When you change the log I/O size, it takes effect immediately. Adaptive Server records the new I/O size for the database in the `sysattributes` table.
- Any value you specify for `sp_logiosize` must correspond to an existing memory pool configured for the cache used by the database's transaction log. Specify these pools using the `sp_poolconfig` system procedure.

Adaptive Server defines the default log I/O size of a database as two logical pages, if a memory pool the size of two logical pages is available in the cache. Otherwise, Adaptive Server sets the log I/O size to one logical page (a memory pool of one logical page is always present in any cache). For most work loads, a log I/O size of two logical pages performs much better than one of one logical page, so each cache used by a transaction log should have a memory pool the size of a logical page. See the *System Administration Guide* and the *Performance and Tuning Guide* for more information about configuring caches and memory pools.

- If the transaction logs for one or more databases are bound to a cache of type `logonly`, any memory pools in that cache that have I/O sizes larger than the log I/O size defined for those databases will *not* be used.

For example, on a 2K server, assume that only two databases have their transaction logs bound to a "log only" cache containing 2K, 4K, and 8K memory pools. By default, `sp_logiosize` sets the log I/O size for these parameters at 4K, and the 8K pool is not used. Therefore, to avoid wasting cache space, be cautious when configuring the log I/O size.

- During recovery, only the logical page size memory pool of the default cache is active, regardless of the log I/O size configured for a database. Transactions logs are read into this pool of the default cache, and all transactions that must be rolled back, or rolled forward, read data pages into the default data cache.

**Permissions** Only a System Administrator can execute sp\_logiosize to change the log I/O size for the current database. Any user can execute sp\_logiosize to display the log I/O size values.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **System procedures** sp\_cacheconfig, sp\_poolconfig

## sp\_logintrigger

**Description** Sets and displays the global login trigger. This global login trigger has the same characteristics as a personal login script. It is executed before any personal login script for every user that tries to log in, including system administrators and security officers.

**Syntax** `sp_logintrigger 'global login trigger name'`

**Parameters** *global login trigger name*  
is the name of the global login trigger.

If no parameter is included, `sp_logintrigger` displays the current login trigger status and name if it exists, and no rows if there is no global login trigger defined.

**Examples** **Example 1** Sets a global login trigger using `sp_logintrigger`:

```
sp_logintrigger 'master.dbo.myproc'
```

**Example 2** Returns an updated global login trigger:

```
1> sp_logintrigger
2> go
Global login trigger          Status
-----
sybssystemprocs.dbo.myproc    Enabled

(1 row affected)
(return status = 0)
```

**Example 3** When a global login trigger does not exist:

```
1> sp_logintrigger
2> go
Global login trigger Status
-----
(0 rows affected)
```

**Example 4** Deletes a global login trigger that was specified earlier with `sp_logintrigger`, enter:

```
sp_logintrigger 'drop'
```

**Usage**

- Global variable `@@logintrigger` to find out if a global login trigger is defined and enabled.

- There is a difference between this global login and the private login script. This global login trigger is stored by name in sysattributes, while the private login script is stored only by object ID.

Permissions

Any user can execute `sp_logintrigger` to display the current global login trigger. To set a new login trigger, `sso_role` is required.

## sp\_maplogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Maps external users to Adaptive Server logins.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>sp_maplogin (authentication_mech   null), (client_username   null), (action   login_name   null)</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Parameters  | <p><i>authentication_mech</i><br/>is one of the valid values specified for authenticate with option in <code>sp_modifylogin</code>.</p> <p><i>client_username</i><br/>is an external user name. This user name can be an operating system name, a user name for an LDAP server, or anything else that the PAM library can understand. A null value indicates that any login name is valid.</p> <p><i>action</i><br/>indicates create login or drop. When create login is used, the login is created as soon as the login is authenticated. drop is used to remove logins.</p> <p><i>login_name</i><br/>is an Adaptive Server login that already exists in syslogins</p> |
| Examples    | <p><b>Example 1</b> Maps external user “jsmith” to Adaptive Server user “guest”. Once authenticated, “jsmith” gets the privileges of “guest”. The audit login record shows both the <i>client_username</i> and the Adaptive Server user name:</p> <pre>sp_maplogin NULL, "jsmith", "guest"</pre> <p><b>Example 2</b> Tells Adaptive Server to create a new login for all external users authenticated with PAM, in case a login does not already exist:</p> <pre>sp_maplogin PAM, NULL, "create login"</pre>                                                                                                                                                            |
| Usage       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Permissions | Only a System Administrator can execute <code>sp_maplogin</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## sp\_metrics

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Backs up, drops, and flushes QP metrics—always captured in the default running group, which is group 1 in each respective database—and their statistics on queries.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <pre>sp_metrics ['backup' backup_group_ID   'drop', 'gid' [, 'id']   'flush'   'help', 'command']</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Parameters  | <p><b>backup</b><br/>moves saved QP metrics from the default running group to a backup group, backs up the QP metrics from the old server into a backup group, and moves saved QP metrics from the default running group to a backup group.</p> <p><i>backup_group_ID</i><br/>is the ID of the group the QP metrics from the old server into a backup group. To move saved QP metrics from the default running group to a backup group.</p> <p><b>drop</b><br/>removes QP metrics from the system catalog. If you do not provide <i>id</i>, sp_metrics drops the whole group you specified with <i>gid</i>.</p> <p><i>gid</i><br/>is the group ID of the QP metrics from the system catalog.</p> <p><i>id</i><br/>is the ID of the QP metrics from the system catalog.</p> <p><b>flush</b><br/>flushes all aggregated metrics in memory to the system catalog. The aggregated metrics for all statements in memory are zeroed out.</p> <p>'help', 'command'<br/>provides usage information on sp_metrics commands.</p> |
| Examples    | <p><b>Example 1</b> Move the QP metrics from a default group to a backup group.</p> <pre>sp_metrics 'backup', '3'</pre> <p><b>Example 2</b> Provides information about sp_metrics flush:</p> <pre>sp_metrics 'help', 'flush'</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | Access metric information using a select statement with order by against the sysquerymetrics view.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



Use to back up the QP metrics from the old server into a backup group. To move saved QP metrics from the default running group to a backup group, to remove QP metrics from the system catalog. Flush all aggregated metrics in memory to the system catalog.

Permissions System Administrator

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** select, set

**Procedures** sp\_configure

## sp\_modify\_resource\_limit

**Description** Changes a resource limit by specifying a new limit value, or the action to take when the limit is exceeded, or both.

**Syntax** `sp_modify_resource_limit {name, appname}  
rangename, limittype, limitvalue, enforced, action, scope`

**Parameters**

*name*

is the Adaptive Server login to which the limit applies. You must specify either a *name* or an *appname* or both. To modify a limit that applies to all users of a particular application, specify a *name* of null.

*appname*

is the name of the application to which the limit applies. You must specify either a *name* or an *appname* or both. If the limit applies to all applications used by *name*, specify an *appname* of null. If the limit governs a particular application, specify the application name that the client program passes to the Adaptive Server in the login packet.

*rangename*

is the time range during which the limit is enforced. You cannot modify this value, but you must specify a non-null value to uniquely identify the resource limit.

*limittype*

is the type of resource to which the limit applies. You cannot modify this value, but you must specify a non-null value to uniquely identify the resource limit. The value must be one of the following:

| Limit type   | Description                                                                               |
|--------------|-------------------------------------------------------------------------------------------|
| row_count    | Limits the number of rows a query can return                                              |
| elapsed_time | Limits the number of seconds in wall-clock time that a query batch or transaction can run |
| io_cost      | Limits either the actual cost, or the optimizer's cost estimate, for processing a query   |
| tempdb_space | Limits the number of pages from a tempdb database that a single session can have          |

*limit\_value*

is the maximum amount of the server resource that the login or application can use before Adaptive Server enforces the limit. This must be a positive integer less than or equal to 2<sup>31</sup> or null to retain the existing value. The following table indicates what value to specify for each limit type:

| Limit type   | Limit value                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------|
| row_count    | The maximum number of rows a query can return before the limit is enforced                                              |
| elapsed_time | The maximum number of seconds in wall-clock time that a query batch or transaction can run before the limit is enforced |

| Limit type   | Limit value                                                                          |
|--------------|--------------------------------------------------------------------------------------|
| io_cost      | A unitless measure derived from optimizer's costing formula                          |
| tempdb_space | Limits the number of pages from a temporary database that a single session can have. |

*enforced*

determines whether the limit is enforced prior to or during query execution. You cannot modify this value. Use null as a placeholder.

*action*

is the action to take when the limit is exceeded. The following codes apply to all limit types:

| Action code | Description                |
|-------------|----------------------------|
| 1           | Issues a warning           |
| 2           | Aborts the query batch     |
| 3           | Aborts the transaction     |
| 4           | Kills the session          |
| null        | Retains the existing value |

*scope*

is the scope of the limit. You cannot modify this value. You can use null as a placeholder.

## Examples

**Example 1** Modifies a resource limit that applies to all applications used by "robin" during the *weekends* time range. The limit issues a warning when a query is expected to return more than 3000 rows:

```
sp_modify_resource_limit robin, NULL, weekends, row_count, 3000, NULL,
1, NULL
```

**Example 2** Modifies a resource limit that applies to the *acctg* application on all days of the week and at all times of the day. The limit aborts the query batch when estimated query processing time exceeds 45 seconds:

```
sp_modify_resource_limit NULL, acctg, "at all times", elapsed_time,
45, 2, 2, 6
```

**Example 3** This example changes the value of the resource limit that restricts elapsed time to all users of the *payroll* application during the *tu\_wed\_7\_10* time range. The limit value for elapsed time decreases to 90 seconds (from 120 seconds). The values for time of execution, action taken, and scope remain unchanged:

```
sp_modify_resource_limit NULL, payroll, tu_wed_7_10,
elapsed_time, 90, null, null, 2
```

**Example 4** This example changes the action taken by the resource limit that restricts the row count of all ad hoc queries and applications run by “joe\_user” during the saturday\_night time range. The previous value for action was 3, which aborts the transaction when a query exceeds the specified row count. The new value is to 2, which aborts the query batch. The values for limit type, time of execution, and scope remain unchanged.

```
sp_modify_resource_limit joe_user, NULL,
saturday_night, row_count, NULL, NULL, 2, NULL
```

Usage

- You cannot change the login or application to which a limit applies or specify a new time range, limit type, enforcement time, or scope.
- The modification of a resource limit causes the limits for each session for that login and/or application to be rebound at the beginning of the next query batch for that session.
- Adaptive Server Enterprise provides resource limits to help system administrators prevent queries and transactions from monopolizing server resources. Resource limits, however, are not fully specified until they are bound to a time range.

Permissions

Only a System Administrator can execute sp\_modify\_resource\_limit.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

|              |                     | <b>Command or access</b> |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b> | <b>Audit option</b> | <b>audited</b>           | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38           | exec_procedure      | Execution of a procedure | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documents** For more information, see the *System Administration Guide*.

**System procedures** sp\_add\_resource\_limit, sp\_drop\_resource\_limit, sp\_help\_resource\_limit

## sp\_modify\_time\_range

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Changes the start day, start time, end day, and/or end time associated with a named time range.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | <code>sp_modify_time_range name, startday, endday, starttime, endtime</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Parameters  | <p><i>name</i><br/>is the name of the time range. This must be the name of a time range stored in the <code>sysmeranges</code> system table of the master database.</p> <p><i>startday</i><br/>is the day of the week on which the time range begins. This must be the full weekday name for the default server language, as stored in the <code>syslanguages</code> system table of the master database, or null to keep the existing <i>startday</i>.</p> <p><i>endday</i><br/>is the day of the week on which the time range ends. This must be the full weekday name for the default server language, as stored in the <code>syslanguages</code> system table of the master database, or null to keep the existing end day. The <i>endday</i> can fall either earlier or later in the week than the <i>startday</i>, or it can be the same day as the <i>startday</i>.</p> <p><i>starttime</i><br/>is time of day at which the time range begins. Specify the <i>starttime</i> in terms of a twenty-four hour clock, with a value between 00:00 and 23:59. Use the following form, or null to keep the existing <i>starttime</i>:</p> <p style="padding-left: 40px;"><code>"HH:MM"</code></p> <p><i>endtime</i><br/>is the time of day at which the time range ends. Specify the <i>endtime</i> in terms of a twenty-four hour clock, with a value between 00:00 (midnight) and 23:59. Use the following form, or null to keep the existing <i>endtime</i>:</p> <p style="padding-left: 40px;"><code>"HH:MM"</code></p> <p>The <i>endtime</i> must occur later in the day than the <i>starttime</i>, unless <i>endtime</i> is 00:00.</p> |

---

**Note** For time ranges that span the entire day, specify a start time of “00:00” and an end time of “23:59”.

---

**Examples**      **Example 1** Changes the end day of the “business\_hours” time range from Friday to Saturday. Retains the existing start day, start time, and end time:

```
sp_modify_time_range business_hours, NULL, Saturday, NULL, NULL
```

**Example 2** Specifies a new end day and end time for the “before\_hours” time range:

```
sp_modify_time_range before_hours, Monday, Saturday, NULL, "08:00"
```

Usage

- You cannot modify the “at all times” time range.
- It is possible to modify a time range so that it overlaps with one or more other time ranges.
- The modification of time ranges through the system stored procedures does not affect the active time ranges for sessions currently in progress.
- Changes to a resource limit that has a transaction as its scope does not affect any transactions currently in progress.

Permissions

Only a System Administrator can execute sp\_modify\_time\_range.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Command or access |                |                           |                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event             | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
| 38                | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documents** For more information, see the *System Administration Guide*.

**System procedures** sp\_add\_resource\_limit, sp\_add\_time\_range, sp\_drop\_time\_range

## sp\_modifylogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Modifies the default database, default language, default role activation, login script, full name, the password expiration interval, the minimum password length, and the maximum number of failed logins allowed for a specified Adaptive Server login account.                                                                                                                                                                                                                |
| Syntax      | <code>sp_modifylogin {<i>loginame</i>   "all overrides"}, <i>option</i>, <i>value</i></code>                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><i>loginame</i><br/>is the login account to be modified.</p> <p>"all overrides"<br/>removes the system overrides that were set using the "passwd expiration", "min passwd length", or "max failed_logins" parameters. To remove all the login-specific values, specify:</p> <pre>sp_modifylogin "all overrides", "<i>option</i>", "-1"</pre> <p><i>option</i><br/>specifies the name of the option to be changed. Table 1-27 lists valid options and their descriptions.</p> |

**Table 1-27: sp\_modifylogin option variable and definitions**

| Option              | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| authenticate with   | Authenticates the login. Specify these values: <ul style="list-style-type: none"> <li>• ASE – use Adaptive Server internal authentication using syslogin passwords.</li> <li>• LDAP – use external authentication with an LDAP Server.</li> <li>• PAM – use external authentication with PAM.</li> <li>• KERBEROS – use external authentication with KERBEROS.</li> <li>• ANY – by default, users are authenticated using this authentication method. A user with ANY authentication means that Adaptive Server checks if there is any external authentication mechanism defined, and if there is, it is used. Otherwise, it uses ASE authentication.</li> </ul> |
| defdb               | The “home” database to which the user is connected when he or she logs in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| deflanguage         | The official name of the user’s default language.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| fullname            | The user’s full name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| "add default role"  | The role or roles to be activated by default at login.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| "drop default role" | The role or roles to be dropped from the list of roles activated by default at login. This option affects only user-defined roles, not system roles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| "passwd expiration" | specifies the password expiration interval in days. It can be any value between 0 and 32767, inclusive. The password expires when the number of specified days passes. For example, if you create a new login on August 1, 2007 at 10:30 AM, with a password expiration interval of 30 days, the password expires on August 31, 2007 at 10:30 AM.                                                                                                                                                                                                                                                                                                                |

| Option              | Definition                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "min passwd length" | The minimum password length required for the specified login. It can be any value between 0 and 30, inclusive. 0 specifies that no password is required. The default is 6.                                                                                                                                                                                                                                                    |
| "max failed_logins" | The number of failed login attempts that causes the specified login to be locked. When you set "max failed_login" to: <ul style="list-style-type: none"> <li>• 1 – login gets locked on one login failure.</li> <li>• 0 – logins never get locked regardless of the number of failed login attempts.</li> <li>• -1 – syslogins.logincount gets incremented on every failed login attempt, but login is not locked.</li> </ul> |
| login script        | Name of the stored procedure to run automatically when user logs in.                                                                                                                                                                                                                                                                                                                                                          |

*value*

is the value of the option you specified for the *option* parameter. The *value* parameter is a character datatype; therefore, quotes are required for positive and negative numeric values.

Examples

**Example 1** Changes the default database for "sarah" to pubs2:

```
sp_modifylogin sarah, defdb, "pubs2"
```

**Example 2** Sets the default language for "claire" to French:

```
sp_modifylogin claire, deflanguage, "french"
```

**Example 3** Changes the full name of user "clemens" to "Samuel Clemens":

```
sp_modifylogin clemens, fullname, "Samuel Clemens"
```

**Example 4** Adds the specialist role to the list of roles activated by default when user csmith logs in:

```
sp_modifylogin csmith, "add default role", specialist_role
```

**Example 5** Drops the intern role from the list of roles activated by default when user "hpillai" logs in:

```
sp_modifylogin hpillai, "drop default role", intern_role
```

**Example 6** Changes the maximum number of failed login attempts for the login "joe" to 40:

```
sp_modifylogin "joe", "max failed_logins", "40"
```

**Example 7** Changes the overrides for maximum failed login attempts of all logins with overrides to 3:

```
sp_modifylogin "all overrides", "max failed_logins", "3"
```

**Example 8** Removes the overrides for maximum failed logins option for all logins with overrides:



```
sp_modifylogin "all overrides", "max failed_logins", "-1"
```

**Example 9** The login account named “nightlyjob” can only authenticate using local ASE authentication, and not an external mechanism such as LDAP or PAM:

```
sp_modifylogin "nightlyjob", "authenticate with", "ASE"
```

**Example 10** Runs the *proc\_pl* script when Bob1 logs in to Adaptive Server:

```
sp_modifylogin Bob1, 'login script', proc_pl
```

#### Usage

- The “max failed\_logins” value -1 value indicates that the failed login count in the syslogins column logincount, is updated whenever an authentication failure occurs, but that the account is not locked. Compare with value 0, which avoids incrementing the column for every failed authentication and avoids locking the account due to authentication failures.

For more information on failed logins see “sp\_configure” for changes to maximum failed logins and “sp\_passwordpolicy” for changes to maximum failed login configuration options.

- *In cluster environments* – sp\_modifylogin fails if you attempt to include a local temporary database as a default database for any login.
- Set a default database, language, or full name either with sp\_modifylogin or with sp\_addlogin when first adding the user’s login to Adaptive Server.
  - If you do not specify a default database, the user’s default is master.
  - If you do not specify a language, the user’s default language is set to the server’s default language.
  - If you do not specify a full name, that column in syslogins remains blank.
- If there are any login triggers associated with the login in question, they are listed after the Auto Login Script line. For more information, see in “Row-level access control” in Chapter 11, “Managing User Permissions” of the *System Administration Guide*.
- You cannot use double quotes in the script name for the login script option. For example, Adaptive Server issues an error message if you specify a login script named “script”name”.
- For more information about password expiration interval, minimum password length, and maximum number of failed logins, see “User-Defined Login Security” in the *System Administration Guide*.

Using the "clear" value with *sp\_modifylogin*

Passing in the value of "clear" for the options "passwd expiration", "min passwd length" and "max failed\_logins", with a specific loginame, causes a previous setting of that option for the specific user to be cleared.

For example, setting the "passwd expiration" value specific to user "John" causes John's password to expire in 30 days, even though the system default for passwd expiration is 90 days:

```
1> sp_modifylogin 'John', 'passwd expiration', 30
2> go
```

Use the following to clear the "passwd expiration" value specific to user "John":

```
1> sp_modifylogin 'John', 'passwd expiration', 'clear'
2> go
```

If you succeed, John's password expiration becomes the same as the system default from now on, and you see message 19813, which says:

```
"The login-specific 'passwd expiration' attribute has
been removed."
```

If you use 'clear' to clear a setting for a user that did not have a previous value set, you see message 19812, and the user continues to use the system default for that attribute as before:

```
"There is no login-specific 'passwd expiration'
attribute set for this user."
```

Changing a user's default database

- After *sp\_modifylogin* is executed to change the user's default database, the user is connected to the new *defdb* the next time he or she logs in. However, the user cannot access the database until the Database Owner gives the user access through *sp\_adduser* or *sp\_addalias*, or unless there is a "guest" user in the database's *sysusers* table. If the user does not have access to the database by any of these means, she or he is connected to master and an error message appears.
- If a user's default database is dropped, or if the user is dropped from the database, the user is connected to master on his or her next login, and an error message appears.
- If a user's default language is dropped from the server, the server-wide default language is used as the initial language setting, and a message appears.

### Changing a user's role activation

- Use `sp_modifylogin` to set a role to be activated by default at login or to drop a role from those activated by default at login.

`sp_modifylogin account`

Adaptive Server version 15.0.2 includes the following option for `sp_modifylogin account`:

```
sp_modifylogin account, "max failed_logins", -1
```

This new value for the 'max failed\_logins' option indicates that the failed login count in the `syslogins` column login count, is updated whenever an authentication failure occurs, but that the account is not locked. Compare with value 0, which avoids incrementing the column for every failed authentication and avoids locking the account due to authentication failures.

For more information on failed logins see `sp_configure` on page 195 for changes to maximum failed logins and `sp_passwordpolicy` on page 556 for changes to maximum failed login configuration options.

*sp\_modifylogin and sp\_addlogin authenticate with option*

The `authenticate with` option to `sp_modifylogin` or `sp_addlogin` requires that the login use *only* a specified authentication mechanism. The supported authentication mechanisms are:

- ASE
- LDAP
- PAM
- KERBEROS
- ANY

Using `authenticate with` with these supported authentication mechanisms allows you to override the server-wide configuration parameters `unified login required`, `enable ldap user auth`, and `enable pam user auth`.

If more than one external authentication mechanism is configured and a login-specific `authenticate with option` has not been set, the external authentication mechanism is based on the following order:

- 1 Kerberos
- 2 LDAP
- 3 PAM

For example, if both PAM and LDAP are configured, LDAP is chosen for external authentication, not PAM.

At the time of authentication, exactly one external authentication mechanism is attempted. Depending on the value of configuration parameters, you can try the “ASE” authentication mechanism when the external authentication fails.

When none of the external authentication mechanisms are configured, Adaptive Server uses ASE authentication.

#### **Using *authenticate with* to override server-wide authentication options**

---

**Note** You must have sso\_role permissions to modify the *authenticate with* option for a login.

---

To configure external authentication mechanisms such as Kerberos, LDAP, or PAM, Sybase recommends that you determine the server-wide authentication setting that matches your company’s security policy. This server-wide setting is appropriate for most client connections. Then, you can set individual logins to another authentication mechanism using the *authenticate with* option.

You can use *authenticate with* to specify an the external authentication mechanisms Kerberos, LDAP, and PAM. You can also issue *sp\_modifylogin* or *sp\_addlogin* *authenticate with* to set the authentication mechanism to “ASE” to use only the Adaptive Server internal authentication mechanism. To allow any authentication mechanism, use *authenticate with ANY*.

---

**Note** When authentication mechanism “ANY” (the default) is set for a login, the login uses the server-wide configuration settings to control authentication.

---

*sp\_modifylogin* also checks for any conflicts with any login mapping specified by a previous *sp\_maplogin*.

#### Examples

**Example 1** Creates a local account to run a batch application. Consider an environment that uses Kerberos for a centralized user account repository and requires its general population of users to *authenticate* using Kerberos, Configure Kerberos by setting these parameters:

```
sp_configure "use security services", 1
go

sp_configure "unified login required", 1
go
```

These configuration parameters now require all user logins, other than “sa,” to authenticate using Kerberos to gain access to the Adaptive Server.

Now consider a nightly batch operation run by the Adaptive Server database administrator or operator, which may authenticate locally without requiring the account to exist in the Kerberos repository. Use `authenticate with` option to `sp_modifylogin` or `sp_addlogin`:

```
sp_addlogin nightlybatch, localpassword, ...
go
sp_modifylogin nightlybatch, 'authenticate with', 'ASE'
go
```

**Example 2** This example migrates users from Adaptive Server authentication to LDAP user authentication, using a phased approach for moving clients from local Adaptive Server authentication to LDAP user authentication. The LDAP directory server has been set up but has not yet been populated with all user accounts. A small population of users has agreed to a pilot program to test out LDAP for external authentication to Adaptive Server. To allow failover to ASE authentication when authentication with the LDAP directory server fails or the LDAP server is unavailable, enter:

```
sp_configure 'enable ldap user auth', 1
go
```

Users without LDAP accounts fail over to Adaptive Server authentication. The users in the pilot program are automatically added to the LDAP directory server and may begin authenticating using the LDAP directory server.

A user can use the `@@authmech` global variable to determine which authentication mechanism was used to authenticate with with:

```
select @@authmech
```

You can require users in the pilot program to use only LDAP authentication by entering:

```
sp_maplogin loginame, 'authenticate with', 'ldap'
go
```

If you decide to use LDAP user authentication for all users, change the configuration parameter to level 2. Any logins set to authenticate with LDAP during the pilot program can be reset to the default value “ANY”. Because the configuration parameter is set to 2. “ANY” logins are still required to use LDAP:

```
sp_configure 'enable ldap user auth', 2
go
sp_maplogin loginame, 'authenticate with', 'any'
```

go

---

**Note** If a login has `authenticate with` set to a specific authentication mechanism such as LDAP, Kerberos, PAM, or ASE, that login can use only that mechanism for authentication. Sybase suggests that you use `authentication with` to set exceptions to the server-wide settings and to force a particular authentication mechanism to be used.

---

Permissions

A user can use `sp_modifylogin` to change their default database, default language, and full name. Only a System Administrator or System Security Officer can execute `sp_modifylogin` to change the default database, default language, or full name of another user. Only a System Security Officer can execute `sp_modifylogin` to activate another user's roles by default at login, change the password expiration interval, the minimum password length, the maximum number of failed logins allowed, and the login script associated with a specified login.

Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** `sp_activeroles`, `sp_addalias`, `sp_addlogin`, `sp_adduser`, `sp_displaylogin`, `sp_displayroles`, `sp_helprotect`,

**Commands** `alter role`, `create procedure`, `create role`, `drop role`, `grant`, `revoke`, `set role`

## sp\_modifystats

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Allows the System Administrator, or any user with permission to execute the procedure and update statistics on the target table, to modify the density values of columns in sysstatistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Syntax      | <pre>sp_modifystats [<i>database</i>].[<i>owner</i>].<i>table_name</i>,                 {"<i>column_group</i>"   "all"},                 MODIFY_DENSITY,                 {<i>range</i>   <i>total</i>},                 {<i>absolute</i>   <i>factor</i>},                 "<i>value</i>"</pre> <p>Or:</p> <pre>sp_modifystats [<i>database</i>].[<i>owner</i>].<i>table_name</i>, <i>column_name</i>,                 REMOVE_SKEW_FROM_DENSITY</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Parameters  | <p><i>table_name</i><br/>is the name of the table to change. Specify the database name if the table is in another database, and specify the owner's name if more than one table of that name exists in the database. The default value for <i>owner</i> is the current user, and the default value for <i>database</i> is the current database.</p> <p><i>column_group</i><br/>an ordered list of column names. To change a statistic for multiple columns (such as a density value), list the columns in the order used to create the statistic. Separate the column names with commas. For example, if your table has a density statistic on columns <i>a1</i>, <i>a2</i>, <i>a3</i>, <i>a4</i>:</p> <ul style="list-style-type: none"> <li>• “<i>a1</i>” modifies column <i>a1</i>.</li> <li>• “<i>a1</i>, <i>a2</i>, <i>a3</i>” modifies the column group <i>a1,a2,a3</i>,</li> <li>• You can also use a wildcard character, %, with the <i>column_group</i> parameter to represent a range of characters. For example, “<i>a1</i>, %, <i>a3</i>” modifies the groups <i>a1,a2,a3</i> and <i>a1</i>, <i>a4</i>, <i>a3</i>, and so on; “<i>a1</i>, %” modifies the groups <i>a1,a2</i> and <i>a1,a2,a3</i>, and so on, but not <i>a1</i>; “<i>a1</i>%” modifies the groups <i>a1,a2</i> and <i>a1,a2,a3</i>, and so on, as well as <i>a1</i>.</li> </ul> <p><i>all</i><br/>modifies all column group for this table. Because “<i>all</i>” is a keyword, it requires quotes.</p> |

#### MODIFY\_DENSITY

allows you to modify either the range or total density of a column or column group to the granularity specified in the *value* parameter. Range cell density represents the average number of duplicates of all values that are represented by range cells in a histogram. See the *Performance and Tuning Guide* for more information.

#### range

modifies the range cell density.

#### total

modifies the total cell density.

#### absolute

ignore the current value and use the number specified by the *value* parameter.

#### factor

multiply the current statistical value by the *value* parameter.

#### value

is either the specified density value or a multiple for the current density. Must be between zero and one, inclusive, if absolute is specified.

#### column\_name

is the name of a column in that table.

#### REMOVE\_SKEW\_FROM\_DENSITY

allows the System Administrator to change the total density of a column to be equal to the range density, which is useful when data skew is present. Total density represents the average number of duplicates for all values, those in both frequency and range cells. Total density is used to estimate the number of matching rows for joins and for search arguments whose value is not known when the query is optimized. See the *Performance and Tuning Guide* for more information.

REMOVE\_SKEW\_FROM\_DENSITY also updates the total density of any composite column statistics for which this column is the leading attribute. Most commonly, a composite index for which this column is the leading attribute would produce these composite column statistics, but they can also be produced when you issue a composite update statistics command.

#### Examples

**Example 1** Changes the range density for column group c00, c01 in table tab\_1 to 0.50000000:

```
sp_modifystats "tab_1", "c00, c01", MODIFY_DENSITY, range, absolute, "0.5"
```



**Example 2** The total density for column group c00, c01 in tab\_1 is multiplied by .5. That is, divided in half:

```
sp_modifystats "tab_1", "c00,c01", MODIFY_DENSITY, total, factor, "0.5"
```

**Example 3** The total density for all the columns in table tab\_1 is multiplied by .5.

```
sp_modifystats "tab_1", "all", MODIFY_DENSITY, total, factor, "0.5"
```

**Example 4** Total density for all column groups starting with c12 is changed to equal the range density.

```
sp_modifystats "tab_1", "c12" REMOVE_SKEW_FROM_DENSITY
```

#### Usage

- Allows the System Administrator to modify the density values of a column—or columns—in sysstatistics.
- Use `optdiag` to view a table's statistics. See the *Performance and Tuning Guide* for more information about table density and using `optdiag`.
- Any modification you make to the statistics with `sp_modifystats` is overwritten when you run `update statistics`. To make sure you are using the most recent statistical modifications, you should run `sp_modifystats` after you run `update statistics`.
- Because `sp_modifystats` modifies information stored in the `sysstatistics` table, you should make a backup of statistics before execute running `sp_modifystats` in a production system.

#### Permissions

No one has default use of `sp_modifystats`. A person with `sso_role` must specify the permissions on `sp_modifystats`.

#### Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

#### Tables used

`sysstatistics`

#### See also

**Command** `update statistics`

## sp\_modifythreshold

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Modifies a threshold by associating it with a different threshold procedure, free-space level, or segment name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Syntax      | <pre>sp_modifythreshold <i>dbname</i>, <i>segname</i>, <i>free_space</i>                     [, <i>new_proc_name</i>][, <i>new_free_space</i>][, <i>new_segname</i>]</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <p><i>dbname</i><br/>is the database for which to change the threshold. This must be the name of the current database.</p> <p><i>segname</i><br/>is the segment for which to monitor free space. Use quotes when specifying the “default” segment.</p> <p><i>free_space</i><br/>is the number of free pages at which the threshold is crossed. When free space in the segment falls below this level, Adaptive Server executes the associated stored procedure.</p> <p><i>new_proc_name</i><br/>is the new stored procedure to execute when the threshold is crossed. The procedure can be located in any database on the current Adaptive Server or on an Open Server. Thresholds cannot execute procedures on remote Adaptive Servers.</p> <p><i>new_free_space</i><br/>is the new number of free pages to associate with the threshold. When free space in the segment falls below this level, Adaptive Server executes the associated stored procedure.</p> <p><i>new_segname</i><br/>is the new segment for which to monitor free space. Use quotes when specifying the “default” segment.</p> |
| Examples    | <p><b>Example 1</b> Modifies a threshold on the “default” segment of the mydb database to execute when free space on the segment falls below 175 pages instead of 200 pages. NULL is a placeholder indicating that the procedure name is not being changed:</p> <pre>sp_modifythreshold mydb, "default", 200, NULL, 175</pre> <p><b>Example 2</b> Modifies a threshold on the data_seg segment of mydb so that it executes the new_proc procedure:</p> <pre>sp_modifythreshold mydb, data_seg, 250, new_proc</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Usage

You *cannot* use `sp_modifythreshold` to change the amount of free space or the segment name for the last-chance threshold.

## Crossing a threshold

- When a threshold is crossed, Adaptive Server executes the associated stored procedure. Adaptive Server uses the following search path for the threshold procedure:
  - If the procedure name does not specify a database, Adaptive Server looks in the database in which the threshold was crossed.
  - If the procedure is not found in this database and the procedure name begins with “sp\_”, Adaptive Server looks in the `sybssystemprocs` database.

If the procedure is not found in either database, Adaptive Server sends an error message to the error log.

- Adaptive Server uses a **hysteresis value**, the global variable `@@thresh_hysteresis`, to determine how sensitive thresholds are to variations in free space. Once a threshold executes its procedure, it is deactivated. The threshold remains inactive until the amount of free space in the segment rises to `@@thresh_hysteresis` pages above the threshold. This prevents thresholds from executing their procedures repeatedly in response to minor fluctuations in free space.

## The last-chance threshold

- By default, Adaptive Server monitors the free space on the segment where the log resides and executes `sp_thresholdaction` when the amount of free space is less than that required to permit a successful dump of the transaction log. This amount of free space, the **last-chance threshold**, is calculated by Adaptive Server and cannot be changed by users.
- If the last-chance threshold is crossed before a transaction is logged, Adaptive Server suspends the transaction until log space is freed. Use `sp_dboption` to change this behavior for a particular database. Setting the `abort tran on log full` option to true causes Adaptive Server to roll back all transactions that have not yet been logged when the last-chance threshold is crossed.
- You cannot use `sp_modifythreshold` to change the free-space value or segment name associated with the last-chance threshold.
- Only databases that store their logs on a separate segment can have a last-chance threshold. Use `sp_logdevice` to move the transaction log to a separate device.

#### Other thresholds

- Each database can have up to 256 thresholds, including the last-chance threshold.
- Each threshold must be at least 2 times @@*thresh\_hysteresis* pages from the next closest threshold.
- Use *sp\_helpthreshold* for information about existing thresholds.
- Use *sp\_droptreshold* to drop a threshold from a segment.

#### Creating threshold procedures

- Any user with *create procedure* permission can create a threshold procedure in a database. Usually, a System Administrator creates *sp\_thresholdaction* in the master database, and Database Owners create threshold procedures in user databases.
- *sp\_modifythreshold* does not verify that the specified procedure exists. It is possible to associate a threshold with a procedure that does not yet exist.
- *sp\_modifythreshold* checks to ensure that the user modifying the threshold procedure has been directly granted the “sa\_role”. All system roles active when the threshold procedure is modified are entered in *systhresholds* as valid roles for the user writing the procedure. However, only directly granted system roles are activated when the threshold fires. Indirectly granted system roles and user-defined roles are not activated.
- Adaptive Server passes four parameters to a threshold procedure:
  - *@dbname*, *varchar(30)*, which identifies the database
  - *@segment\_name*, *varchar(30)*, which identifies the segment
  - *@space\_left*, *int*, which indicates the number of free pages associated with the threshold
  - *@status*, *int*, which has a value of 1 for last-chance thresholds and 0 for other thresholds

These parameters are passed by position rather than by name; your threshold procedure can use other names for them, but the procedure must declare them in the order shown and with the correct datatypes.

- It is not necessary to create a different procedure for each threshold. To minimize maintenance, create a single threshold procedure in the *sybsystemprocs* database that can be executed by all thresholds.
- Include *print* and *raiserror* statements in the threshold procedure to send output to the error log.

### Executing threshold procedures

- Tasks that are initiated when a threshold is crossed execute as background tasks. These tasks do not have an associated terminal or user session. If you execute `sp_who` while these tasks are running, the status column shows “background”.
- Adaptive Server executes the threshold procedure with the permissions of the user who modified the threshold, at the time he or she executed `sp_modifythreshold`, minus any permissions that have since been revoked.
- Each threshold procedure uses one user connection, for as long as it takes to execute the procedure.

### Disabling free-space accounting

---

**Warning!** System procedures cannot provide accurate information about space allocation when free-space accounting is disabled.

---

- Use the `no free space acctg` option of `sp_dboption` to disable free-space accounting on non-log segments.
- You cannot disable free-space accounting on log segments.

### Permissions

Only the Database Owner or a System Administrator can execute `sp_modifythreshold`.

### Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

### See also

**Documents** For more information, see the *System Administration Guide*.

**Commands** `create procedure`, `dump transaction`

**System procedures** `sp_addthreshold`, `sp_dboption`, `sp_droptreshold`, `sp_helpthreshold`, `sp_thresholdaction`

## sp\_monitor

### Description

Displays statistics about Adaptive Server.

### Syntax

sp\_monitor syntax is divided by command type for clarity, since many of the types have parameters of their own. The following code paragraph shows the syntax of the stored procedure as a whole, followed by the syntax of each command type interface.

```
sp_monitor [[connection | statement], [cpu | diskio | elapsed time]]
           [event, [spid ]]
           [procedure, [dbname, [procname[, summary | detail]]]]
           [enable] [disable]
           [help],
           [deadlock][procstack]
```

### Parameters

#### connection

displays information on each connection. connection uses the following monitoring tables:

- monProcessSQLText
- monProcessActivity

#### statement

displays information on each statement. statement uses the following monitoring tables:

- monProcessSQLText
- monProcessStatement

#### cpu | diskio | elapsed time

these parameters order the output of sp\_monitor connection or sp\_monitor statement.

- cpu – indicates the amount of CPU time consumed by each different connection or statement.
- diskio – indicates the number of physical reads performed by each connection or statement.
- elapsed time – indicates the sum of the CPU time and the wait times for each connection or statement.

**event**

displays three possibilities. When you specify:

- No option – only user tasks are displayed.
- `sp_monitor, event, "-1"` – wait information about all tasks, both user and system, is displayed.
- `sp_monitor, event, "spid"` – wait information pertaining to only the specified server process ID is displayed.

**spid**

allows you to obtain event information for a specific task by entering its *spid*. You must specify the numeric value of *spid* within quotation marks.

**procedure**

displays statistics about stored procedures:

- ProcName – the stored procedure being monitored.
- DBNAME – the database in which the stored procedure is located.
- NumExecs – the approximate number of executions of this specific stored procedure.
- AvgCPUTime – the average CPU time that it takes for the stored procedure to execute.
- AvgPhysicalReads – the average number of disk reads performed by the stored procedure.
- AvgLogicalReads – the average number of logical reads performed by the stored procedure.
- AvgMemUsed\_KB – the average amount of memory in KB used by the stored procedure.

*procedure* uses the `monSysStatement` monitoring table.

**dbname**

displays information on procedures for the specified database.

**procname**

displays information on the specified procedure.

**summary | detail**

displays either summary information, which provides an average of all instances of the procedure, or detailed information, which provides information on every instance of the stored procedure.

**enable**

enables the new options for sp\_monitor. It turns on the configuration parameter required to begin monitoring.

**disable**

disables monitoring.

**help**

displays the syntax and examples for sp\_monitor, and also reports extensive information on using this procedure for deadlock analysis:

```
sp_monitor 'help', 'deadlock'
```

The help option also provides command-specific examples.

**deadlock**

tells sp\_monitor to process historical data from the monDeadlock table, and prints out a block of output for each instance of deadlock.

**procstack**

examines the execution context of a task, including that of a deeply nested stored procedure. The stack of procedures executed is extracted from the monProcessProcedures monitoring table.

**Examples**

**Example 1** Reports information about how busy Adaptive Server has been:

```
sp_monitor
last_run                current_run            seconds
-----
Jan 29 1987 10:11AM    Jan 29 1987 10:17AM  314

cpu_busy                io_busy               idle
-----
4250 (215) -68%        67 (1) -0%           109 (100) -31%

packets_received        packets_sent           packet_errors
-----
781 (15)                10110 (9596)         0 (0)

total_read              total_write total_errors    connections
-----
394 (67)                5392 (53)            0 (0)                15 (1)
```

**Example 2** Shows how to display information about connections:

```
1> sp_monitor "connection"
2> go
spid      LoginName      ElapsedTime  LocksHeld  SQLText
```



```

-----
12      sa          90300      2          exec get_employee_salaries
27      sa          17700      1          exec get_employee_perks

```

By default, the output by default is sorted in the descending order of the ElapsedTime.

**Example 3** Identifies the connections performing the most physical reads:

```

1> sp_monitor "connection","diskio"
2> go
spid  LoginName  Physical_Reads  LocksHeld  SQLText
-----
12    sa          117             2          exec get_employee_salaries
27    sa          1               0          exec get_employee_perks

```

**Example 4** Displays information about each statement:

```

1> sp_monitor "statement"
2> go
spid  LoginName  ElapsedTime  SQLText
-----
12    sa          100          exec get_employee_salaries

```

**Example 5** Displays the events each task spent time waiting for and the duration of the wait, reported in descending order of wait times:

```

1> sp_monitor "event"
2> go
SPID  WaitTime  Description
-----
6     108200   hk: pause for some time
29    108200   waiting for incoming network data
10    107800   waiting while allocating new client socket
15    17100    waiting for network send to complete
14    5900     waiting for CTLIB event to complete
14    400      waiting for disk write to complete
7     200      hk: pause for some time
7     100      waiting on run queue after yield
12    100      waiting for network send to complete

```

**Example 6** Displays event data for spid 14:

```

1> sp_monitor "event","14"
2> go
WaitTime  Description

```

```

-----
9000 waiting for CTLIB event to complete
600 waiting for disk write to complete
200 waiting for disk write to complete
100 waiting on run queue after yield
100 wait for buffer write to complete

```

**Example 7** Provides a summary of most recently run procedures, sorted in descending order of average elapsed time. This example provides historical monitoring information rather than the current state.

```

1> sp_monitor "procedure"
2> go

```

Average Procedure Statistics  
 =====

| ProcName        | DBName | AvgElapsedTime | AvgCPUTime | AvgWaitTime | AvgPhysicalReads | AvgLogicalReads | AvgPacketsSent | NumExecs |
|-----------------|--------|----------------|------------|-------------|------------------|-----------------|----------------|----------|
| neworder_remote | tpcc   | 1833           | 16         | 1083        | 26               | 96              | 0              | 6        |
| neworder_local  | tpcc   | 1394           | 13         | 1181        | 31               | 122             | 0              | 38       |
| tc_startup      | tpcc   | 1220           | 3          | 1157        | 0                | 3               | 0              | 59       |
| delivery        | tpcc   | 1000           | 0          | 800         | 23               | 49              | 0              | 2        |

Usage

**Note** Before using the new parameters associated with sp\_monitor, you must set up monitoring tables and the related stored procedures needed to enable these options, which are part of the *installmontables* script. For more information, see “Installing Monitoring Tables” in *Performance and Tuning: Monitoring and Analyzing*.

- Adaptive Server keeps track of how much work it has done in a series of global variables. sp\_monitor displays the current values of these global variables and how much they have changed since the last time the procedure executed.
- This table shows the monitoring tables accessed by each option type.

**Table 1-28: Monitoring tables accessed by monitoring types**

| Monitoring type | Tables accessed    | Configuration option         | Configuration option type |
|-----------------|--------------------|------------------------------|---------------------------|
| connection      | monProcessSQLext   | max SQL text monitored       | Value                     |
|                 |                    | SQL batch capture            | Boolean                   |
|                 | monProcessActivity | wait event timing            | Boolean                   |
|                 |                    | per object statistics active | Boolean                   |

| Monitoring type     | Tables accessed      | Configuration option         | Configuration option type |
|---------------------|----------------------|------------------------------|---------------------------|
| procstack           | monProcessProcedures | None                         | N/A                       |
| statement           | monProcessSQLText    | max SQL text monitored       | Value                     |
|                     |                      | SQL batch capture            | Boolean                   |
|                     | monProcessStatement  | statement statistics active  | Boolean                   |
|                     |                      | per object statistics active | Boolean                   |
| event               | monProcessWaits      | wait event timing            | Boolean                   |
| process event waits |                      | Boolean                      |                           |
| procedure           | monSysStatement      | statement statistics active  | Boolean                   |
|                     |                      | per object statistics active | Boolean                   |
|                     |                      | statement pipe max messages  | Value                     |
|                     |                      | statement pipe active        | Boolean                   |
| deadlock            | monDeadlock          | deadlock pipe max messages   | Value                     |
|                     |                      | deadlock pipe active         | Boolean                   |

- `sp_monitor` connection monitors connections actively executing T-SQL only, and does not report on all connections.
- You must run `sp_monitor` from the master database. However, if you are analyzing deadlock data archived in another database, you can run `sp_monitor` deadlock from that database.
- `sp_monitor` event no longer displays all tasks (including system tasks), when called with no options. In Adaptive Server version 15.0.2 and above, the event option provides three possibilities. When:
  - No option is provided – only user tasks are displayed.
  - You specify `sp_monitor, event, "-1"`, wait information about all tasks, both user and system, is displayed.
  - You specify `sp_monitor, event, "spid"`, wait information pertaining to only the specified server process ID is displayed.
- For each column, the statistic appears in the form *number(number)-number%* or *number(number)*.
  - The first number refers to the number of seconds (for `cpu_busy`, `io_busy`, and `idle`) or the total number (for the other columns) since Adaptive Server restarted.
  - The number in parentheses refers to the number of seconds or the total number since the last time `sp_monitor` was run. The percent sign indicates the percentage of time since `sp_monitor` was last run.

For example, if the report shows `cpu_busy` as “4250(215)-68%”, it means that the CPU has been busy for 4250 seconds since Adaptive Server was last started, 215 seconds since `sp_monitor` last ran, and 68 percent of the total time since `sp_monitor` was last run.

For the `total_read` column, the value 394(67) means there have been 394 disk reads since Adaptive Server was last started, 67 of them since the last time `sp_monitor` was run.

- Table 1-29 describes the columns in the `sp_monitor` report, the equivalent global variables, if any, and their meanings. With the exception of `last_run`, `current_run` and `seconds`, these column headings are also the names of global variables—except that all global variables are preceded by `@@`. There is also a difference in the units of the numbers reported by the global variables—the numbers reported by the global variables are not milliseconds of CPU time, but machine ticks.

**Table 1-29: Columns in the `sp_monitor` report**

| Column heading                | Equivalent variable          | Meaning                                                                                         |
|-------------------------------|------------------------------|-------------------------------------------------------------------------------------------------|
| <code>last_run</code>         |                              | Clock time at which the <code>sp_monitor</code> procedure last ran.                             |
| <code>current_run</code>      |                              | Current clock time.                                                                             |
| <code>seconds</code>          |                              | Number of seconds since <code>sp_monitor</code> last ran.                                       |
| <code>cpu_busy</code>         | <code>@@cpu_busy</code>      | Number of seconds in CPU time that Adaptive Server’s CPU was doing Adaptive Server work.        |
| <code>io_busy</code>          | <code>@@io_busy</code>       | Number of seconds in CPU time that Adaptive Server has spent doing input and output operations. |
| <code>idle</code>             | <code>@@idle</code>          | Number of seconds in CPU time that Adaptive Server has been idle.                               |
| <code>packets_received</code> | <code>@@pack_received</code> | Number of input packets read by Adaptive Server.                                                |
| <code>packets_sent</code>     | <code>@@pack_sent</code>     | Number of output packets written by Adaptive Server.                                            |
| <code>packet_errors</code>    | <code>@@packet_errors</code> | Number of errors detected by Adaptive Server while reading and writing packets.                 |
| <code>total_read</code>       | <code>@@total_read</code>    | Number of disk reads by Adaptive Server.                                                        |
| <code>total_write</code>      | <code>@@total_write</code>   | Number of disk writes by Adaptive Server.                                                       |
| <code>total_errors</code>     | <code>@@total_errors</code>  | Number of errors detected by Adaptive Server while reading and writing.                         |
| <code>connections</code>      | <code>@@connections</code>   | Number of logins or attempted logins to Adaptive Server.                                        |

- The first time `sp_monitor` runs after Adaptive Server start-up, the number in parentheses is meaningless.

- Adaptive Server's housekeeper task uses the server's idle cycles to write changed pages from cache to disk. This process affects the values of the `cpu_busy`, `io_busy`, and `idle` columns reported by `sp_monitor`. To disable the housekeeper task and eliminate these effects, set the housekeeper free write percent configuration parameter to 0:

```
sp_configure "housekeeper free write percent", 0
```

- You must run `sp_monitor` when a representative workload is running on the system.
- Typically, you will run procedures in this sequence:
  - Run `sp_monitor enable`
  - Invoke `sp_monitor` options
  - Run `sp_monitor disable` when you have completed the monitoring
- When you are using `sp_monitor` procedure, the number of rows returned can be very large; you may want to use the summary option instead of the detail option. It may also take a while for this command to complete on an active system.

**Permissions** You must have `mon_role` permissions to execute `sp_monitor`. For more information see “Monitoring Tables” *Performance and Tuning: Monitoring and Analyzing*.

**Auditing** Values in event and extrainfo columns from the `sysaudits` table are:

| <b>Event</b> | <b>Audit option</b>         | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                      |
|--------------|-----------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | <code>exec_procedure</code> | Execution of a procedure         | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **System procedures** `sp_who`

## sp\_monitorconfig

**Description** Displays cache usage statistics regarding metadata descriptors for indexes, objects, and databases. sp\_monitorconfig also reports statistics on auxiliary scan descriptors used for referential integrity queries, and usage statistics for transaction descriptors and DTX participants.

**Syntax** sp\_monitorconfig "configname"[, "result\_tbl\_name"][, "full"]

**Parameters** *configname*  
 is either all, or part of the configuration parameter name with the monitoring information that is being queried. Valid configuration parameters are listed in the “Usage” section. Specifying all displays descriptor help information for all indexes, objects, databases, and auxiliary scan descriptors in the server.

*“result\_tbl\_name”*  
 is the name of the table you create to save the stored procedure results. This is an optional parameter. If you pass a table name for *result\_tbl\_name* that does not already exist, sp\_monitorconfig creates a table to hold the result set.

*“full”*  
 returns a set of values for the configname that you specify. The values are:

- config\_val – reports the configured value
- system\_val – reports the systems default value when there’s no value configured
- total\_val – reports the actual value used

**Examples** **Example 1** Shows all items that are open:

```
sp_monitorconfig "open"

Configuration option is not unique.
option_name                config_value run_value
-----
current change w/ open cursors          1          1
number of open databases                12          12
number of open indexes                  500          500
number of open objects                  500          500
open index hash spinlock ratio          100          100
open index spinlock ratio               100          100
open object spinlock ratio              100          100
```

**Example 2** Shows the status for all configurations:

```
sp_monitorconfig "all"
```

```
-----
```

```
Usage information at date and time: Oct 25 2002 10:36AM.
```

| Name                         | num_free | num_active | pct_act | Max_Used | Reused |
|------------------------------|----------|------------|---------|----------|--------|
| additional network memory    | 0        | 0          | 0.00    | 0        | NA     |
| audit queue size             | 100      | 0          | 0.00    | 0        | NA     |
| heap memory per user         | 4096     | 0          | 0.00    | 0        | No     |
| max cis remote connection    | 0        | 0          | 0.00    | 0        | NA     |
| max memory                   | 12404    | 21388      | 63.29   | 21388    | NA     |
| max number network listen    | 3        | 2          | 40.00   | 2        | NA     |
| max online engines           | 4        | 1          | 20.00   | 1        | NA     |
| memory per worker process    | 1024     | 0          | 0.00    | 0        | NA     |
| number of alarms             | 31       | 9          | 22.50   | 9        | NA     |
| number of aux scan descri    | 200      | 0          | 0.00    | 0        | NA     |
| number of devices            | 9        | 1          | 10.00   | 1        | NA     |
| number of dtx participant    | 500      | 0          | 0.00    | 0        | NA     |
| number of java sockets       | 0        | 0          | 0.00    | 0        | NA     |
| number of large i/o buffers  | 6        | 0          | 0.00    | 0        | NA     |
| number of locks              | 4673     | 327        | 6.54    | 408      | NA     |
| number of mailboxes          | 30       | 0          | 0.00    | 0        | NA     |
| number of messages           | 64       | 0          | 0.00    | 0        | NA     |
| number of open databases     | 6        | 6          | 50.00   | 6        | No     |
| number of open indexes       | 492      | 8          | 1.60    | 8        | No     |
| number of open objects       | 482      | 18         | 3.60    | 18       | No     |
| number of open partitions    | 447      | 53         | 10.60   | 0        | NA     |
| number of remote connections | 20       | 0          | 0.00    | 0        | NA     |
| number of remote logins      | 20       | 0          | 0.00    | 0        | NA     |
| number of remote sites       | 10       | 0          | 0.00    | 0        | NA     |
| number of sort buffers       | 500      | 0          | 0.00    | 9        | NA     |
| number of user connection    | 23       | 2          | 8.00    | 2        | NA     |
| number of user processes     | 0        | 0          | 0.00    | 0        | NA     |
| partition groups             | 1024     | 0          | 0.00    | 0        | NA     |
| permission cache entries     | 15       | 0          | 0.00    | 0        | NA     |
| procedure cache size         | 2567     | 704        | 21.52   | 810      | No     |
| size of global fixed heap    | 150      | 0          | 0.00    | 0        | NA     |
| size of process object heap  | 1500     | 0          | 0.00    | 0        | NA     |
| size of shared class heap    | 1536     | 0          | 0.00    | 0        | NA     |
| size of unilib cache         | 0        | 0          | 0.00    | 0        | NA     |
| txn to pss ratio             | 16       | 0          | 0.00    | 0        | NA     |

```
(return status = 0)
```

**Example 3** Shows 283 active object metadata descriptors, with 217 free. The maximum used at a peak period since Adaptive Server was last started is 300:

```
sp_monitorconfig "open objects"
```

```
Usage information at date and time: Apr 22 2002 2:49PM.
Name          num_free  num_active  pct_act  Max_Used  Reused
-----
number of open 217      283         56.60    300        No
```

You can then reset the size to 330, for example, to accommodate the 300 maximum used metadata descriptors, plus space for 10 percent more:

```
sp_configure "number of open objects", 330
```

**Example 4** Shows the maximum number of index metadata descriptors, which is 44:

```
sp_monitorconfig "open indexes"

Usage information at date and time: Apr 22 2002 2:49PM.
Name          num_free  num_active  pct_act  Max_Used  Reused
-----
number of open 556      44          7.33    44         No
```

You can reset the size to 100, the minimum acceptable value:

```
sp_configure "number of open indexes", 100
```

**Example 5** Shows the number of active scan descriptors as 30, though Adaptive Server is configured to use 200. Use the number of aux scan descriptors configuration parameter to reset the value to at least 32. A safe setting is 36, to accommodate the 32 scan descriptors, plus space for 10 percent more:

```
sp_monitorconfig "aux scan descriptors"

Usage information at date and time: Apr 22 2002 2:49PM.
Name          num_free  num_active  pct_act  Max_Used  Reused
-----
number of aux s 170      30          15.00    32         No
```

**Example 6** Adaptive Server is configured for five open databases, all of which have been used in the current session.

```
sp_monitorconfig "number of open databases"

Usage information at date and time: Apr 22 2002 2:49PM.
Name          num_free  num_active  pct_act  Max_Used  Reused
-----
number of open  0         5           100.00   5         Yes
```



However, as indicated by the Reused column, an additional database needs to be opened. If all 5 databases are in use, an error may result, unless the descriptor for a database that is not in use can be reused. To prevent an error, reset number of open databases to a higher value.

**Example 7** Only 10.2 percent of the transaction descriptors are currently being used. However, the maximum number of transaction descriptors used at a peak period since Adaptive Server was last started is 523:

```
sp_monitorconfig "txn to pss ratio"

Usage information at date and time: Apr 22 2002  2:49PM.
Name          num_free   num_active   pct_act     Max_Used    Reused
-----
number of open  784        80           10.20      523         NA
```

**Example 8** Using the optional parameter *result\_tbl\_name* to create a user table saves the *sp\_monitorconfig* result to this table:

```
1> create table sample_table
2> (Name varchar(35),Config_val int, System_val int, Total_val int,
3> Num_free int, Num_active int, Pct_act char(6), Max_used int,
4> Num_Reuse int, Date varchar(30))
5> go
```

The name of the table created becomes the second parameter of *sp\_monitorconfig*:

```
1> sp_monitorconfig "locks", sample_table
2> go

(return status = 0)

1> sp_monitorconfig "number of alarms", sample_table
2> go

(return status = 0)

1> select * from sample_table
2> go

Name          Config_val System_val Total_val Num_free Num_active
Pct_act Max_used Num_Reuse   Date
-----
number of locks      5000      684      5000      4915      85
1.70      117      0 Aug 23 2006  6:53AM
number of alarms      40      0      40      28      12
30.00      13      0 Aug 23 2006  6:53AM
```

The result set saved to the table accumulates until you delete or truncate the table.

**Note** If sample\_table is in another database, you must provide its fully qualified name in quotes.

**Example 9** Displays the configure\_value, system\_value, and run\_value columns of all the configurations:

```
sp_monitorconfig "all", null, "full"
go
```

Usage information at date and time: Mar 23 2004 5:15PM.

| Name                      | Configure Value | System Value | Run Value | Num_free | Num_active | Pct_act | Max_Used | Num_Reuse |
|---------------------------|-----------------|--------------|-----------|----------|------------|---------|----------|-----------|
| additional network memory | 0               | 496156       | 496156    | 334844   | 161312     | 32.51   | 161312   | 0         |
| audit queue size          | 100             | 0            | 100       | 100      | 0          | 0.00    | 0        | 0         |
| disk i/o structures       | 256             | 0            | 256       | 256      | 0          | 0.00    | 55       | 0         |
| heap memory per user      | 4096            | 563          | 4096      | 4096     | 0          | 0.00    | 0        | 0         |
| max cis remote connection | 0               | 100          | 100       | 100      | 0          | 0.00    | 0        | 0         |
| max memory                | 33792           | 0            | 33792     | 3452     | 30340      | 89.78   | 30340    | 0         |
| max number network listen | 5               | 0            | 5         | 4        | 1          | 20.00   | 1        | 0         |
| max online engines        | 1               | 0            | 1         | 0        | 1          | 100.00  | 1        | 0         |
| memory per worker process | 1024            | 68           | 1024      | 1024     | 0          | 0.00    | 0        | 0         |
| number of alarms          | 40              | 0            | 40        | 30       | 10         | 25.00   | 10       | 0         |
| number of aux scan descri | 200             | 25           | 200       | 200      | 0          | 0.00    | 0        | 0         |
| number of devices         | 10              | 0            | 10        | 9        | 1          | 10.00   | 1        | 0         |
| number of dtx participant | 500             | 0            | 500       | 500      | 0          | 0.00    | 0        | 0         |
| number of java sockets    | 0               | 50           | 50        | 50       | 0          | 0.00    | 0        | 0         |
| number of large i/o buffe | 6               | 0            | 6         | 6        | 0          | 0.00    | 1        | 0         |
| number of locks           | 5000            | 334          | 5000      | 4905     | 95         | 1.90    | 446      | 0         |
| number of mailboxes       | 30              | 1            | 30        | 29       | 1          | 3.33    | 1        | 0         |
| number of messages        | 64              | 1            | 64        | 64       | 0          | 0.00    | 0        | 0         |
| number of open databases  | 12              | 0            | 12        | 6        | 6          | 50.00   | 6        | 0         |
| number of open indexes    | 500             | 0            | 500       | 481      | 19         | 3.80    | 45       | 0         |
| number of open objects    | 500             | 0            | 500       | 135      | 365        | 73.00   | 367      | 0         |
| number of open partitions | 500             | 0            | 500       | 447      | 53         | 10.60   | 56       | 0         |
| number of remote connecti | 20              | 0            | 20        | 20       | 0          | 0.00    | 0        | 0         |
| number of remote logins   | 20              | 0            | 20        | 20       | 0          | 0.00    | 0        | 0         |
| number of remote sites    | 10              | 0            | 10        | 10       | 0          | 0.00    | 0        | 0         |
| number of sort buffers    | 500             | 0            | 500       | 500      | 0          | 0.00    | 9        | 0         |
| number of user connection | 25              | 0            | 25        | 24       | 1          | 4.00    | 3        | 0         |
| number of worker processe | 0               | 0            | 0         | 0        | 0          | 0.00    | 0        | 0         |
| partition groups          | 1024            | 0            | 1024      | 1024     | 0          | 0.00    | 0        | 0         |
| permission cache entries  | 15              | 0            | 15        | 15       | 0          | 0.00    | 0        | 77        |
| procedure cache size      | 3271            | 0            | 4727      | 0        | 4727       | 100.00  | 8225     | 277       |
| size of global fixed heap | 150             | 0            | 150       | 150      | 0          | 0.00    | 0        | 0         |

```

size of process object he 1500      0      1500      1500      0      0.00      0      0
size of shared class heap 1536      0      1536      1536      0      0.00      0      0
size of unilib cache      0 119386 119386 118922      464      0.39      464      0
txn to pss ratio          16      0      16      400      0      0.00      0      0
(return status = 0)

```

Usage

- If the max cis remote connections configuration parameter has a config\_value, the system\_val reports a value of zero (0).
- If you reconfigure a resource using a value that is smaller than the original value it was given, the resource does not shrink, and the Num\_active configuration parameter can report a number that is larger than Total\_val. The resource shrinks and the numbers report correctly when Adaptive Server restarts.
- sp\_monitorconfig displays cache usage statistics regarding metadata descriptors for indexes, objects, and databases, such as the number of metadata descriptors currently in use by the server.
- sp\_monitorconfig also reports the number of auxiliary scan descriptors in use. A scan descriptor manages a single scan of a table when queries are run on the table.
- sp\_monitorconfig monitors the following resources:

|                                |                              |
|--------------------------------|------------------------------|
| additional network memory      | number of open indexes       |
| audit queue size               | number of open objects       |
| heap memory per user           | number of open partitions    |
| max cis remote connection      | number of remote connections |
| max memory                     | number of remote logins      |
| max number network listeners   | number of remote sites       |
| memory per worker process      | number of sort buffers       |
| max online engines             | number of user connections   |
| number of alarms               | number of worker processes   |
| number of aux scan descriptors | partition groups             |
| number of devices              | permission cache entries     |
| number of dtx participants     | procedure cache size         |
| number of java sockets         | size of global fixed heap    |
| number of large i/o buffers    | size of process object heap  |
| number of locks                | size of shared class heap    |
| number of mailboxes            | size of unilib cache         |
| number of messages             | txn to pss ratio             |
| number of open databases       |                              |
- The columns in the sp\_monitorconfig output provide the following information:

- `num_free` – specifies the number of available metadata or auxiliary scan descriptors not currently used.
  - `num_active` – specifies the number of metadata or auxiliary scan descriptors installed in cache (that is, active).
  - `pct_active` – specifies the percentage of cached or active metadata or auxiliary scan descriptors.
  - `Max_Used` – specifies the maximum number of metadata or auxiliary scan descriptors that have been in use since the server was started.
  - `Reused` – specifies whether a metadata descriptor was reused in order to accommodate an increase in indexes, objects, or databases in the server. The returned value is `Yes`, `No` or `NA` (for configuration parameters that do not support the reuse mechanism, such as the number of aux scan descriptors).
- Use the value in the `Max_Used` column as a basis for determining an appropriate number of descriptors; be sure to add about 10 percent for the final setting. For example, if the maximum number of index metadata descriptors used is 142, you might set the number of open indexes configuration parameter to 157.
  - If the `Reused` column states `Yes`, reset the configuration parameter to a higher value. When descriptors need to be reused, there can be performance problems, particularly with open databases. An open database contains a substantial amount of metadata information, which means that to fill up an open database, Adaptive Server needs to access the metadata on the disk many times; the server can also have a spinlock contention problem. To check for spinlock contention, use the system procedure `sp_sysmon`. For more information, see the *Performance and Tuning Guide*. To find the current number of indexes, objects, or databases, use `sp_countmetadata`.
  - To get an accurate reading, run `sp_monitorconfig` during a normal Adaptive Server peak time period. You can run `sp_monitorconfig` several times during the peak period to ensure that you are actually finding the maximum number of descriptors used.
  - `result_tbl_name` creates a table using the following syntax. All the result information is saved in this table, which returns no standard output.

```
create table table_name(  
    Name varchar(35), Num_free int,  
    Num_active int, Pct_act char(6),  
    Max_Used int, Reuse_cnt int,
```

Date varchar(30))

- Some configuration parameter, such as *number of sort buffers* and *txn to pss ratio*, are dependent on the number of configured user connections, while other configuration parameters, such as *max number of network listeners*, are per engine.
- The output of `sp_monitorconfig` uses the number of user connections and online engines to calculate the values for the columns `num_free`, `num_active`, `pct_act` and `max_used`.
- The updates on the internal monitor counters are done without using synchronization methods because of performance reasons. For this reason, a multi-engine Adaptive Server under heavy load might report numbers in the `sp_monitorconfig` output that are not a completely accurate.
- You might see the number of active locks as greater than 0 on an idle system. These “active” locks are reserved and used internally.

Permissions

Only a System Administrator can execute `sp_monitorconfig`.

Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** `sp_configure`, `sp_countmetadata`, `sp_helpconfig`, `sp_helpconstraint`, `sp_sysmon`

## sp\_object\_stats

**Description** Shows lock contention, lock wait-time, and deadlock statistics for tables and indexes.

**Syntax** sp\_object\_stats interval[, top\_n[, dbname, objname[, rpt\_option]]]

**Parameters** *interval*  
 specifies the time period for the sample. It must be in HH:MM:SS form, for example "00:20:00".

*top\_n*  
 is the number of objects to report, in order of contention. The default is 10.

*dbname*  
 is the name of the database to report on. If no database name is given, contention on objects in all databases is reported.

*objname*  
 is the name of a table to report on. If a table name is specified, the database name must also be specified.

*rpt\_option*  
 must be either rpt\_locks or rpt\_objlist.

**Examples** **Example 1** Reports lock statistics on the top 10 objects server-wide:

```
sp_object_stats "00:20:00"
```

**Example 2** Reports only on tables in the pubtune database, and lists the five tables that experienced the highest contention:

```
sp_object_stats "00:20:00", 5, pubtune
```

**Example 3** Shows only the names of the tables that had the highest locking activity, even if contention and deadlocking does not take place:

```
sp_object_stats "00:15:00", @rpt_option = "rpt_objlist"
```

**Usage**

- sp\_object\_stats reports on the shared, update, and exclusive locks acquired on tables during a specified sample period. The following reports shows the titles tables:

```
Object Name: pubtune..titles (dbid=7,
objid=208003772,lockscheme=Datapages)
```

| Page Locks | SH_PAGE | UP_PAGE | EX_PAGE\$ |
|------------|---------|---------|-----------|
| -----      | -----   | -----   | -----     |
| Grants:    | 94488   | 4052    | 4828      |
| Waits:     | 532     | 500     | 776       |

|             |             |             |            |
|-------------|-------------|-------------|------------|
| Deadlocks:  | 4           | 0           | 24         |
| Wait-time:  | 20603764 ms | 14265708 ms | 2831556 ms |
| Contention: | 0.56%       | 10.98%      | 13.79%     |

\*\*\* Consider altering `pubtune..titles` to `Datarows` locking.

- Table 1-30 shows the meaning of the values.

**Table 1-30: Output of `sp_object_stats`**

| Output row | Value                                                                      |
|------------|----------------------------------------------------------------------------|
| Grants     | The number of times the lock was granted immediately.                      |
| Waits      | The number of times the task needing a lock had to wait.                   |
| Deadlocks  | The number of deadlocks that occurred.                                     |
| Wait-times | The total number of milliseconds that all tasks spent waiting for a lock.  |
| Contention | The percentage of times that a task had to wait or encountered a deadlock. |

- `sp_object_stats` recommends changing the locking scheme when total contention on a table is more than 15 percent, as follows:
  - If the table uses `allpages` locking, it recommends changing to `datapages` locking.
  - If the table uses `datapages` locking, it recommends changing to `datarows` locking.
- `rpt_option` specifies the report type:
  - `rpt_locks` reports grants, waits, deadlocks and wait times for the tables with the highest contention. `rpt_locks` is the default.
  - `rpt_objlist` reports only the names of the objects that had the highest level of lock activity.
- `sp_object_stats` creates a table named `tempdb..syslkstats`. This table is not dropped when the stored procedure completes, so it can be queried by a System Administrator using `Transact-SQL`.
- Only one user at a time should execute `sp_object_stats`. If more than one user tries to run `sp_object_stats` simultaneously, the second command may be blocked, or the results may be invalid.
- The `tempdb..syslkstats` table is dropped and re-created each time `sp_object_stats` is executed.
- The structure of `tempdb..syslkstats` is described in Table 1-31.

**Table 1-31: Columns in the tempdb..syslkstats table**

| Column name | Datatype | Description                                                      |
|-------------|----------|------------------------------------------------------------------|
| dbid        | smallint | Database ID                                                      |
| objid       | int      | Object ID                                                        |
| lockscheme  | smallint | Integer values 1–3: Allpages = 1, Datapages = 2, Datarows = 3    |
| page_type   | smallint | Data page = 0, or index page = 1                                 |
| stat_name   | char(30) | The statistics represented by this row                           |
| stat_value  | float    | The number of grants, waits or deadlocks, or the total wait time |

The values in the stat\_name column are composed of three parts:

- The first part is “ex” for exclusive lock, “sh” for shared lock, or “up” for update lock.
- The second part is “pg” for page locks, or “row” for row locks.
- The third part is “grants” for locks granted immediately, “waits” for locks that had to wait for other locks to be released, “deadlocks” for deadlocks, and “waittime” for the time waited to acquire the lock.
- If you specify a table name, sp\_object\_stats displays all tables by that name. If more than one user owns a table with the specified name, output for these tables displays the object ID, but not the owner name.

Permissions

Only a System Administrator can execute sp\_object\_stats.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                               |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• Roles – Current active roles</li> <li>• Keywords or options – NULL</li> <li>• Previous value – NULL</li> <li>• Current value – NULL</li> <li>• Other information – All input parameters</li> <li>• Proxy information – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** alter table



## sp\_options

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Show option values.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Syntax      | sp_options [ [show   help<br>[, <i>option_name</i>   <i>category_name</i>   null<br>[, dflt   non_dflt   null [, <i>spid</i> ] ] ] ] ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><b>show</b><br/>lists the current and default values of all options, grouped according to their category. Issuing sp_options show with an option name specified gives you the current and default value for the individual option. You can also specify a session ID, and whether you want to view options with default settings or options with non-default settings.</p> <p><b>help</b><br/>indicates that you wish to show usage information. You achieve the same result when you issue sp_options with no parameters.</p> <p><i>option_name</i><br/>is the name of the option.</p> <p><i>category_name</i><br/>is the category of the option.</p> <p><b>null</b><br/>indicates the option for which you want to view the settings.</p> <p><b>dflt   non_dflt   null</b><br/>indicates whether to show options with default settings or to show options with non-default settings.</p> <p><i>spid</i><br/>specifies the session ID. Use the session ID to view other session settings.</p> |

### Examples

#### Example 1 Views sp\_options usage:

```
1> sp_options
2> go

Usage:
sp_options [ [show | help
             [, <option_name>|<category_name>|null
             [, dflt | non_dflt | null
             [, <spid>] ] ] ] ]
```

#### Example 2 Views a list of all current and default options:

```
1> sp_options show
2> go
Category: Query Tuning
```

| name                        | currentsetting | defaultsetting | scope |
|-----------------------------|----------------|----------------|-------|
| optgoal                     | allrows_mix    | allrows_mix    | 0     |
| opttimeoutlimit             | 40             | 10             | 0     |
| merge_join                  | 1              | 1              | 4     |
| hash_join                   | 0              | 0              | 4     |
| nl_join                     | 1              | 1              | 4     |
| distinct_sorted             | 1              | 1              | 4     |
| distinct_sorting            | 1              | 1              | 4     |
| distinct_hashing            | 1              | 1              | 4     |
| group_sorted                | 1              | 1              | 4     |
| group_hashing               | 1              | 1              | 4     |
| group_inserting             | 0              | 0              | 4     |
| order_sorting               | 1              | 1              | 4     |
| append_union_all            | 1              | 1              | 4     |
| merge_union_all             | 1              | 1              | 4     |
| merge_union_distinct        | 1              | 1              | 4     |
| hash_union_distinct         | 1              | 1              | 4     |
| store_index                 | 1              | 1              | 4     |
| bushy_space_search          | 0              | 0              | 4     |
| parallel_query              | 1              | 1              | 4     |
| replicated_partition        | 0              | 0              | 4     |
| ase125_primed               | 0              | 0              | 4     |
| index_intersection          | 0              | 0              | 4     |
| index_union                 | 1              | 1              | 4     |
| multi_table_store_ind       | 0              | 0              | 4     |
| advanced_aggregation        | 0              | 0              | 4     |
| opportunistic_distinct_view | 1              | 1              | 4     |
| repartition_degree          | 3              | 1              | 2     |
| scan_parallel_degree        | 0              | 1              | 2     |
| resource_granularity        | 10             | 10             | 2     |
| parallel_degree             | 0              | 1              | 2     |
| statistics_simulate         | 0              | 0              | 4     |
| forceplan                   | 0              | 0              | 7     |
| prefetch                    | 1              | 1              | 6     |
| metrics_capture             | 0              | 0              | 6     |
| process_limit_action        | quiet          | quiet          | 2     |
| plan_replace                | 0              | 0              | 4     |
| plan_exists_check           | 0              | 0              | 4     |
| plan_dump                   | 0              | 0              | 4     |
| plan_load                   | 0              | 0              | 4     |

(39 rows affected)  
(return status = 0)

**Example 3** Views the current and default setting for an individual option:

```
1> sp_options show, "index_intersection"
2> go
```

| name               | category     | currentsetting | defaultsetting | scope |
|--------------------|--------------|----------------|----------------|-------|
| index_intersection | Query Tuning | 0              | 0              | 4     |

```
(1 row affected)
(return status = 0)
```

**Example 4** Shows just the default setting for an individual option:

```
1> sp_options show, "index_intersection", dflt
2> go
```

| name               | defaultsetting |
|--------------------|----------------|
| index_intersection | 0              |

```
(1 row affected)
(return status = 0)
```

**Example 5** Shows the current and default settings for a category:

```
1> sp_options show, "Query Tuning"
2> go
```

Category: Query Tuning

| name                 | currentsetting | defaultsetting | scope |
|----------------------|----------------|----------------|-------|
| optgoal              | allrows_mix    | allrows_mix    | 0     |
| opttimeoutlimit      | 10             | 10             | 0     |
| merge_join           | 1              | 1              | 4     |
| hash_join            | 0              | 0              | 4     |
| nl_join              | 1              | 1              | 4     |
| distinct_sorted      | 1              | 1              | 4     |
| distinct_sorting     | 1              | 1              | 4     |
| distinct_hashing     | 1              | 1              | 4     |
| group_sorted         | 1              | 1              | 4     |
| group_hashing        | 1              | 1              | 4     |
| group_inserting      | 0              | 0              | 4     |
| order_sorting        | 1              | 1              | 4     |
| append_union_all     | 1              | 1              | 4     |
| merge_union_all      | 1              | 1              | 4     |
| merge_union_distinct | 1              | 1              | 4     |

|                             |       |       |   |
|-----------------------------|-------|-------|---|
| hash_union_distinct         | 1     | 1     | 4 |
| store_index                 | 1     | 1     | 4 |
| bushy_space_search          | 0     | 0     | 4 |
| parallel_query              | 1     | 1     | 4 |
| replicated_partition        | 0     | 0     | 4 |
| ase125_primed               | 0     | 0     | 4 |
| index_intersection          | 0     | 0     | 4 |
| index_union                 | 1     | 1     | 4 |
| multi_table_store_ind       | 0     | 0     | 4 |
| advanced_aggregation        | 0     | 0     | 4 |
| opportunistic_distinct_view | 1     | 1     | 4 |
| repartition_degree          | 3     | 1     | 2 |
| scan_parallel_degree        | 0     | 1     | 2 |
| resource_granularity        | 10    | 10    | 2 |
| parallel_degree             | 0     | 1     | 2 |
| statistics simulate         | 0     | 0     | 4 |
| forceplan                   | 0     | 0     | 7 |
| prefetch                    | 1     | 1     | 6 |
| metrics_capture             | 0     | 0     | 6 |
| process_limit_action        | quiet | quiet | 2 |
| plan replace                | 0     | 0     | 4 |
| plan exists check           | 0     | 0     | 4 |
| plan dump                   | 0     | 0     | 4 |
| plan load                   | 0     | 0     | 4 |

(39 rows affected)  
(return status = 0)

**Example 6** Shows the default settings for the Query Tuning category:

```
1> sp_options show, "Query Tuning", dflt
2> go
```

Category: Query Tuning

| name             | defaultsetting |
|------------------|----------------|
| optgoal          | allrows_mix    |
| opttimeoutlimit  | 10             |
| merge_join       | 1              |
| hash_join        | 0              |
| nl_join          | 1              |
| distinct_sorted  | 1              |
| distinct_sorting | 1              |
| distinct_hashing | 1              |
| group_sorted     | 1              |
| group_hashing    | 1              |

```

group_inserting          0
order_sorting            1
append_union_all         1
merge_union_all          1
merge_union_distinct     1
hash_union_distinct      1
store_index              1
bushy_space_search       0
parallel_query           1
replicated_partition     0
ase125_primed            0
index_intersection       0
index_union              1
multi_table_store_ind    0
advanced_aggregation     0
opportunistic_distinct_view 1
repartition_degree       1
scan_parallel_degree     1
resource_granularity     10
parallel_degree          1
statistics_simulate      0
forceplan                0
prefetch                 1
metrics_capture          0
process_limit_action     quiet
plan_replace             0
plan_exists_check        0
plan_dump                0
plan_load                0

(39 rows affected)
(return status = 0)

```

**Example 7** Shows the options set to a non-default setting in the Query Tuning category:

```

1> sp_options show, "Query Tuning", non_dflt
2> go

```

Category: Query Tuning

| name                 | currentsetting | defaultsetting |
|----------------------|----------------|----------------|
| repartition_degree   | 3              | 1              |
| scan_parallel_degree | 0              | 1              |
| parallel_degree      | 0              | 1              |

(3 rows affected)  
 (return status = 0)

**Example 8** Shows the options in the Query Tuning category:

```
1> sp_options, show, null
2> go
```

Category: Query Tuning

| name                        | currentsetting | defaultsetting | scope |
|-----------------------------|----------------|----------------|-------|
| optgoal                     | allows_mix     | allows_mix     | 0     |
| opttimeoutlimit             | 10             | 10             | 0     |
| merge_join                  | 1              | 1              | 4     |
| hash_join                   | 0              | 0              | 4     |
| nl_join                     | 1              | 1              | 4     |
| distinct_sorted             | 1              | 1              | 4     |
| distinct_sorting            | 1              | 1              | 4     |
| distinct_hashing            | 1              | 1              | 4     |
| group_sorted                | 1              | 1              | 4     |
| group_hashing               | 1              | 1              | 4     |
| group_inserting             | 0              | 0              | 4     |
| order_sorting               | 1              | 1              | 4     |
| append_union_all            | 1              | 1              | 4     |
| merge_union_all             | 1              | 1              | 4     |
| merge_union_distinct        | 1              | 1              | 4     |
| hash_union_distinct         | 1              | 1              | 4     |
| store_index                 | 1              | 1              | 4     |
| bushy_space_search          | 0              | 0              | 4     |
| parallel_query              | 1              | 1              | 4     |
| replicated_partition        | 0              | 0              | 4     |
| ase125_primed               | 0              | 0              | 4     |
| index_intersection          | 0              | 0              | 4     |
| index_union                 | 1              | 1              | 4     |
| multi_table_store_ind       | 0              | 0              | 4     |
| advanced_aggregation        | 0              | 0              | 4     |
| opportunistic_distinct_view | 1              | 1              | 4     |
| repartition_degree          | 3              | 1              | 2     |
| scan_parallel_degree        | 0              | 1              | 2     |
| resource_granularity        | 10             | 10             | 2     |
| parallel_degree             | 0              | 1              | 2     |
| statistics_simulate         | 0              | 0              | 4     |
| forceplan                   | 0              | 0              | 7     |
| prefetch                    | 1              | 1              | 6     |

```

metrics_capture          0          0          6
process_limit_action     quiet      quiet      2
plan replace             0          0          4
plan exists check        0          0          4
plan dump                0          0          4
plan load                0          0          4
(39 rows affected)
(return status = 0)

```

**Example 9** Shows a list of the default settings for the Query Tuning category:

```

1> sp_options show, null, dflt
2> go
Category: Query Tuning

```

| name                        | defaultsetting |
|-----------------------------|----------------|
| -----                       | -----          |
| optgoal                     | allrows_mix    |
| opttimeoutlimit             | 10             |
| merge_join                  | 1              |
| hash_join                   | 0              |
| nl_join                     | 1              |
| distinct_sorted             | 1              |
| distinct_sorting            | 1              |
| distinct_hashing            | 1              |
| group_sorted                | 1              |
| group_hashing               | 1              |
| group_inserting             | 0              |
| order_sorting               | 1              |
| append_union_all            | 1              |
| merge_union_all             | 1              |
| merge_union_distinct        | 1              |
| hash_union_distinct         | 1              |
| store_index                 | 1              |
| bushy_space_search          | 0              |
| parallel_query              | 1              |
| replicated_partition        | 0              |
| ase125_primed               | 0              |
| index_intersection          | 0              |
| index_union                 | 1              |
| multi_table_store_ind       | 0              |
| advanced_aggregation        | 0              |
| opportunistic_distinct_view | 1              |
| repartition_degree          | 1              |
| scan_parallel_degree        | 1              |

```
resource_granularity      10
parallel_degree           1
statistics_simulate       0
forceplan                 0
prefetch                  1
metrics_capture           0
process_limit_action      quiet
plan_replace              0
plan_exists_check         0
plan_dump                 0
plan_load                 0
```

```
(39 rows affected)
(return status = 0)
```

**Example 9** Shows the options set to a non-default setting in the Query Tuning category:

```
1> sp_options show, null, non_dflt
2> go
```

Category: Query Tuning

| name                 | currentsetting | defaultsetting |
|----------------------|----------------|----------------|
| repartition_degree   | 3              | 1              |
| scan_parallel_degree | 0              | 1              |
| parallel_degree      | 0              | 1              |

```
(3 rows affected)
(return status = 0)
```

**Example 10** If you enter a parameter that sp\_options does not understand, you receive the following message:

```
1> sp_options show, "incorrect option"
2> go
```

```
Msg 19615, Level 16, State 1:
Procedure 'sp_options', Line 436:
No option or category matching 'incorrect option' is
found. Valid categories are:
category
```

```
-----
Query Tuning
(1 row affected)
(return status = 1)
```

**Example 11** To see correct usage:



```
1> sp_options help
2> go

Usage:
sp_options [ [show | help
             [, <option_name>|<category_name>|null
             [, dflt | non_dflt | null
             [, <spid>] ] ] ] ]
```

## Usage

Use `sp_options` to view settings for the following options:

- `set plan dump / load`
- `set plan exists check`
- `set forceplan`
- `set plan optgoal`
- `set [optCriteria]`
- `set plan opttimeoutlimit`
- `set plan replace`
- `set statistics simulate`
- `set metrics_capture`
- `set prefetch`
- `set parallel_degree number`
- `set process_limit_action`
- `set resource_granularity number`
- `set scan_parallel_degree number`
- `set repartition_degree number`

## sp\_passthru

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Component Integration Services only</b> Allows the user to pass a SQL command buffer to a remote server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax      | <code>sp_passthru server, command, errcode, errmsg, rowcount<br/>[, arg1, arg2, ... argn]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Parameters  | <p><i>server</i><br/>is the name of a remote server to which the SQL command buffer will be passed. The class of this server must be a supported, non-local server class.</p> <p><i>command</i><br/>is the SQL command buffer. It can hold up to 255 characters.</p> <p><i>errcode</i><br/>is the error code returned by the remote server, if any. If no error occurred at the remote server, the value returned is 0.</p> <p><i>errmsg</i><br/>is the error message returned by the remote server. It can hold up to 1024 characters. This parameter is set only if <i>errcode</i> is a nonzero number; otherwise NULL is returned.</p> <p><i>rowcount</i><br/>is the number of rows affected by the last command in the command buffer. If the command was an insert, delete, or update, this value represents the number of rows affected even though none were returned. If the last command was a query, this value represents the number of rows returned from the external server.</p> <p><i>arg1 ... argn</i><br/>receives the results from the last row returned by the last command in the command buffer. You can specify up to 250 <i>arg</i> parameters. All must be declared as output parameters.</p> |
| Examples    | Returns the date from the Oracle server in the output parameter <i>@oradate</i> . If an Oracle error occurs, the error code is placed in <i>@errcode</i> and the corresponding message is placed in <i>@errmsg</i> . The <i>@rowcount</i> parameter will be set to 1:<br><br><pre>sp_passthru ORACLE, "select date from dual", @errcode output,<br/>  @errmsg output, @rowcount output, @oradate output</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage       | <ul style="list-style-type: none"> <li>• <code>sp_passthru</code> allows the user to pass a SQL command buffer to a remote server. The syntax of the SQL statement or statements being passed is assumed to be the syntax native to the class of server receiving the buffer. No translation or interpretation is performed. Results from the remote server are optionally placed in output parameters.<br/><br/>Use <code>sp_passthru</code> only when Component Integration Services is installed and configured.</li> <li>• You can include multiple commands in the command buffer. For some server classes, the commands must be separated by semicolons. See the <i>Component Integration Services User's Guide</i> for a more complete discussion of query buffer handling in <code>passthru</code> mode.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                     |
|             | Return Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|             | <ul style="list-style-type: none"> <li>• The output parameters <i>arg1</i> ... <i>argn</i> will be set to the values of corresponding columns from the last row returned by the last command in the command buffer. The position of the parameter determines which column's value the parameter will contain. <i>arg1</i> receives values from column 1, <i>arg2</i> receives values from column 2, and so on.</li> <li>• If there are fewer optional parameters than there are returned columns, the excess columns are ignored. If there are more parameters than columns, the remaining parameters are set to NULL.</li> <li>• An attempt is made to convert each column to the datatype of the output parameter. If the datatypes are similar enough to permit <i>implicit</i> conversion, the attempt will succeed. For information on implicit conversion, see "Datatype conversion functions" on page 63 in Chapter 2, "Transact-SQL Functions" of <i>Reference Manual: Building Blocks</i>. See the <i>Component Integration Services User's Guide</i> for information on which datatype represents the datatypes from each server class when in <code>passthru</code> mode.</li> </ul> |
| Permissions | Any user can execute <code>sp_passthru</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Auditing    | Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**System procedures** sp\_autoconnect, sp\_remotesql

## sp\_password

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Adds or changes a password for an Adaptive Server login account.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | <code>sp_password caller_passwd, new_passwd [, loginame, immediate]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><i>caller_passwd</i><br/>is your password. When you are changing your own password, this is your old password. When a System Security Officer is using <code>sp_password</code> to change another user's password, <i>caller_passwd</i> is the System Security Officer's password.</p> <p><i>new_passwd</i><br/>is the new password for the user, or for <i>loginame</i>. Configure the minimum password length with <code>sp_configure minimum password length</code>. The default is 6 bytes. Enclose passwords that include characters besides A-Z, a-z, or 0-9 in quotation marks. Also enclose passwords that begin with 0-9 in quotes.</p> <p><i>loginame</i><br/>the login name of the user whose account password is being changed by the System Security Officer.</p> <p><i>immediate</i><br/>specifies whether a password immediately takes effect on users who are logged in. The values are:</p> <ul style="list-style-type: none"> <li>• 0 – users who are logged in keep their old passwords until they reconnect</li> <li>• 1 – the password changes immediately in the syslogins table, and users who are logged in get their passwords updated while they are still logged in.</li> </ul> |
| Examples    | <p><b>Example 1</b> Changes your password from “3blindmice” to “2mediumhot”. (Enclose the passwords in quotes because they begin with numerals.):</p> <pre>sp_password "3blindmice", "2mediumhot"</pre> <p><b>Example 2</b> A System Security Officer whose password is “2tomato” has changed Victoria's password to “sesame1”:</p> <pre>sp_password "2tomato", sesame1, victoria</pre> <p><b>Example 3</b> Changes your password from NULL to “16tons.” Notice that NULL is not enclosed in quotes (NULL is not a permissible new password):</p> <pre>sp_password null, "16tons"</pre> <p><b>Example 4</b></p> <pre>PRODUCTION...sp_password figaro, lilacs</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

Changes your password on the PRODUCTION server from “figaro” to “lilacs.”

Usage

- sp\_password invokes the password complexity checks introduced in Adaptive Server 15.0.2.
- Any user can change his or her password with sp\_password.
- New passwords must be at least 6 characters long. They cannot be NULL.
- The encrypted text of *caller\_passwd* must match the existing encrypted password of the caller. If it does not, sp\_password returns an error message and fails. *master.dbo.syslogins* lists passwords in encrypted form.
- If a client program requires users to have the same password on remote servers as on the local server, users must change their passwords on all the remote servers before changing their local passwords. Execute sp\_password as a remote procedure call on each remote server. See Example 4.
- You can set the systemwide password expiration configuration parameter to establish a password expiration interval that forces all Adaptive Server login accounts to change passwords on a regular basis. See the *System Administration Guide* for more information.

Encrypted columns and sp\_password

When you use sp\_password to change your password, Adaptive Server:

- Decrypts all your login password encrypted key copies using the old password and then reencrypts them with the new password.
- Updates any key copies assigned to you that are designated for login association. The key copies' password type remains the same.

After a password change, you should log out of all your Adaptive Server sessions before accessing any encrypted data. Alternatively, you can use the immediate parameter of sp\_password to propagate the password change to all sessions.

When the SSO issues sp\_password to reset a user's password, the user's login password-encrypted key copies are dropped by Adaptive Server because the user's old login password is not available. Adaptive Server requires the key custodian to recreate the key copies for the user, if they are needed.

Permissions

Only a System Security Officer can execute sp\_password to change another user's password. Any user can execute sp\_password to change his or her own password.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addlogin, sp\_adduser

## sp\_passwordpolicy

**Description** An interface that a user with sso\_role can use to configure login and password policy options.

**Syntax** To specify, remove, and list new password complexity options:

```
sp_passwordpolicy {"set" | "clear" | "list"}, policy_option, option_value
```

To verify the password complexity options:

```
sp_passwordpolicy 'validate password options'
```

To generate asymmetric key pairs for network login password encryption:

```
sp_passwordpolicy "regenerate keypair"
```

To expire passwords:

```
sp_passwordpolicy "expire role passwords", "[rolename | wildcard]"
```

```
sp_passwordpolicy "expire login passwords", "[login_name | wildcard]"
```

```
sp_passwordpolicy "expire stale role passwords", "datetime"
```

```
sp_passwordpolicy "expire stale login passwords", "datetime"
```

**Parameters**

**set**

sets a value to an option. When using set, you must specify the *policy\_option*.

**clear**

deletes the row for the option specified in the master.dbo.sysattributes table. If there is no policy option specified, clear deletes all the option rows in the sysattributes table. When using clear, you must specify the *policy\_option*.

**list**

lists the values of the options specified. When using list, you must specify the *policy\_option*.

*policy\_option*, *option\_value*

is the option parameter for set, clear, and list, with *option\_value* being the their values:

| Option                       | Description                                                                                                                                                                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow password downgrade     | Ends the password downgrade period. During the password downgrade period, passwords are stored in syslogins in both old and new encodings to allow user passwords to retained if the server is downgraded, for example, to Adaptive Server 15.0.2. |
| disallow simple passwords    | Value of 1 turns this option on, and a value of 0 turns it off.                                                                                                                                                                                    |
| min digits in password       | Indicates the minimum number of digits to be allowed in a password.                                                                                                                                                                                |
| min alpha in password        | Indicates the minimum number of alphabetic characters in a password.                                                                                                                                                                               |
| min special char in password | Indicates the minimum number of special characters allowed in a password.                                                                                                                                                                          |



| Option                         | Description                                                                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| min upper char in password     | Indicates the minimum number of upper-case characters allowed in a password.                                                                               |
| min lower char in password     | Indicates the minimum number of lower case characters allowed in a password.                                                                               |
| systemwide password expiration | Indicates the system-wide password expiration in days.                                                                                                     |
| password exp warn interval     | Indicates the password expiration warning interval in days.                                                                                                |
| minimum password length        | Sets the minimum length of the password.                                                                                                                   |
| maximum failed logins          | Sets the maximum number of failed logins allowed in a session before the account is locked.                                                                |
| expire login                   | Specifies that a login status changes to expired status when you create or reset your login. You are required to change your password on your first login. |

"enable last login updates"

enables or disables code in Adaptive Server authentication that records the timestamp when each login occurs. The first parameter "set" sets the value of this attribute. The parameter "list" displays the current value of the attribute, and the parameter "clear" deletes the row from sysattributes. On upgrade or new installation, this attribute does not exist in sysattributes. The login timestamp occurs when the attribute row does not exist or has a value of 1. The login timestamp is not maintained if the attribute value is 0.

"expire login passwords", "[login\_name | wildcard]"

expires login passwords, all logins or logins matching a wild card pattern. The column status in master database catalog syslogins is updated with a status bit LOGIN\_EXPIRED (0x4) to indicate the password is expired.

"expire role passwords", "[rolename | wildcard]"

expires the password of a role, all roles or roles matching a wild-card pattern. The column status in master database catalog sysssrvroles is updated with a status bit ROLE\_EXPIRED (0x4) to indicate the password is expired:

"expire stale login passwords", "datetime"

expires login passwords have not been changed after a datetime specified. The column status in master database catalog syslogins is updated with a status bit LOGIN\_EXPIRED (0x0004) to indicate that the password is expired. See "Entering Date and Time Data" in Adaptive Server 15.0 *Reference Manual: Building Blocks*, Chapter 1, "System and User Defined Datatypes" for an explanation of how datetime values are entered.

"expire stale role passwords", "datetime"

expires role passwords have not been changed after a datetime specified. The column status in master database catalog sysssrvroles is updated with a status bit ROLE\_EXPIRED (0x4) to indicate the password is expired.

"regenerate keypair"

generates the asymmetric key pairs to be used for network login password encryption. There is no catalog update for this option; the actions occur only in memory fields.

'validate password options'

reports errors or inconsistencies in the password complexity option values set, including length and expiration. The result is reported in a tabular format, with each row representing a validation step, the result of the step, and the validation test performed. The result is one of Pass, Fail, or Not Applicable (NA). If any validation test fails, the return status is set to 1.

Examples

**Example 1** Sets a password expiration warning interval to seven days before the password expires:

```
sp_passwordpolicy 'set',
    'password exp warn interval', 7
```

**Example 2** Lists the option for minimum number of special characters:

```
sp_passwordpolicy 'list',
    'min special char in password'
```

**Example 3** Resets disallow simple passwords to the default value:

```
sp_passwordpolicy 'clear', 'disallow simple passwords'
```

**Example 4** These examples demonstrate using validate password options. These outputs have been reformatted for clarity, and do not resemble the output you see on your screen if you execute this procedure

- These password complexity options and their values are stored in the server:

```
minimum password length:      8
min alpha in password:        2
min digits in password:       2
min upper char in password:    2
min lower char in password:    2
```

To validate these options, enter:

```
sp_passwordpolicy 'validate password options'
```

| Validation Step       | Pass/Fail/NA | Validation Test                                                                        |
|-----------------------|--------------|----------------------------------------------------------------------------------------|
| -----                 | -----        | -----                                                                                  |
| min alpha in password | Fail         | 'min alpha in password' > = 'min upper char in password + 'min lower char in password' |

```

minimum password length - 1    Pass    'minimum password length' > = 'min
                                digits in password' + 'min special
                                char in password' + 'min alpha in
                                password'

minimum password length - 2    Pass    'minimum password length' > = 'min
                                digits in password' + min special
                                char in password' + 'min upper
                                char in password' + 'min lower
                                char in password'

maximum password length - 1    Pass    'max password length' > = 'min
                                digits in password' + 'min
                                special char in password' + 'min
                                alpha in password'

maximum password length - 2    Pass    'max password length' > = 'min
                                digits in password' + 'min special
                                char in password' + 'min upper
                                char in password' + 'min lower
                                char in password'

password exp warn interval     NA     'password exp warn interval' < =
                                'systemwide password expiration'

```

```

(6 rows affected)
(return status = 1)

```

There is one failure: The sum of min upper char in password + min lower char in password is greater than the value of min alpha in password, so the validation step min alpha in password fails.

**Example 5** Validating the following options stored in Adaptive Server:

```

minimum password length:      8
min digits in password:       2
min special char in password: 2
min alpha in password:        6
min upper char in password:   3
min lower char in password:   3

```

```
sp_passwordpolicy 'validate password options'
```

| Validation Step           | Pass/Fail/NA | Validation Test                                                                                                   |
|---------------------------|--------------|-------------------------------------------------------------------------------------------------------------------|
| min alpha in password     | Pass         | 'min alpha in password' > = 'min upper char in password' + 'min lower char in password'                           |
| minimum password length-1 | Fail         | 'minimum password length' > = 'min digits in password' + 'min special char in password' + 'min alpha in password' |

```

password'

minimum password length-2      Fail      'minimum password length' > = 'min
                                digits in password' + 'min special
                                char in password' + 'min upper
                                char in password' + 'min lower
                                char in password'

maximum password length-1      Pass      'max password length' > = 'min
                                digits in password' + 'min special
                                char in password' + 'min alpha in
                                password'

maximum password length-2      Pass      'max password length' > = 'min
                                digits in password' + 'min
                                special char in password' + 'min
                                upper char in password' + 'min
                                lower char in password'

password exp warn interval      NA        'password exp warn interval' < =
                                'systemwide password expiration'

(6 rows affected)
(return status = 1)

```

There are two failures in step 2 and step 3.

The sum of min digits in password, min special char in password and min alpha in password is greater than the value of minimum password length, so the validation step minimum password length -1 fails. The sum of min digits in password, min special char in password, min upper char in password and min lower char in password is greater than the value of minimum password length, so the validation step minimum password length -2 fails.

**Example 6** The following examples illustrate the option 'validate password options'. The outputs have been reformatted for clarity, and do not resemble the output you see on your screen when you execute this procedure.

These password complexity options and their values are stored in the server:

```

minimum password length:      8
min alpha in password:        2
min digits in password:       2
min upper char in password:   2
min lower char in password:   2

```

- To validate these options, enter:

```

sp_passwordpolicy 'validate password options'
Validation Step      Pass/Fail/NA      Validation Test
-----

```

```

min alpha in password          Fail      'min alpha in password' > = 'min
upper char in password' + 'min
lower char in password'

minimum password length - 1    Pass      'minimum password length' > = 'min
digits in password' + 'min special
char in password' + 'min alpha in
password'

minimum password length - 2    Pass      'minimum password length' > = 'min
digits in password' + min special
char in password' + 'min upper
char in password' + 'min lower
char in password'

maximum password length - 1    Pass      'max password length' > = 'min
digits in password' + 'min
special char in password' + 'min
alpha in password'

maximum password length - 2    Pass      'max password length' > = 'min
digits in password' + 'min special
char in password' + 'min upper
char in password' + 'min lower
char in password'

password exp warn interval     NA        'password exp warn interval' < =
'systemwide password expiration'

```

```

(6 rows affected)
(return status = 1)

```

There is one failure: the sum of min upper char in password + min lower char in password is greater than the value of min alpha in password, so the validation step min alpha in password fails.

- Validating the following options stored in Adaptive Server:

```

minimum password length:      8
min digits in password:       2
min special char in password:  2
min alpha in password:        6
min upper char in password:    3
min lower char in password:    3

```

```

sp_passwordpolicy 'validate password options'
Validation Step      Pass/Fail/NA      Validation Test
-----
min alpha in password      Pass              'min alpha in password' > = 'min upper
char in password' + 'min lower
char in password'

```

|                            |      |                                                                                                                                                       |
|----------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum password length-1  | Fail | 'minimum password length' > = 'min digits in password' + 'min special char in password' + 'min alpha in password'                                     |
| minimum password length-2  | Fail | 'minimum password length' > = 'min digits in password' + 'min special char in password' + 'min upper char in password' + 'min lower char in password' |
| maximum password length-1  | Pass | 'max password length' > = 'min digits in password' + 'min special char in password' + 'min alpha in password'                                         |
| maximum password length-2  | Pass | 'max password length' > = 'min digits in password' + 'min special char in password' + 'min upper char in password' + 'min lower char in password'     |
| password exp warn interval | NA   | 'password exp warn interval' < = 'systemwide password expiration'                                                                                     |

(6 rows affected)  
(return status = 1)

There are two failures in step 2 and step 3.

The sum of min digits in password, min special char in password and min alpha in password is greater than the value of minimum password length, so the validation step minimum password length -1 fails. The sum of min digits in password, min special char in password, min upper char in password and min lower char in password is greater than the value of minimum password length, so the validation step minimum password length -2 fails.

- Validating the following options stored in Adaptive Server:

```

minimum password length:      8
min digits in password:      11
min special char in password: 11
min alpha in password:       11
min upper char in password:   1
min lower char in password:   1
    
```

```
sp_passwordpolicy 'validate password options'
```

| Validation Step | Pass/Fail/NA | Validation Test |
|-----------------|--------------|-----------------|
| -----           | -----        | -----           |

|                            |      |                                                                                                                                                       |
|----------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| min alpha in password      | Pass | 'min alpha in password' > = 'min upper char in password' + 'min lower char in password'                                                               |
| minimum password length-1  | Fail | 'minimum password length' > = 'min digits in password' + 'min special char in password' + 'min alpha in password'                                     |
| minimum password length-2  | Fail | 'minimum password length' > = 'min digits in password' + 'min special char in password' + 'min upper char in password' + 'min lower char in password' |
| maximum password length-1  | Fail | 'max password length' > = 'min digits in password' + 'min special char in password' + 'min alpha in password'                                         |
| maximum password length-2  | Pass | 'max password length' > = 'min digits in password' + 'min special char in password' + 'min upper char in password' + 'min lower char in password'     |
| password exp warn interval | NA   | 'password exp warn interval' < = 'systemwide password expiration'                                                                                     |

(6 rows affected)  
(return status = 1)

There are 3 failures, including a serious one, a failure in a test for maximum password length, where the sum of the required password components is greater than the maximum password allowed.

- Validating the following options stored in Adaptive Server:

```

minimum password length:      8
min digits in password:       2
min special char in password: 1
min alpha in password:        4
min upper char in password:   0
min lower char in password:   0

```

sp\_passwordpolicy 'validate password options'

| Validation Step   | Pass/Fail/NA | Validation Test                  |
|-------------------|--------------|----------------------------------|
| -----             | -----        | -----min                         |
| alpha in password | Pass         | 'min alpha in password' > = 'min |

```

upper char in password' + 'min
lower char in password'

minimum password length-1 Pass      'minimum password length' > =
                                     'min digits in password' + 'min
                                     special char in password' +
                                     'min alpha in password'

minimum password length-2 Pass      'minimum password length' > =
                                     'min digits in password' + 'min
                                     special char in password' +
                                     'min upper char in password' +
                                     'min lower char in password'

maximum password length-1 Pass      'max password length' > = 'min
                                     digits in password' + 'min
                                     special char in password' + 'min
                                     min alpha in password'

maximum password length-2 Pass      'max password length' > = 'min
                                     digits in password' + 'min
                                     special char in password' + 'min
                                     upper char in password' + 'min
                                     lower char in password'

password exp warn interval  NA      'password exp warn interval' < =
                                     'systemwide password expiration'

```

```

(6 rows affected)
(return status = 0)

```

There are no failures with these settings. This reports all 5 rows returned, and a return status of 0.

**Usage** sp\_passwordpolicy information is stored in the master.dbo.sysattributes table.

**Auditing** The set and clear commands in sp\_passwordpolicy are audited through audit event 115, “Password Administration.”

A audit option “password” audits these actions.

- sp\_passwordpolicy 'set', 'option\_name', 'option\_value'
- sp\_passwordpolicy 'clear', 'option\_name'
- sp\_passwordpolicy 'expire login passwords'
- sp\_passwordpolicy 'expire stale login passwords'
- sp\_passwordpolicy 'regenerate keypair'
- sp\_passwordpolicy 'expire role passwords'



- `sp_passwordpolicy 'expire stale role passwords'`

## sp\_pciconfig

**Description** Manages the Java PCI Bridge. Enables or disables arguments and directives, changes configuration values, and reports configuration values.

---

**Note** Do not use sp\_pciconfig to change arguments or directives unless instructed to do so by Sybase Technical Support.

---

**Syntax**

```
sp_pciconfig {
    disable { directive | argument } |
    enable { directive | argument } |
    list { list_type [, formatted ] | units | units, units_type [, formatted ] } |
    report { directive [, formatted ] |
        directive, args [, formatted ] |
        argument [, formatted ] } |
    update { number_arg, old_value new_value }
```

**Parameters**

**disable**  
disables the specified directive or argument.

*directive*  
is the name of any valid directive.

*argument*  
is the name of any valid argument.

**enable**  
enables a specified directive or argument.

**list**  
lists groups of related arguments as, for example, sp\_pciconfig "list", "directive" or sp\_pceiconfig "list", "enabled". Also, lists all arguments of a specific type as, for example, sp\_pciconfig "list", "units", "switch".

*list\_type*  
specifies a type of list. Values are:

- directives – list of directives
- enabled – list of enabled arguments
- disabled – list of disabled arguments
- argnames – list of argument names

formatted

specifies that displayed list is to be formatted for readability.

---

**Note** In formatted reports, the process of improving readability may result in the truncation of wide columns. In addition, column headings may be overridden and may not match the actual table column name. Do not format reports if the output will be parsed or potential data truncation is not acceptable.

---

units

when used with list, generates a list of *units\_type* currently in use.

report

creates a report based on arguments supplied. Usually used to generate a report for an argument to see its current value and whether or not it is enabled. Can also be used to generate a report for a directive or its arguments.

*directive*

specifies all arguments within a specified directive.

update

modifies the numeric value of arguments where units = number. Cannot be used with arguments where units = switch.

*number\_arg*

is an argument of units = number.

*old\_value*

is the current value for *number\_arg\_name*.

*new\_value*

is a new value for *number\_arg\_name*.

## Usage

Enabling and disabling a directive works like a toggle:

- *When a directive is enabled*– Adaptive Server uses the configured value (enabled or disabled) of each argument. This is the value stored in sybpcidb.
- *When a directive is disabled* – Adaptive Server disregards the configured value (enabled or disabled) of each argument and treats all arguments of the directive as disabled, although the base value of each argument is retained in sybpcidb.

Arguments can be individually enabled or disabled. Arguments for sp\_pciconfig directives are of these types:

- *switch* – these arguments turn a feature on or off. For example, if the argument for logging is enabled, a log file is generated; if the argument for logging is disabled, no log file is generated.
- *string* – these arguments are for strings and numbers, which are treated like strings. Enabling a string argument ensures that Adaptive Server uses the configured value. Disabling a string argument means that Adaptive Server ignores the configured value and uses the default value. The configured and default values may be the same or different.

**Table 1-32: Configuration directives for sp\_pciconfig**

| Directive         | Description                             |
|-------------------|-----------------------------------------|
| PCI_BRIDGE_X_OPT  | The PCI Bridge configuration parameters |
| PCI_BRIDGE_LOGOPT | The plug-in diagserver report facility  |
| PCI_BRIDGE_INSTR  | The PCI Bridge instrumentation settings |

**Table 1-33: PCI\_BRIDGE\_X\_OPT arguments**

| Argument                      | Units type | Default value | Default state | Description                                                                                         |
|-------------------------------|------------|---------------|---------------|-----------------------------------------------------------------------------------------------------|
| pci_xopt_maxthreads           | number     | 1056          | Enabled       | Maximum available PCI Bridge PLB-controlled threads.                                                |
| pci_xopt_event_scheduling     | number     | 0             | Enabled       | Default PCI Bridge scheduling.                                                                      |
| pci_xopt_failover_engine      | number     | -1            | Enabled       | Default engine to which a slot should fail over.                                                    |
| pci_xopt_runtime_alloc_escape | number     | 1             | Enabled       | Allow runtime escapes on memory allocation requests above PC Bridge maximum memory allocation unit. |
| pci_xopt_slotring_cycle       | number     | -1            | Enabled       | Disable PCI Bridge slotring washing.                                                                |
| pci_xopt_slotring_wash_th     | number     | 76            | Enabled       | Default PCI Bridge slotring washing threshold percentage.                                           |

**Table 1-34: PCI\_BRIDGE\_LOGOPT arguments**

| Argument           | Units type | Default value | Default state | Description                                     |
|--------------------|------------|---------------|---------------|-------------------------------------------------|
| pci_logopt_asehi   | switch     | None          | Disabled      | PCI Bridge ASE host interface dispatch logging. |
| pci_logopt_jst     | switch     | None          | Disabled      | PCI Bridge Job Scheduler task dispatch logging. |
| pci_logopt_jvm     | switch     | None          | Disabled      | PCI Bridge JVM dispatch logging.                |
| pci_logopt_omni    | switch     | None          | Disabled      | PCI Bridge OMNI dispatch logging.               |
| pci_logopt_pci     | switch     | None          | Disabled      | Generic PCI Bridge logging (probe [pci/pca]).   |
| pci_logopt_runtime | switch     | None          | Disabled      | PCI Bridge runtime dispatch logging.            |
| pci_logopt_xml     | switch     | None          | Disabled      | PCI Bridge XML dispatch logging.                |

**Table 1-35: PCI\_BRIDGE\_INSTR arguments**

| Argument        | Units type | Default value | Default state | Description                                    |
|-----------------|------------|---------------|---------------|------------------------------------------------|
| BRIDGE          | number     | 1             | Disabled      | Forces full instrumentation (noisy).           |
| CELL            | number     | 1             | Disabled      | Forces all CELL synchronization to Report.     |
| JAVA            | number     | 1             | Disabled      | Forces all Java-related entries to Report.     |
| JCS             | number     | 1             | Disabled      | Forces all JCS entries to Report.              |
| JDBC            | number     | 1             | Disabled      | Forces all JDBC entries to Report.             |
| JVMHOST         | number     | 1             | Disabled      | Forces all ASE JVM host API entries to Report. |
| JVMJNI          | number     | 1             | Disabled      | Forces all JVM JNI external extrics to Report. |
| PCIS            | number     | 1             | Disabled      | Forces all PCI Service code to Report.         |
| PLB             | number     | 1             | Disabled      | Forces all PLB code to Report.                 |
| SLOTRING        | number     | 1             | Disabled      | Forces all “slot-ring” code to Report.         |
| SYNC            | number     | 1             | Disabled      | Forces all SYNChronization code to Report.     |
| TPM             | number     | 1             | Disabled      | Forces all TPM code to Report.                 |
| fetch_classdata | number     | 1             | Enabled       | Forces all fetch_classdata hits to Report.     |
| pcis_service    | number     | 2             | Disabled      | Forces all pcis_service hits to Freeze.        |

**Permissions** Only a System Administrator can execute sp\_pciconfig to change the settings of the PCI subsystem.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Stored procedures** sp\_jreconfig

## sp\_placeobject

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Puts future space allocations for a table or index on a particular segment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | <code>sp_placeobject <i>segname</i>, <i>objname</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Parameters  | <p><i>segname</i><br/>is the name of the segment on which to locate the table or index.</p> <p><i>objname</i><br/>is the name of the table or index for which to place subsequent space allocation on the segment <i>segname</i>. Specify index names in the form “<i>tablename.indexname</i>”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Examples    | <p><b>Example 1</b> This places all subsequent space allocation for the table authors on the segment named “segment3”:</p> <pre>sp_placeobject segment3, authors</pre> <p><b>Example 2</b> This command places all subsequent space allocation for the employee table’s index named employee_nc on the segment named indexes:</p> <pre>sp_placeobject indexes, 'employee.employee_nc'</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Usage       | <ul style="list-style-type: none"><li>• You cannot change the location of future space allocations for system tables.</li><li>• Placing a table or an index on a particular segment does not affect the location of any existing table or index data. It affects only future space allocation. This include all existing partitions in the table/index and any new partitions added later if no segment is specified for a new partition. Changing the segment used by a table or an index can spread the data among multiple segments.</li><li>• If you use sp_placeobject with a clustered index, the table moves with the index.</li><li>• You can specify a segment when you create a table or an index with create table or create index. You can also specify a segment at the partition level as part of a partition definition. Partitions without segment specification uses the segment specified at the table/index level. If no segment is specified for the table/index level, the data goes on the default segment.</li><li>• When sp_placeobject splits a table or an index across more than one disk fragment, the diagnostic command dbcc displays messages about the data that resides on the fragments that were in use for storage before sp_placeobject executed. Ignore those messages.</li></ul> |
| Permissions | Only the table owner, Database Owner, or System Administrator can execute sp_placeobject.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## See also

**Commands** alter table, dbcc

**System procedures** sp\_addsegment, sp\_dropsegment, sp\_extendsegment, sp\_helpindex, sp\_helpsegment

## sp\_plan\_dbccdb

**Description** Recommends suitable sizes for new dbccdb and dbccalt databases, lists suitable devices for dbccdb and dbccalt, and suggests a cache size and a suitable number of worker processes for the target database.

**Syntax** sp\_plan\_dbccdb [*dbname*]

**Parameters** *dbname*  
 specifies the name of the target database. If *dbname* is not specified, sp\_plan\_dbccdb makes recommendations for all databases in master.sysdatabases.

**Examples** **Example 1** Returns configuration recommendations for creating a dbccdb database suitable for checking the master database. The dbccdb database already existed at the time this command was run, so the size of the existing database is provided for comparison:

```
sp_plan_dbccdb master
Recommended size for dbccdb database is 50MB (data = 48MB, log = 2MB).
dbccdb database already exists with size 280MB.
Recommended values for workspace size, cache size and process count are:
dbname          scan ws  text ws  cache  comp mem  process count
master          128K    48K     640K   0K       1
```

**Example 2** Returns configuration recommendations for creating a dbccdb database suitable for checking all databases in the server. The output includes Compression Memory Requirement, which has a non-zero value only for archive databases using any compressed device. No dbccdb database existed at the time this command was run:

```
sp_plan_dbccdb
Recommended size for dbccdb database is 50MB (data = 48MB, log = 2MB).
dbccdb database already exists with size 280MB.
Recommended values for workspace size, cache size and process count are:
dbname          scan ws  text ws  cache  comp mem  process count
master          128K    48K     640K   0K       1
tempdb         656K   176K   1280K   0K       2
model          64K     48K     640K   0K       1
sybssystemdb    64K     48K     640K   0K       1
sybssystemprocs 1488K   384K     640K   0K       1
sybsecurity    272K    80K    1280K   0K       2
adb            80K     64K    1920K  12M       3
```



**Example 3** Returns configuration recommendations for creating a dbccdb database suitable for checking pubs2:

```
sp_plan_dbccdb pubs2
```

Recommended size for dbccdb is 4MB.

Recommended devices for dbccdb are:

| Logical Device Name | Device Size | Physical Device Name                  |
|---------------------|-------------|---------------------------------------|
| sprocdev            | 28672       | /remote/sybase/devices/srv_sprocs_dat |
| tun_dat             | 8192        | /remote/sybase/devices/srv_tun_dat    |
| tun_log             | 4096        | /remote/sybase/devices/srv_tun_log    |

Recommended values for workspace size, cache size and process count are:

| dbname | scan ws | text ws | cache | process count |
|--------|---------|---------|-------|---------------|
| pubs2  | 64K     | 64K     | 640K  | 1             |

#### Usage

- `sp_plan_dbccdb` recommends suitable sizes for creating new dbccdb and dbccalt databases, lists suitable devices for the new database, and suggests cache size and a suitable number of worker processes for the target database.
- If you specify dbccdb, `sp_plan_dbccdb` recommends values for dbccalt, the alternate database. If you specify dbccalt, `sp_plan_dbccdb` recommends values for dbccdb.
- `sp_plan_dbccdb` does not report values for existing dbccdb and dbccalt databases. To gather configuration parameters for an existing dbccdb or dbccalt database, use `sp_dbcc_evaluatedb`.
- For information on the dbcc stored procedures for maintaining dbccdb and for generating reports from dbccdb, see Chapter 4, “dbcc Stored Procedures.”

#### Permissions

Only the System Administrator or Database Owner can execute `sp_plan_dbccdb`. Only the System Administrator can execute `sp_plan_dbccdb` without specifying a database name.

#### Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** dbcc

**System procedures** sp\_dbcc\_evaluatedb

## sp\_poolconfig

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Creates, drops, resizes, and provides information about memory pools within data caches.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <p>To create a memory pool in an existing cache, or to change pool size:</p> <pre>sp_poolconfig cache_name[, "mem_size [P   K   M   G]", "config_poolK" [, "affected_pool K"], instance instance_name]</pre> <p>To change a pool's wash size:</p> <pre>sp_poolconfig cache_name, "affected_poolK", "wash=size[P K M G]"</pre> <p>To change a pool's asynchronous prefetch percentage:</p> <pre>sp_poolconfig cache_name, "affected_poolK", "local async prefetch limit=percent "</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>cache_name</i><br/>is the name of an existing data cache.</p> <p><i>mem_size</i><br/>is the size of the memory pool to be created or the new total size for an existing pool with the specified I/O size. The minimum size of a pool is 256 logical server pages. For a 2K logical page size server, the minimum size is 256K. Specify size units with P for pages, K for kilobytes, M for megabytes, or G for gigabytes. The default is kilobytes.</p> <p><i>config_pool</i><br/>is the I/O size performed in the memory pool where the memory is to be allocated or removed.</p> <p>Valid I/O sizes are multiples of the logical page size, up to four times the amount.</p> <p><i>affected_pool</i><br/>is the size of I/O performed in the memory pool where the memory is to be deallocated, or the pools attributes such as 'wash size' and 'prefetch limit' are to be modified. If <i>affected_pool</i> is not specified, the memory is taken from the lowest logical page size memory pool.</p> <p><i>instance_name</i><br/><i>in cluster environments</i> – is the name of the instance whose buffer pool you are adjusting.</p> <p><i>wash=size</i><br/>Changes the wash size (the point in the cache at which Adaptive Server writes dirty pages to disk) for a memory pool.</p> |

local async prefetch limit=*percent*

sets the percentage of buffers in the pool that can be used to hold buffers that have been read into cache by asynchronous prefetch, but that have not yet been used. Valid values are 0–100. Setting the prefetch limit to 0 disables asynchronous prefetching in a pool.

## Examples

**Example 1** Creates a 16K pool in the data cache pub\_cache with 10MB of space. All space is taken from the default 2K memory pool:

```
sp_poolconfig pub_cache, "10M", "16K"
```

**Example 2** Creates 16MB of space to the 32K pool from the 64K pool of pub\_cache:

```
sp_poolconfig pub_cache, "16M", "32K", "64K"
```

**Example 3** Reports the current configuration of pub\_cache:

```
sp_poolconfig "pub_cache"
```

**Example 4** Removes the 16K memory pool from pub\_cache, placing all of the memory assigned to it in the 2K pool:

```
sp_poolconfig pub_cache, "0K", "16K"
```

**Example 5** Changes the wash size of the 2K pool in pubs\_cache to 508K:

```
sp_poolconfig pub_cache, "2K", "wash=508K"
```

**Example 6** Changes the asynchronous prefetch limit for the 2K pool to 15 percent:

```
sp_poolconfig pub_cache, "2K", "local async prefetch limit=15"
```

**Example 7** *In cluster environments* – Creates a 16KB buffer pool of size 25MB in the default data cache on instance blade1:

```
sp_poolconfig 'default data cache', '25M', '16K', 'instance blade1'
```

**Example 8** *In cluster environments* – displays the buffer pool configuration in the default data cache on instance blade1:

```
sp_poolconfig 'default data cache', 'instance blade1'
```

**Example 9** *In cluster environments* – displays the buffer pool configuration for named cache c\_log on all instances in the cluster:

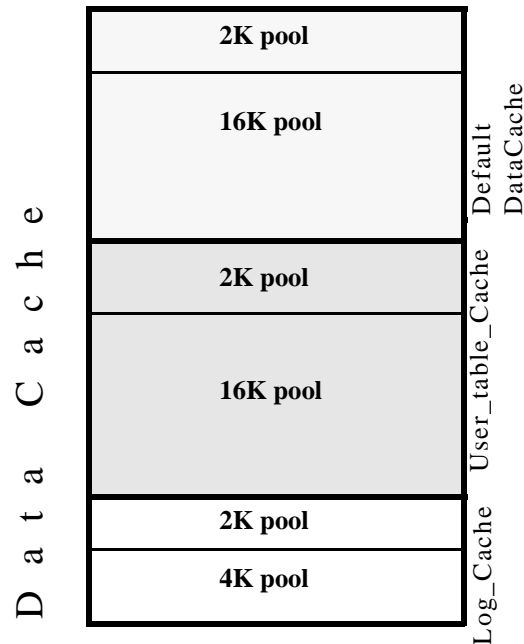
```
sp_poolconfig c_log
```

## Usage

- When you create a data cache with sp\_cacheconfig, all space is allocated to the logical page size memory pool. sp\_poolconfig divides the data cache into additional pools with larger I/O sizes.

- If no large I/O memory pools exist in a cache, Adaptive Server performs I/O in logical page size units, the size of a data page, for all of the objects bound to the cache. You can often enhance performance by configuring pools that perform large I/O. A 16K memory pool reads and writes eight data pages in a single I/O for a 2K logical page size server.
- The combination of cache name and I/O size must be unique. In other words, you can specify only one pool of a given I/O size in a particular data cache in `sp_poolconfig` commands.
- Only one `sp_poolconfig` command can be active on a single cache at one time. If a second `sp_poolconfig` command is issued before the first one completes, it sleeps until the first command completes.
- Figure 1-3 shows a data cache on a server that uses 2K logical pages with:
  - The default data cache with a 2K pool and a 16K pool
  - A user cache with a 2K pool and a 16K pool
  - A log cache with a 2K pool and a 4K pool

**Figure 1-3: Data cache with default and user-defined caches**



- You can create pools with I/O sizes up to 16K in the default data cache for a 2K page size server.
- The minimum size of a memory pool is 256 logical pages (for example, a 2K logical page size server, the minimum size is 512K). You cannot reduce the size of any memory pool in any cache to less than 256 pages by transferring memory to another pool.
- Two circumstances can create pool less than 512K:
  - If you attempt to delete a pool by setting its size to zero, and some of the pages are in use, sp\_poolconfig reduces the pool size as much as possible, and prints a warning message. The status for the pool is set to “Unavailable/deleted”.
  - If you attempt to move buffers to create a new pool, and enough buffers cannot be moved to the new pool, sp\_poolconfig moves as many buffers as it can, and the cache status is set to “Unavailable/too small.”

In both of these cases, you can retry to command at a later time. The pool will also be deleted or be changed to the desired size when the server is restarted.

- You can create memory pools while Adaptive Server is active; no restart is needed for them to take effect. However, Adaptive Server can move only “free” buffers (buffers that are not in use or that do not contain changes that have not been written to disk). When you configure a pool or change its size, Adaptive Server moves as much memory as possible to the pool and prints an informational message showing the requested size and the actual size of the pool. After a restart of Adaptive Server, all pools are created at the configured size.
- Some dbcc commands and drop table perform only logical page size I/O. dbcc checkstorage can perform large I/O, and dbcc checkdb performs large I/O on tables and logical page size I/O on indexes.
- Most Adaptive Servers perform best with I/O configured for transactions logs that is twice the logical page size. Adaptive Server uses the default I/O size of twice the logical page size if the default cache or a cache with a transaction log bound to it is configured with a memory pool twice the logical page size. Otherwise, it uses the logical page size memory pool.
- You can increase the default log I/O size for a database using the sp\_logiosize system procedure. However, the I/O size you specify must have memory pools of the same size in the cache bound to the transaction log. If not, Adaptive Server uses the logical page size memory pools.

#### Wash percentage

- The default value for the wash size is computed as follows:
  - If the pool size is less than 300MB, the default wash size is set to 20 percent of the buffers in the pool
  - If the pool size is greater than 300MB, the default wash size is 20 percent of the number of buffers in 300MB
- The minimum setting for the wash size is 10 buffers, and the maximum setting is 80 percent of the size of the pool.
- Each memory pool contains a wash area at the least recently used (LRU) end of the chain of buffers in that pool. Once dirty pages (pages that have been changed while in cache) move into the wash area, Adaptive Server initiates asynchronous writes on these pages. The wash area must be large enough so that pages can be written to disk before they reach the LRU end of the pool. Performance suffers when Adaptive Server needs to wait for clean buffers.

The default percentage, placing 20 percent of the buffers in the wash area, is sufficient for most applications. If you are using an extremely large memory pool, and your applications have a very high data modification rate, you may want to increase the size to 1 or 2 percent of the pool. Run sp\_sysmon to look for recommendations, or contact Sybase Technical Support for more information about choosing an effective wash size.

Local asynchronous prefetch percentage

- The default value for a pool’s asynchronous prefetch percentage is set by the configuration parameter global async prefetch limit. The pool limit always overrides the global limit.
- To disable prefetch in a pool (if the global limit is a nonzero number), set the pool’s limit to 0.
- See the *Performance and Tuning Guide* for information on the performance impact of changes to the asynchronous prefetch limit.

Permissions

Only a System Administrator can execute sp\_poolconfig to reconfigure memory pools within data caches. Any user can use sp\_poolconfig to get information about memory pools.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_cacheconfig, sp\_helpcache, sp\_logiosize, sp\_unbindcache, sp\_unbindcache\_all



## sp\_post\_xpload

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Checks and rebuilds indexes after a cross-platform load database where the endian types are different.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax      | sp_post_xpload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Examples    | Once database is loaded from another platform, rebuild its indexes by executing:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|             | <pre>sp_post_xpload</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"> <li>• The following indexes are rebuilt on all user tables in the database: <ul style="list-style-type: none"> <li>• Nonclustered index on an APL table</li> <li>• Clustered index on a DOL table</li> <li>• Nonclustered index on a DOL table</li> </ul> </li> <li>• Indexes on system tables are not processed with sp_post_xpload only. System table indexes are rebuilt when online database is executed.</li> <li>• You can also rebuild indexes using drop index and create index.</li> <li>• Run sp_post_xpload only when the database is loaded across platforms with different endian types.</li> <li>• Where the index status is suspect, reset the index by executing sp_xpload, drop index, or create index.</li> <li>• Stored procedures are recompiled from the SQL text in syscomments at the first execution after the load database. Use dbcc upgrade_object to upgrade objects if you do not have permission to recompile from text.</li> </ul> <p><i>Handling suspect partitions in cross-platform dump and load operations</i></p> <ul style="list-style-type: none"> <li>• During the first online database command, after you execute load database across two platforms with different endian types, the hash partition is marked suspect.</li> <li>• Any global clustered index on a round-robin partition, which has an internally generated partition condition with a unichar or univarchar partition key, is marked suspect.</li> <li>• After the database is online, use sp_post_xpload to fix the suspect partitions and indexes.</li> </ul> |
| Permissions | Can only be executed by the System Administrator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also                      dump database, load database

## sp\_primarykey

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Defines a primary key on a table or view.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | <code>sp_primarykey <i>tablename</i>, <i>col1</i> [, <i>col2</i>, <i>col3</i>, ..., <i>col8</i>]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>tablename</i><br/>is the name of the table or view on which to define the primary key.</p> <p><i>col1</i><br/>is the name of the first column that makes up the primary key. The primary key can consist of from one to eight columns.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Examples    | <p><b>Example 1</b> Defines the <code>au_id</code> field as the primary key of the table <code>authors</code>:</p> <pre>sp_primarykey authors, au_id</pre> <p><b>Example 2</b> Defines the combination of the fields <code>lastname</code> and <code>firstname</code> as the primary key of the table <code>employees</code>:</p> <pre>sp_primarykey employees, lastname, firstname</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"> <li>• Executing <code>sp_primarykey</code> adds the key to the <code>syskeys</code> table. Only the owner of a table or view can define its primary key. <code>sp_primarykey</code> does not enforce referential integrity constraints; use the primary key clause of the <code>create table</code> or <code>alter table</code> command to enforce a primary key relationship.</li> <li>• Define keys with <code>sp_primarykey</code>, <code>sp_commonkey</code>, and <code>sp_foreignkey</code> to make explicit a logical relationship that is implicit in your database design. An application program can use the information.</li> <li>• A table or view can have only one primary key. To display a report on the keys that have been defined, execute <code>sp_helpkey</code>.</li> <li>• The installation process runs <code>sp_primarykey</code> on the appropriate columns of the system tables.</li> </ul> |
| Permissions | Only the owner of the specified table or view can execute <code>sp_primarykey</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Auditing    | Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** alter table, create table, create trigger

**System procedures** sp\_commonkey, sp\_dropkey, sp\_foreignkey, sp\_helpjoins, sp\_helpkey

## sp\_processmail

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Reads, processes, sends, and deletes messages in the Adaptive Server message inbox, using the <code>xp_findnextmsg</code> , <code>xp_readmail</code> , <code>xp_sendmail</code> , and <code>xp_deletemail</code> system extended stored procedures (ESPs).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>sp_processmail [subject] [, originator [, dbuser<br/>[, dbname [, filetype [, separator]]]]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>subject</i><br/>is the subject header of the message. If you specify a <i>subject</i> but not an <i>originator</i>, <code>sp_processmail</code> processes all unread messages in the inbox that has the specified subject header. If you specify both <i>subject</i> and <i>originator</i>, <code>sp_processmail</code> processes all unread messages with the specified subject header sent by the specified originator. If you do not specify either <i>subject</i> or <i>originator</i>, <code>sp_processmail</code> processes all the unread messages in the Adaptive Server message inbox.</p> <p><i>originator</i><br/>is the sender of an incoming message. If you specify an <i>originator</i> and do not specify a <i>subject</i>, <code>sp_processmail</code> processes all unread messages in the inbox sent by the specified originator.</p> <p><i>dbuser</i><br/>specifies the Adaptive Server login name to use for the user context for executing the query in the message. The default is “guest.”</p> <p><i>dbname</i><br/>specifies the database name to use for the database context for executing the query in the message. The default is “master.”</p> <p><i>filetype</i><br/>specifies the file extension of the attached file that contains the results of the query. The default is “.txt”.</p> <p><i>separator</i><br/>specifies the character to use as a column separator in the query results. It is the same as the <code>/s</code> option of <code>isql</code>. The default is the tab character.</p> |
| Examples    | <p><b>Example 1</b> Processes all unread messages in the Adaptive Server inbox with the subject header “SQL Report” submitted by mail user “janet”, processes the received queries in the <code>salesdb</code> database as user “sa”, and returns the query results to “janet” in a <code>.res</code> file attached to the mail message. The columns in the returned results are separated by semicolons:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

```
sp_processmail @subject="SQL REPORT", @originator="janet", @dbuser="sa",
  @dbname="salesdb", @filetype="res", @separator=";"
```

**Example 2** Processes all unread messages in the Adaptive Server inbox as user “sa” in the master database and returns the query results in *.txt* files, which are attached to the mail messages. The columns in the returned results are separated by tab characters:

```
sp_processmail @dbuser="sa"
```

Usage

- sp\_processmail reads, processes, sends, and deletes messages in the Adaptive Server message inbox, using the xp\_findnextmsg, xp\_readmail, xp\_sendmail, and xp\_deletemail system ESPs.
- sp\_processmail sends outgoing mail to the originator of the incoming mail message being processed.
- sp\_processmail uses the default parameters when invoking the ESPs, except for the *dbuser*, *dbname*, *attachname*, and *separator* parameters to xp\_sendmail, which can be overridden by the parameters to sp\_processmail.
- sp\_processmail processes all messages as Adaptive Server queries. It reads messages from the Adaptive Server inbox and returns query results to the sender of the message and all its cc'd and bcc'd recipients in an attachment to an Adaptive Server message. sp\_processmail generates a name for the attached file consisting of “syb” followed by five random digits, followed by the extension specified by the *filetype* parameter; for example, “syb84840.txt.”
- sp\_processmail deletes messages from the inbox after processing them.
- The *subject* and *originator* parameters specify which messages should be processed. If neither of these parameters is supplied, sp\_processmail processes all the unread messages in the Adaptive Server message inbox.
- sp\_processmail does not process attachments to incoming mail. The query must be in the body of the incoming message.

Permissions

Only a System Administrator can execute sp\_processmail.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event    | Audit option                                                                                                  | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38       | exec_procedure                                                                                                | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |
| See also | <b>Extended stored procedures</b><br>xp_deletemail, xp_findnextmsg, xp_readmail,<br>xp_sendmail, xp_startmail | <b>Utility</b> isql       |                                                                                                                                                                                                                                                                                                                                                                  |

## sp\_procxmode

**Description** Displays or changes the execution modes associated with stored procedures.

**Syntax** sp\_procxmode [*procname* [, *tranmode*]]

**Parameters** *procname*  
is the name of the stored procedure with the transaction mode you are examining or changing.

*tranmode*  
is the new execution mode for the stored procedure. Values are "chained", "unchained", and "anymode", for transaction modes, and '[No] Dynamic Ownership Chain'.

**Examples** **Example 1** Displays the transaction mode for all stored procedures in the current database:

```
sp_procxmode

procedure name      user name      transaction mode
-----
byroyalty          dbo            Unchained
discount_proc      dbo            Unchained
history_proc       dbo            Unchained
insert_sales_proc  dbo            Unchained
insert_detail_proc dbo            Unchained
storeid_proc       dbo            Unchained
storename_proc     dbo            Unchained
title_proc         dbo            Unchained
titleid_proc       dbo            Unchained
```

**Example 2** Displays the transaction mode of the stored procedure byroyalty:

```
sp_procxmode byroyalty

procedure name      transaction mode
-----
byroyalty          Unchained
```

**Example 3** Changes the transaction mode for the stored procedure byroyalty in the pubs2 database from "unchained" to "chained":

```
sp_procxmode byroyalty, "chained"
```



## Usage

- To change the transaction mode of a stored procedure, you must be the owner of the stored procedure, the owner of the database containing the stored procedure, or the System Administrator. The Database Owner or System Administrator can change the mode of another user's stored procedure by qualifying it with the database and user name. For example:

```
sp_procxmode "otherdb.otheruser.newproc", "chained"
```

- To use `sp_procxmode`, turn off chained transaction mode using the `chained` option of the `set` command. By default, this option is turned off.
- When you use `sp_procxmode` with no parameters, it reports the transaction modes of every stored procedure in the current database.
- To examine a stored procedure's transaction mode (without changing it), enter:

```
sp_procxmode procname
```

- To change a stored procedure's transaction mode, enter:

```
sp_procxmode procname, tranmode
```

- When you create a stored procedure, Adaptive Server tags it with the current session's transaction mode. This means:
  - You can execute "chained" stored procedures only in sessions using chained transaction mode.
  - You can execute "unchained" stored procedures only in sessions using unchained transaction mode.

To execute a particular stored procedure in either chained or unchained sessions, set its transaction mode to "anymode".

- If you attempt to run a stored procedure under the wrong transaction mode, Adaptive Server returns a warning message, but the current transaction, if any, is not affected.
- Executing `sp_procxmode procname, 'Dynamic Ownership Chain'` makes sure that any Dynamic SQL (`execute immediate`) statements within the stored procedure get their permissions checked against the procedure creator.
- Executing `sp_procxmode procname, 'No Dynamic Ownership Chain'` (the default behaviour if omitted) makes sure that any Dynamic SQL (`execute immediate`) statements within the stored procedure get their permissions checked against the procedure executor.

**Permissions** Only a System Administrator, the Database Owner, or the owner of a procedure can execute sp\_procxmode to change the transaction mode. Any user can execute sp\_procxmode to display the transaction mode.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                                  |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38                       | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **Commands** begin transaction, commit, save transaction, set

## sp\_querysmobj

**Description** *Tivoli Storage Manager only* – queries the Tivoli Storage Manager (TSM) for a list of the Adaptive Server backup objects.

---

**Note** sp\_querysmobj is supported only when the TSM is licensed at your site.

---

**Syntax** sp\_querysmobj “syb\_tsm”, “*output\_file*”, “*server\_name*”  
 {, “*database\_name*”, “*object\_name*”, “*dump\_type*”,  
 “*until\_time*”, “*bs\_name*”}

**Parameters**

*syb\_tsm*  
 is the keyword that invokes the libsyb\_tsm.so module that enables communication with TSM.

*output\_file*  
 is the file to which Backup Server writes the list of TSM backup objects.

*server\_name*  
 is the name of the Adaptive Server associated with the TSM backup objects.

*database\_name*  
 is the name of the database associated with the TSM backup objects. An asterisk (\*) indicates all databases.

*object\_name*  
 is the name of the TSM backup object as provided in the dump database or dump transaction command. If this parameter is omitted, all backup objects are queried. An asterisk (\*) indicates all backup objects.

*dump\_type*  
 is the backup object type to be queried. Valid values are:

- DB – database backup objects created by the dump database command.
- XACT – database backup objects created by the dump transaction command.
- \* – all database backup objects. This is the default.

*until\_time*  
 is the date timestamp. All backup objects matching the criteria entered in sp\_querysmobj before the specified time are queried. If you omit this parameter, all backup objects matching the specified criteria are queried.

*bs\_name*  
 is the name of the remote Backup Server. If *bs\_name* is omitted, the default, SYB\_BACKUP, is used.

Examples

**Example 1** Queries all TSM backup objects for the Adaptive Server “demo\_svr1” and writes the list to */tmp/qtsm/5\_1.out*.

```
sp_querysmobj "syb_tsm", "/tmp/qtsm/5_1.out", "demo_svr1"
```

**Example 2** Queries all TSM backup objects for the Adaptive Server “demo\_svr1” and the database pubs2 and writes the list to */tmp/qtsm/5\_2.out*.

```
sp_querysmobj "syb_tsm", "/tmp/qtsm/5_2.out", "demo_svr1", "pubs2"
```

**Example 3** Queries all TSM database backup objects for the Adaptive Server “demo\_svr1” and the database pubs2 and writes the list to */tmp/qtsm/5\_3.out*.

```
sp_querysmobj "syb_tsm", "/tmp/qtsm/5_3.out", "demo_svr1", "pubs2", "*", "DB"
```

Usage

For more information about Sybase support for the TSM, see *Using Backup Server with IBM Tivoli Storage Manager*.

Permissions

Only the system administrator and users with the operator role can execute sp\_querysmobj.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Command or access |                |                          |                                                                                                                                                                                                                                                                                                                              |
|-------------------|----------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event             | Audit option   | audited                  | Information in extrainfo                                                                                                                                                                                                                                                                                                     |
| 38                | exec_procedure | Execution of a procedure | <ul style="list-style-type: none"> <li>• Roles – current active roles.</li> <li>• Keywords or options – NULL.</li> <li>• Previous value – NULL.</li> <li>• Current value – NULL.</li> <li>• Other information – all input parameters.</li> <li>• Proxy information – original login name, if set proxy in effect.</li> </ul> |

See also

sp\_deletesmobj

## sp\_recompile

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Causes each stored procedure and trigger that uses the named table to be recompiled the next time it runs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Syntax      | <code>sp_recompile <i>objname</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Parameters  | <i>objname</i><br>is the name of a table in the current database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Examples    | Recompiles each trigger and stored procedure that uses the table titles the next time the trigger or stored procedure is run:<br><br><pre>sp_recompile titles</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Usage       | <ul style="list-style-type: none"> <li>The queries used by stored procedures and triggers are optimized only once, when they are compiled. When systabstats statistics such as row counts or cluster ratios change significantly, your compiled stored procedures and triggers may lose efficiency, and may benefit from <code>sp_recompile</code> recompilation. By recompiling the stored procedures and triggers that act on a table, you can optimize the queries for maximum efficiency.</li> </ul> <hr/> <p><b>Note</b> create index and update statistics result in minor schema changes, and this automatically recompiles stored procedures and trigger. Using <code>sp_recompile</code> for these cases results in redundant recompilations.</p> <hr/> <ul style="list-style-type: none"> <li><code>sp_recompile</code> looks for <i>objname</i> only in the current database and recompiles triggers and stored procedures only in the current database. <code>sp_recompile</code> does not affect objects in other databases that depend on the table.</li> <li>You cannot use <code>sp_recompile</code> on system tables.</li> <li>In Adaptive Server versions 12.5 and earlier, <code>sp_recompile</code> could influence adhoc queries that you execute. Adaptive Server would return a schema change error (error number 540), and abort the adhoc query. <code>sp_recompile</code> no longer affects such adhoc queries, and you no longer see error 540.</li> </ul> <hr/> <p><b>Note</b> <code>sp_recompile</code> could still influence adhoc queries that started execution before <code>sp_recompile</code> was run (a concurrent execution).</p> <hr/> |
| Permissions | Only the Database Owner or a System Administrator can use the <code>setuser</code> command to assume another database user's identity to recompile objects owned by other users. All users can execute <code>sp_recompile</code> to recompile their own objects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**Commands** create index, update statistics

## sp\_refit\_admin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>For cluster environments</i> – provides an interface to perform various disk refit-related actions, such as showing the current status of the disk refit process, resetting the state of the disk refit process, skipping the disk refit process for an instance, and so on.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax      | <code>sp_refit_admin ['help']   'status'   ['reset'   'skiprefit' [, <i>instance_name</i>]]<br/>[[ 'removedevice', <i>device_name</i>]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <p><b>help</b><br/>displays information on <code>sp_refit_admin</code> syntax and usage.</p> <p><b>status</b><br/>displays the current status of the disk refit process. It lists all the instances and their private devices for which disk refit is still pending. If no such device exists, it prints a message saying so.</p> <p><b>reset</b><br/>resets the state of the disk refit process. It takes an optional parameter <i>instance_name</i>.</p> <p>If <i>instance_name</i> is not supplied, this parameter resets the disk refit process back to the beginning of Phase One, so that subsequent disk refit command starts the disk refit process from Phase One and refits all the regular shareable devices, as well as private devices of the instance.</p> <p>If <i>instance_name</i> is supplied, this parameter resets the disk refit process back to the beginning of Phase Two for that instance, so that a subsequent disk refit command on that instance starts the disk refit process from Phase Two for that instance, and refits only the private devices of that instance.</p> <p><b>skiprefit</b><br/>skips running Phase Two of the disk refit process for one or all instances in the cluster without dropping the device. This parameter is meaningful only after the completion of Phase One of the disk refit process. It takes <i>instance_name</i> as an optional parameter.</p> <p><b>removedevice</b><br/>removes a device from the disk refit process. This parameter requires the name of the device that is to be removed, as the input parameter <i>device_name</i> or <i>instance_name</i>.</p> |
| Examples    | <p><b>Example 1</b> Resets the state of the disk refit process to the start of Phase One:</p> <pre>sp_refit_admin 'reset'</pre> <p>After executing <code>reset</code>, the user must run Phase One and Phase Two of the disk refit process.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Example 2** Resets the state of the disk refit process on the instance named 'cluster1\_instance1' to the start of Phase Two for the instance:

```
sp_refit_admin 'reset', 'cluster1_instance1'
```

This interface removes sysdatabases entry for all the databases created on the private devices owned by 'cluster1\_instance1', and the sysusages entries corresponding to the private devices owned by 'cluster1\_instance1'. After executing, you must run Phase Two of disk refit on 'cluster1\_instance1'.

**Example 3** Skips the disk refit process of all the refit-pending private devices of instance 'cluster1\_instance1':

```
sp_refit_admin 'skiprefit', 'cluster1_instance1'
```

This example removes the sysdatabases entry for all the databases that use any of the refit-pending private devices owned by 'cluster1\_instance1', and removes all the entries in sysusages for all the deleted databases.

To skip the disk refit process on all the refit-pending private devices of all the instances in the cluster, enter:

```
sp_refit_admin 'skiprefit'
```

**Example 4** To remove the device "device1" from the disk refit process:

```
sp_refit_admin 'removedevice', 'device1'
```

This action removes the sysdatabases entry for all databases created on 'device1', and all the sysusages entries corresponding to 'device1'. It also removes 'device1' from sysdevices.

#### Usage

- You must follow the instructions in Chapter 12, “Troubleshooting,” in the *Clusters Users Guide* after executing skiprefit, to ensure the consistency of the system tables before resuming normal operation.
- Use removedevice only during the disk refit process, to remove the device from the refit process. Do not use it in place of sp\_dropdevice
- You can use sp\_refit\_admin even when the instance is started with the -m option and trace flag 3608 ON.

#### Permissions

Only a user with system administrator permissions can execute sp\_refit\_admin.

#### See also

For information on problems encountered with disk refit, see the *Troubleshooting and Error Guide*



## sp\_remap

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Remaps a stored procedure, trigger, rule, default, or view from releases later than 4.8 and prior to 10.0 to be compatible with releases 10.0 and later. Use <code>sp_remap</code> on pre-existing objects that the upgrade procedure failed to remap.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | <code>sp_remap objname</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <i>objname</i><br>is the name of a stored procedure, trigger, rule, default, or view in the current database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Examples    | <p><b>Example 1</b> Remaps a stored procedure called myproc:</p> <pre>sp_remap myproc</pre> <p><b>Example 2</b> Remaps a rule called default_date. Execute a <code>use my_db</code> statement to open the <code>my_db</code> database before running this procedure:</p> <pre>sp_remap "my_db..default_date"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Usage       | <ul style="list-style-type: none"> <li>• If <code>sp_remap</code> fails to remap an object, drop the object from the database and re-create it. Before running <code>sp_remap</code> on an object, it is a good idea to copy its definition into an operating system file with the <code>defncopy</code> utility. See the <i>Utility Guide</i> for more information about <code>defncopy</code>.</li> <li>• <code>sp_remap</code> can cause your transaction log to fill rapidly. Before running <code>sp_remap</code>, use the <code>dump transaction</code> command to dump the transaction log, as needed.</li> <li>• You can use <code>sp_remap</code> only on objects in the current database.</li> <li>• <code>sp_remap</code> makes no changes to objects that were successfully upgraded to the current release.</li> </ul> |
| Permissions | Only a System Administrator or the owner of an object can execute <code>sp_remap</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Command or access |                |                          |                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|----------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Event             | Audit option   | Command audited          | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
| 38                | exec_procedure | Execution of a procedure | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** dump transaction

**System procedures** sp\_helptext

**Utility programs** defncopy

## sp\_remotoption

|             |                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------|
| Description | Displays or changes remote login options.                                                                                  |
| Syntax      | sp_remotoption [ <i>remoteserver</i> [, <i>loginame</i><br>[, <i>remotename</i> [, <i>optname</i> [, <i>optvalue</i> ]]]]] |
| Parameters  | <i>remoteserver</i><br>is the name of the server that will be executing RPCs on this server.                               |

---

**Note** This manual page uses the term “local server” to refer to the server that is executing the remote procedures that are run from a “remote server.”

---

*loginame*  
is the login name that identifies the local login for the *remoteserver*, *loginame*, *remotename* combination.

*remotename*  
is the remote user name that identifies the remote login for the *remoteserver*, *loginame*, *remotename* combination.

*optname*  
is the name of the option to change. Currently, there is only one option, *trusted*, which means that the local server accepts remote logins from other servers without user-access verification for the particular remote login. The default is to use password verification. Adaptive Server understands any unique string that is part of the option name. Use quotes around the option name if it includes embedded blanks.

*optvalue*  
is either true or false. true turns the option on, false turns it off.

Examples **Example 1** Displays a list of the remote login options:

```
sp_remotoption
Settable remote login options.
remotelogin_option
-----
trusted
```

**Example 2** Defines the remote login from the remote server GATEWAY to be trusted; that is, the password is not checked:

```
sp_remotoption GATEWAY, churchy, pogo, trusted, true
```

**Example 3** Defines the remote login “pogo” from the remote server GATEWAY as a login that is not trusted; that is, the password is checked:

sp\_remotoption GATEWAY, churchy, pogo, trusted, false

**Example 4** Defines all logins from GATEWAY that map to login “albert” on the local server to be trusted:

```
sp_remotoption GATEWAY, albert, NULL, trusted, true
```

Usage

- To display a list of the remote login options, execute sp\_remotoption with no parameters.
- If you have used sp\_addremotelogin to map all users from a remote server to the same local name, specify trusted for those users. For example, if all users from server GOODSRV that are mapped to “albert” are trusted, specify:

```
sp_remotoption GOODSRV, albert, NULL, trusted, true
```

If the logins are not specified as trusted, they cannot execute RPCs on the local server unless they specify local server passwords when they log into the remote server. When they use Open Client Client-Library, users can specify a password for server-to-server connections with the routine ct\_remote\_pwd. isql and bcp do not permit users to specify a password for RPC connections.

If users are logged into the remote server using “unified login”, the logins must also be trusted on the local server, or they must specify passwords for the server when they log into the remote server.

See the *System Administration Guide* for more information about setting up servers for remote procedure calls and for using “unified login.”

Permissions

Only a System Security Officer can execute sp\_remotoption.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addremotelogin, sp\_droptremotelogin, sp\_helpremotelogin

**Utility** isql

## sp\_remotesql

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Component Integration Services only</b> Establishes a connection to a remote server, passes a query buffer to the remote server from the client, and relays the results back to the client.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | <code>sp_remotesql server, query [, query2, ... , query254]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>server</i><br/>is the name of a remote server defined with <code>sp_addserver</code>.</p> <p><i>query</i><br/>is a query buffer a with maximum length of 255 characters.</p> <p><i>query2 ... query254</i><br/>is a query buffer with a maximum length of 255 characters. If supplied, these arguments are concatenated with the contents of <i>query1</i> into a single query buffer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Examples    | <p><b>Example 1</b> Passes the query buffer to <code>FREDS_SERVER</code>, which interprets <code>select @@version</code> and returns the result to the client. Adaptive Server does not interpret the result:</p> <pre>sp_remotesql FREDS_SERVER, "select @@version"</pre> <p><b>Example 2</b> Illustrates the use of <code>sp_remotesql</code> in a stored procedure. This example and example 1 return the same information to the client:</p> <pre>create procedure freds_version as exec sp_remotesql FREDS_SERVER, "select @@version" go exec freds_version go</pre> <p><b>Example 3</b> The server concatenates two query buffers into a single buffer, and passes the complete insert statement to the server <code>DCO_SERVER</code> for processing. The syntax for the insert statement is a format that <code>DCO_SERVER</code> understands. The returned information is not interpreted by the server. This example also examines the value returned in <code>@@error</code>.</p> <pre>sp_remotesql DCO_SERVER, "insert into remote_table (numbercol,intcol, floatcol,datecol )", "values (109.26,75, 100E5,'10-AUG-85')" select @@error</pre> <p><b>Example 4</b> Illustrates the use of local variables as parameters to <code>sp_remotesql</code>:</p> <pre>declare @servname varchar(30)</pre> |

```
declare @querybuf varchar(200)
select @servname = "DCO_SERV"
select @querybuf = "select table_name
    from all_tables
    where owner = 'SYS'"
exec sp_remotesql @servname, @querybuf
```

Usage

- sp\_remotesql establishes a connection to a remote server, passes a query buffer to the remote server from the client, and relays the results back to the client. The local server does not intercept results.
- You can use sp\_remotesql within another stored procedure.
- The query buffer parameters must be a character expression with a maximum length of 255 characters. If you use a query buffer that is not char or varchar, you will receive datatype conversion errors.
- sp\_remotesql sets the global variable @@error to the value of the last error message returned from the remote server if the severity of the message is greater than 10.
- If sp\_remotesql is issued from within a transaction, Adaptive Server verifies that a transaction has been started on the remote server before passing the query buffer for execution. When the transaction terminates, the remote server is directed to commit the transaction. The work performed by the contents of the query buffer is part of the unit of work defined by the transaction.

If transaction control statements are part of the query buffer, it is the responsibility of the client to ensure that the transaction commit and rollback occur as expected. Mixing Transact-SQL with transaction control commands in the query buffer can cause unpredictable results.

- The local server manages the connection to the remote server. Embedding connect to or disconnect commands in the query buffer causes results that require interpretation by the remote server. This is not required or recommended. Typically, the result is a syntax error.

Permissions

Any user can execute sp\_remotesql.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** connect to...disconnect

**System procedures** sp\_addserver, sp\_autoconnect, sp\_passthru

## sp\_rename

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Changes the name of a user-created object or user-defined datatype in the current database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Syntax      | <code>sp_rename objname, newname [,"index"   "column"]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Parameters  | <p><i>objname</i><br/>is the original name of the user-created object (table, view, column, stored procedure, index, trigger, default, rule, check constraint, referential constraint, or user-defined datatype). If the object to be renamed is a column in a table, <i>objname</i> must be in the form "<i>table.column</i>". If the object is an index, <i>objname</i> must be in the form "<i>table.indexname</i>".</p> <p><i>newname</i><br/>is the new name of the object or datatype. The name must conform to the rules for identifiers and must be unique to the current database.</p> <p><i>index</i><br/>specifies that the object you are renaming is an index, not a column. This argument allows you to rename an index that has the same name as a column, without dropping and re-creating the index.</p> <p><i>column</i><br/>specifies that the object you are renaming is a column, not an index. This argument is part of the same option as the <i>index</i> argument.</p> |
| Examples    | <p><b>Example 1</b> Renames the titles table to books:</p> <pre>sp_rename titles, books</pre> <p><b>Example 2</b> Renames the title column in the books table to bookname:</p> <pre>sp_rename "books.title", bookname</pre> <p><b>Example 3</b> Renames the titleind index in the books table to titleindex:</p> <pre>sp_rename "books.titleind", titleindex</pre> <p><b>Example 4</b> Renames the user-defined datatype tid to bookid:</p> <pre>sp_rename tid, bookid</pre> <p><b>Example 5</b> Renames the title_id index in the titles table to isbn:</p> <pre>sp_rename "titles.title_id", isbn, "index"</pre>                                                                                                                                                                                                                                                                                                                                                                              |
| Usage       | <ul style="list-style-type: none"><li>sp_rename changes the name of a user-created object or datatype. You can change only the name of an object or datatype in the database in which you issue sp_rename.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



- When you are renaming a column or index, do not specify the table name in *newname*. See Examples 2, 3, and 5.
- If a column and an index have the same name, use the [*index* | *column*] argument, which specifies whether to rename the index or the column. In the following sample, assume that both an index and a column named *idx* exist:

```
sp_rename "t.idx", new_idx, "column"
-----

Column name has been changed. (Return status = 0)

sp_rename "t.idx", new_idx, "index"
-----

Index name has been changed. (Return status = 0)
```

- If you change the name of a an object or column name referenced by a view, you see a warning message, such as:
 

```
Changing an object or column name could break
existing stored procedures, cached statements or
other compiled objects.
```
- You cannot change the names of system objects and system datatypes.

---

**Warning!** Procedures, triggers, and views that depend on an object whose name has been changed will no longer work. Change the definitions of any dependent objects before you execute `sp_rename`. Find dependent objects with `sp_depends`.

---

#### Permissions

Only the Database Owner or a System Administrator can use the `setuser` command to assume another database user's identity to rename objects owned by other users. All users can execute `sp_rename` to rename their own objects.

#### Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_depends, sp\_rename

## sp\_rename\_qpgroup

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Renames an abstract plan group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | <code>sp_rename_qpgroup old_name, new_name</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>old_name</i><br/>is the current name of the abstract plan group.</p> <p><i>new_name</i><br/>is the new name for the group. The specified <i>new_name</i> cannot be the name of an existing abstract plan group in the database.</p>                                                                                                                                                                                                                                                                                    |
| Examples    | <pre>sp_rename_qpgroup dev_plans, prod_plans</pre> <p>Changes the name of the group from <code>dev_plans</code> to <code>prod_plans</code>.</p>                                                                                                                                                                                                                                                                                                                                                                              |
| Usage       | <ul style="list-style-type: none"> <li>Use <code>sp_rename_qpgroup</code> to rename an abstract plan group. You cannot use the name of an existing plan group for the new name.</li> <li><code>sp_rename_qpgroup</code> does not affect the contents of the renamed group. IDs of existing abstract plans are not changed.</li> <li>You cannot rename the default abstract plan groups, <code>ap_stdin</code> and <code>ap_stdout</code>.</li> <li><code>sp_rename_qpgroup</code> cannot be run in a transaction.</li> </ul> |
| Permissions | Only a System Administrator or the Database Owner can execute <code>sp_rename_qpgroup</code> .                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_help_qpgroup`

## sp\_renamedb

|             |                                                                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Changes the name of a user database.                                                                                                                                                          |
| Syntax      | sp_renamedb <i>dbname</i> , <i>newname</i>                                                                                                                                                    |
| Parameters  | <i>dbname</i><br>is the original name of the database.<br><br><i>newname</i><br>is the new name of the database. Database names must conform to the rules for identifiers and must be unique. |

Examples **Example 1** Renames the accounting database to financial:

```
sp_renamedb accounting, financial
```

**Example 2** Renames the database named work, which is a Transact-SQL reserved word, to workdb. This example shows how sp\_dboption is used to place the work database in single-user mode before renaming it and restore it to multi-user mode afterward:

```
sp_dboption work, single, true
go
use work
go
checkpoint
go
sp_renamedb work, workdb
go
use master
go
sp_dboption workdb, single, false
go
use workdb
go
checkpoint
go
```

- Usage
- sp\_renamedb changes the name of a database. You *cannot* rename system databases or databases with external referential integrity constraints.
  - The System Administrator must place a database in single-user mode with sp\_dboption before renaming it and must restore it to multi-user mode afterward.

- `sp_renamedb` fails if any table in the database references, or is referenced by, a table in another database. Use the following query to determine which tables and external databases have foreign key constraints on primary key tables in the current database:

```
select object_name(tableid), db_name(frgndbid)
from sysreferences
where frgndbid is not null
```

Use the following query to determine which tables and external databases have primary key constraints for foreign key tables in the current database:

```
select object_name(reftabid), db_name(pmrydbid)
from sysreferences
where pmrydbid is not null
```

Use `alter table` to drop the cross-database constraints in these tables. Then, rerun `sp_renamedb`.

- When you change a database name:
  - Drop all stored procedures, triggers, and views that include the database name
  - Change the source text of the dropped objects to reflect the new database name
  - Re-create the dropped objects
  - Change all applications and SQL source scripts that reference the database, either in a `use database_name` command or as part of a fully qualified identifier (in the form `dbname.[owner].objectname`)
- If you use scripts to run `dbcc` commands or `dump database` and `dump transaction` commands on your databases, be sure to update those scripts.

---

**Warning!** Procedures, triggers, and views that depend on a database whose name has been changed work until they are re-created. Change the definitions of any dependent objects when you execute `sp_renamedb`. Find dependent objects with `sp_depends`.

---

Permissions

Only a System Administrator can execute `sp_renamedb`.

Auditing

Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create database

**System procedures** sp\_changedbowner, sp\_dboption, sp\_depends, sp\_helpdb, sp\_rename

## sp\_reportstats

**Description** Reports statistics on system usage.

**Syntax** sp\_reportstats [*loginame*]

**Parameters** *loginame*  
is the login name of the user to show accounting totals for.

**Examples** **Example 1** Displays a report of current accounting totals for all Adaptive Server users:

```
sp_reportstats
Name      Since          CPU      Percent CPU  I/O      Percent I/O
-----  -
julie     jun 19 1993    10000    24.9962%    5000     24.325%
jason     jun 19 1993    10002    25.0013%    5321     25.8866%
ken       jun 19 1993    10001    24.9987%    5123     24.9234%
kathy     jun 19 1993    10003    25.0038%    5111     24.865%

Total CPU  Total I/O
-----  -
40006     20555
```

**Example 2** Displays a report of current accounting totals for user “kathy”:

```
sp_reportstats kathy
Name      Since          CPU      Percent CPU  I/O      Percent I/O
-----  -
kathy     Jul 24 1993    498      49.8998%    48392    9.1829%

Total CPU  Total I/O
-----  -
998        98392
```

**Usage**

- sp\_reportstats prints out the current accounting totals for all logins, as well as each login’s individual statistics and percentage of the overall statistics. sp\_reportstats accepts one parameter, the login name of the account to report. With no parameters, sp\_reportstats reports on all accounts.
- The units reported for “CPU” are Adaptive Server clock ticks.
- The “probe” user exists for the two-phase commit probe process, which uses a challenge-and-response mechanism to access Adaptive Server.

**Permissions** Only a System Administrator can execute sp\_reportstats.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**System procedures** sp\_clearstats, sp\_configure



## sp\_revokelogin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Revokes Adaptive Server roles and default permissions from Windows NT users and groups when Integrated Security mode or Mixed mode (with Named Pipes) is active.                                                                                                                                                                                                                                                                                                    |
| Syntax      | sp_revokelogin { <i>login_name</i>   <i>group_name</i> }                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Parameters  | <i>login_name</i><br>is the network login name of the Windows NT user.<br><br><i>group_name</i><br>is the Windows NT group name.                                                                                                                                                                                                                                                                                                                                                           |
| Examples    | <b>Example 1</b> Revokes all permissions from the Windows NT user named “jeanluc”:<br><br><pre>sp_revokelogin jeanluc</pre><br><b>Example 2</b> Revokes all roles from the Windows NT Administrators group:<br><br><pre>sp_revokelogin Administrators</pre>                                                                                                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"> <li>Use sp_revokelogin only when Adaptive Server is running in Integrated Security mode or Mixed mode, when the connection is Named Pipes. If Adaptive Server is running in Standard mode, or in Mixed mode using a connection other than Named Pipes, use the revoke command.</li> <li>If you revoke a user’s roles and default privileges with sp_revokelogin, that user can no longer log into Adaptive Server over a trusted connection.</li> </ul> |
| Permissions | Only a System Administrator can execute sp_revokelogin.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

|          |                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------|
| See also | <b>Commands</b> grant, revoke, setuser<br><b>System procedures</b> sp_droplogin, sp_dropuser, sp_logininfo |
|----------|------------------------------------------------------------------------------------------------------------|

## sp\_role

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Grants or revokes roles to an Adaptive Server login account.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | <code>sp_role {"grant"   "revoke"}, rolename, loginame</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Parameters  | <code>grant   revoke</code><br>specifies whether to grant the role to or revoke the role from <i>loginame</i> .<br><br><i>rolename</i><br>is the role to be granted or revoked.<br><br><i>loginame</i><br>is the login account to or from which the role is to be granted or revoked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Examples    | Grants the System Administrator role to the login account named “alexander”:<br><br><pre>sp_role "grant", sa_role, alexander</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"><li>• <code>sp_role</code> grants or revokes roles to an Adaptive Server login account.</li><li>• When you grant a role to a user, it takes effect the next time the user logs into Adaptive Server. Alternatively, the user can enable the role immediately by using the <code>set role</code> command. For example, the command enables the System Administrator role for the user:<br/><br/><pre>set role sa_role on</pre><br/>However, you must run <code>sp_modifylogin</code> to enable the login. For more information, see <code>sp_modifylogin</code>.</li><li>• You cannot revoke a role from a user while the user is logged in.</li><li>• When users log in, all system-defined roles that have been granted to them are active (on). To turn a role off, use the <code>set</code> command. For example, to deactivate the System Administrator role, use the command:<br/><br/><pre>set role "sa_role" off</pre></li></ul> |
| Permissions | Only a System Administrator can execute <code>sp_role</code> to grant the System Administrator role to other users. Only a System Security Officer can execute <code>sp_role</code> to grant any role other than “sa” to other users.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Auditing    | Values in <code>event</code> and <code>extrainfo</code> columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** grant, revoke, set

**Functions** proc\_role, show\_role

**System procedures** sp\_activeroles, sp\_displayroles, sp\_displayroles

## sp\_sendmsg

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Sends a message to a User Datagram Protocol (UDP) port.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>sp_sendmsg ip_address, port_number, message</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Parameters  | <p><i>ip_address</i><br/>is the IP address of the machine where the UDP application is running.</p> <p><i>port_number</i><br/>is the port number of the UDP port.</p> <p><i>message</i><br/>is the message to send, up to 4096 characters in length.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Examples    | <code>sp_sendmsg "120.10.20.5", 3456, "Hello World"</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Usage       | <ul style="list-style-type: none"><li>• <code>sp_sendmsg</code> is not supported on Windows NT.</li><li>• To enable the use of UDP messaging, a System Security Officer must set the configuration parameter <code>allow_sendmsg</code> to 1.</li><li>• No security checks are performed with <code>sp_sendmsg</code>. Sybase strongly recommends caution when using <code>sp_sendmsg</code> to send sensitive information across the network. By enabling this functionality, the user accepts any security problems which result from its use.</li><li>• This sample C program listens on a port that you specify and echoes the messages it receives. For example, to receive the <code>sp_sendmsg</code> calls for Example 1, use:</li></ul> |

```
udpmon 3456
#include <stdlib.h>
#include <stdio.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <unistd.h>
#include <fcntl.h>

main(argc, argv)
int argc; char *argv[];
{
    struct sockaddr_in saddr;
    int portnum, sck, dummy, msglen;
    char msg[256];

    if (argc < 2) {
        printf("Usage: udpmon <udp portnum>\n");
    }
}
```

```

        exit(1);
    }

    if ((portnum=atoi(argv[1])) < 1) {
        printf("Invalid udp portnum\n");
        exit(1);
    }

    if ((sck=socket(AF_INET,SOCK_DGRAM,IPPROTO_UDP)) < 0) {
        printf("Couldn't create socket\n");
        exit(1);
    }

    sadr.sin_family = AF_INET;
    sadr.sin_addr.s_addr = inet_addr("0.0.0.0");
    sadr.sin_port = portnum;

    if (bind(sck,&sadr,sizeof(sadr)) < 0) {
        printf("Couldn't bind requested udp port\n");
        exit(1);
    }

    for (;;)
    {
        if((msglen=recvfrom(sck,msg,sizeof(msg),0,NULL,&dummy))
    < 0)
            printf("Couldn't recvfrom() from udp port\n");
        printf("%.*s\n", msglen, msg);
    }
}

```

Permissions Any user can execute sp\_sendmsg.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Function** syb\_sendmsg

## sp\_serveroption

|             |                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays or changes remote server options.                                                                                                                                               |
| Syntax      | sp_serveroption [ <i>server</i> , <i>optname</i> , <i>optvalue</i> ]                                                                                                                     |
| Parameters  | <i>server</i><br>is the name of the remote server for which to set the option.<br><br><i>optname</i><br>is the name of the option to be set or unset. Table 1-36 lists the option names. |

**Table 1-36: sp\_serveroption options**

| Option                     | Meaning                                                                                                                                                                                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mutual authentication      | <i>Valid for “rpc security model B” only</i> – this option specifies that the local server authenticates the remote server by retrieving the credential of the remote server and verifying it with the security mechanism. With this service, the credentials of both servers are authenticated and verified. |
| external engine auto start | Specifies that EJB Server starts up each time Adaptive Server starts up. The default is true; starting Adaptive Server also starts up EJB Server.                                                                                                                                                             |
| net password encryption    | Specifies whether to initiate connections with a remote server with the client side password encryption handshake or with the normal (unencrypted password) handshake sequence. The default is false, no network encryption.                                                                                  |

| Option                       | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| net password encryption reqd | <p>Adaptive Server allows the use of asymmetric encryption to securely transmit passwords from client to server using the RSA public key encryption algorithm. Adaptive Server generates the asymmetric key pair and sends the public key to clients that use the new login protocol. The client encrypts the user's login password with the public key before sending it to the server. The server, decrypts the password with the private key to begin the authentication of the client connecting.</p> <p>Configures Adaptive Server to require clients to use this protocol. Set the Adaptive Server configuration parameter net password encryption reqd to require all username- and password-based authentication requests to use RSA asymmetric encryption. The valid values for net password encryption reqd are:</p> <ul style="list-style-type: none"> <li>• 0 – Allows the client to choose the encryption algorithm used for login passwords on the network, including no password encryption. This is the default value for this configuration parameter and provides functionality most similar to earlier releases. This allows the choice of network password encryption to be established by the client application.</li> <li>• 1 – Restricts clients to use either RSA or Sybase proprietary encryption algorithms to encrypt login passwords on the network. This provides an incrementally restrictive setting that allows older clients to connect with the Sybase proprietary algorithm and new clients to connect with the stronger RSA algorithm. A client that attempts to connect without using password encryption will fail.</li> <li>• 2 – Restricts clients to use only the RSA encryption algorithms to encrypt login passwords on the network. This provides strong RSA encryption of passwords and requires use of newer clients. A client that attempts to connect without using the RSA encryption will fail.</li> </ul> |
| allow password downgrade     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| readonly                     | <i>Component Integration Services only</i> – specifies that access to the server named is read only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| rpc security model A         | The default model for handling RPCs. This model does not support mutual authentication, message integrity, or message confidentiality between the local server and the remote server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| rpc security model B         | This model results in a single, secure physical connection established between the local and remote servers. Logical connections for each RPC that is executed are multiplexed over the single, secure, physical connection. This model supports mutual authentication, message confidentiality via encryption, and message integrity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| security mechanism           | <i>Valid for “rpc security model B” only</i> – this option specifies the security mechanism for the remote server. You must set this option to true to use security model B.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| server cost                  | <i>Component Integration Services only</i> – specifies the cost of a single exchange under the user's control, on a per-server basis. See Chapter 2, “Understanding Component Integration Services” in <i>Understanding CIS</i> for more information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Option                      | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| server logins               | <i>Component Integration Services only</i> – to fully support remote logins, Client-Library provides connection properties that enable CIS to request a server connection. This connection is recognized at the receiving server as a server connection (as opposed to an ordinary client connection), allowing the remote server to validate the connection through the use of sysremotelogins as if the connection were made by a site handler. When enabled, Omni connects to the specified server using the CS_LOGIN_TYPE connection property, with type set to LREMUSER. Also, if the remote server is an Adaptive Server, the CS_LOGIN_REMOTE_SERVER property is set to the value of the local server name, and remote passwords are set using ct_remote_pwd(). |
| negotiated logins           | <i>Component Integration Services only</i> – this option is necessary if CIS connections to XP server or Backup Server are required. When enabled, Omni connects to the specified server using the CS_SEC_CHALLENGE property, and establishes a callback handler that can respond appropriately to login challenges from XP Server and Backup Server.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| timeouts                    | When unset ( <i>false</i> ), disables the normal timeout code used by the local server, so the site connection handler does not automatically drop the physical connection after one minute with no logical connection. The default is <i>false</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| use message confidentiality | <i>Valid for “rpc security model B” only</i> – this option specifies that messages are encrypted when sent to the remote server, and results from the remote server are encrypted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| use message integrity       | <i>Valid for “rpc security model B” only</i> – this option specifies that messages between the servers are checked for tampering.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| cis hafailover              | <i>Component Integration Services only</i> – if enabled, instructs Open Client to use automatic failover when connections fail. In this case, CIS connection failures automatically failover to the server specified in directory services (such as the <i>interface</i> file and ldap server) as the failover server.                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Adaptive Server accepts any unique string that is part of the option name. Use quotes around the option name if it includes embedded blanks.

*optvalue*

is true (on) or false (off) for all options except the security mechanism option.

For the security mechanism option, specify the name of the security mechanism. To see the names of the security mechanisms available on a server, execute:

```
select * from syssecmechs
```

Examples

**Example 1** Displays a list of the server options:

```
sp_serveroption
Settable server options.
```



```

-----
cis hafailover
external engine auto start
mutual authentication
negotiated logins
net password encryption
readonly
rpc security model A
rpc security model B
security mechanism
server cost
server logins
timeouts
use message confidentiality
use message integrity

```

**Example 2** Tells the server not to time out inactive physical connections with the remote server GATEWAY:

```
sp_serveroption GATEWAY, "timeouts", false
```

**Example 3** Specifies that when connecting to the remote server GATEWAY, GATEWAY sends back an encryption key to encrypt the password to send to it:

```
sp_serveroption GATEWAY, "net password encryption", true
```

**Example 4** Specifies that the EJB Server SYB\_EJB starts up each time Adaptive Server starts up:

```
sp_serveroption SYB_EJB, "external engine auto start", true
```

**Example 5** Specifies that the security model for RPCs for the server “TEST3” is security model B.

```
sp_serveroption TEST3, "rpc security model B", true
```

**Example 6** Specifies that the security model to use for RPCs for “TEST3” is DCE:

```
sp_serveroption TEST3, "security mechanism", dce
```

**Example 7** Specifies that the local server will check the authenticity of the remote server “TEST3”. With security model B, the remote server will check the authenticity of the local server, whether or not this option is set:

```
sp_serveroption TEST3, "mutual authentication", true
```

**Example 8** Disables automatic startup, where SYB\_EJB is the logical name of the EJB Server:

```
sp_serveroption 'SYB_EJB', 'external engine auto start', 'false'
```

To enable automatic startup, enter:

```
sp_serveroption 'SYB_EJB', 'external engine auto start', 'true'
```

See “Starting EJB Server automatically” in Chapter 2, “Getting Started” of the *EJB Server User’s Guide* for more information about using external engine auto start.

Usage

- To display a list of server options that can be set by the user, use sp\_serveroption with no parameters.
- Once timeouts is set to false, the site handlers will continue to run until one of the two servers is shut down.
- The net password encryption option allows clients to specify whether to send passwords in plain text or encrypted form over the network when initiating a remote procedure call. If net password encryption is true, the initial login packet is sent without passwords, and the client indicates to the remote server that encryption is desired. The remote server sends back an encryption key, which the client uses to encrypt its passwords. The client then encrypts its passwords, and the remote server uses the key to authenticate them when they arrive.
- To set network password encryption for a particular isql session, you can use a command line option for isql. For more information, see the Utility Programs manual for your platform.
- You cannot use the net password encryption option when connecting to a pre-release 10.0 SQL Server.
- The security mechanism, mutual authentication, use message confidentiality, and use message integrity options do *not* apply to security model A.

See the section “Establishing security for remote servers” in Chapter 16, “External Authentication” in the *System Administration Guide, Volume 1* for usage information about security model A and B.

Permissions

Only a System Administrator can execute sp\_serveroption to set the timeouts option. Any user can execute sp\_serveroption with no parameters to display a list of options.

Only a System Security Officer can set the net password encryption, security mechanism, mutual authentication, use message confidentiality, and use message integrity options.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documents** See the *System Administration Guide* for more information on server options.

**System procedures** sp\_helpserver, sp\_password

**Utility** isql

## sp\_set\_qplan

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Changes the text of the abstract plan of an existing plan without changing the associated query.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <code>sp_set_qplan id, plan</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>id</i><br/>is the ID of the abstract plan.</p> <p><i>plan</i><br/>is a new abstract plan.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Examples    | <code>sp_set_qplan 563789159,<br/>"( g_join (scan t1) (scan t2)) "</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Usage       | <ul style="list-style-type: none"> <li>• Use <code>sp_set_qplan</code> to change the abstract plan of an existing plan. You can specify a maximum of 255 characters for a plan. If the abstract plan is longer than 255 characters, you can drop the old plan with <code>sp_drop_qplan</code> and then use <code>create plan</code> to create a new plan for the query.</li> <li>• When you change a plan with <code>sp_set_qplan</code>, plans are not checked for valid abstract plan syntax. Also, the plan is not checked for compatibility with the SQL text. All plans modified with <code>sp_set_qplan</code> should be immediately checked for correctness by running the query for the specified ID.</li> <li>• To find the ID of a plan, use <code>sp_help_qpgroup</code>, <code>sp_help_qplan</code>, or <code>sp_find_qplan</code>. Plan IDs are also returned by <code>create plan</code> and are included in <code>showplan</code> output.</li> </ul> |
| Permissions | Any user can execute <code>sp_set_qplan</code> to change the text for a plan that he or she owns. Only the System Administrator or the Database Owner can change the text for a plan that belongs to another user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create plan

**System procedures** sp\_drop\_qpgroup, sp\_drop\_qplan, sp\_find\_qplan,  
sp\_help\_qplan

## sp\_setlangalias

**Description** Assigns or changes the alias for an alternate language.

**Syntax** sp\_setlangalias *language*, *alias*

**Parameters** *language*  
 is the official language name of the alternate language.  
*alias*  
 is the new local alias for the alternate language.

**Examples** sp\_setlangalias french, français  
 This command assigns the alias name “français” for the official language name “french”.

**Usage**

- *alias* replaces the current value of syslanguages.alias for the official name.
- The set language command can use the new *alias* in place of the official language name.

**Permissions** Only a System Administrator can execute sp\_setlangalias.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Command or access</b> |                     |                                  |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Event</b>             | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
| 38                       | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **Commands** set

**System procedures** sp\_addlanguage, sp\_droplanguage, sp\_helplanguage

## sp\_setpglockpromote

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Sets or changes the lock promotion thresholds for a database, for a table, or for Adaptive Server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <pre>sp_setpglockpromote {"database"   "table"}, objname, new_lwm,                     new_hwm, new_pct  sp_setpglockpromote server, NULL, new_lwm, new_hwm, new_pct</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>server</i><br/>sets server-wide values for the lock promotion thresholds.</p> <p>"database"   "table"<br/>specifies whether to set the lock promotion thresholds for a database or table. "database" and "table" are Transact-SQL keywords, so the quotes are required.</p> <p><i>objname</i><br/>is either the name of the table or database for which you are setting the lock promotion thresholds or null, if you are setting server-wide values.</p> <p><i>new_lwm</i><br/>specifies the value to set for the low watermark (LWM) threshold. The LWM must be less than or equal to the high watermark (HWM). The minimum value for LWM is 2. This parameter can be null.</p> <p><i>new_hwm</i><br/>specifies the value to set for the lock promotion HWM threshold. The HWM must be greater than or equal to the LWM. The maximum HWM is 2,147,483,647. This parameter can be null.</p> <p><i>new_pct</i><br/>specifies the value to set for the lock promotion percentage (PCT) threshold. PCT must be between 1 and 100. This parameter can be null.</p> |
| Examples    | <p><b>Example 1</b> Sets the server-wide lock promotion LWM to 200, the HWM to 300, and the PCT to 50:</p> <pre>sp_setpglockpromote "server", NULL, 200, 300, 50</pre> <p><b>Example 2</b> Sets lock promotion thresholds for the master database:</p> <pre>sp_setpglockpromote "database", master, 1000, 1100, 45</pre> <p><b>Example 3</b> Sets lock promotion thresholds for the titles table in the pubs2 database. This command must be issued from the pubs2 database:</p> <pre>sp_setpglockpromote "table", "pubs2..titles", 500, 700, 10</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Example 4** Changes the HWM threshold to 1600 for the master database. The thresholds were previously set with `sp_setpglockpromote`. This command must be issued from the master database:

```
sp_setpglockpromote "database", master, @new_hwm=1600
```

Usage

- You can display database-level lock promotions using `sp_helpdb dbname` and table-level locks using `sp_helpdb tablename`.
- `sp_setpglockpromote` configures the lock promotion values for a table, for a database, or for Adaptive Server.

Adaptive Server acquires page locks on a table until the number of locks exceeds the lock promotion threshold. `sp_setpglockpromote` changes the lock promotion thresholds for an object, a database, or the server. If Adaptive Server is successful in acquiring a table lock, the page locks are released.

When the number of locks on a table exceeds the HWM threshold, Adaptive Server attempts to escalate to a table lock. When the number of locks on a table is below the LWM, Adaptive Server does not attempt to escalate to a table lock. When the number of locks on a table is between the HWM and LWM and the number of locks exceeds the PCT threshold, Adaptive Server attempts to escalate to a table lock.

- Lock promotion thresholds for a table override the database or server-wide settings. Lock promotion thresholds for a database override the server-wide settings.
- Lock promotion thresholds for Adaptive Server do not need initialization, but you must initialize database and table lock promotion thresholds by specifying LWM, HWM, and PCT with `sp_setpglockpromote`, which creates a row for the object in `sysattributes` when it is first run for a database or table. Once the thresholds have been initialized, then they can be modified individually, as in Example 4.
- For a table or a database, `sp_setpglockpromote` sets LWM, HWM, and PCT in a single transaction. If `sp_setpglockpromote` encounters an error while updating any of the values, then all changes are aborted and the transaction is rolled back. For server-wide changes, one or more thresholds may fail to be updated while others are successfully updated. Adaptive Server returns an error message if any values fail to be updated.
- To view the server-wide settings for the lock promotion thresholds, use `sp_configure "lock promotion"` to see all three threshold values. To view lock promotion settings for a database, use `sp_helpdb`. To view lock promotion settings for a table, use `sp_help`.



Permissions Only a System Administrator can execute `sp_setpglockpromote`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_configure`, `sp_droplockpromote`, `sp_help`, `sp_helpdb`

## sp\_setpsexex

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Sets custom execution attributes for a session while the session is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | sp_setpsexex <i>spid</i> , <i>exeattr</i> , <i>value</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <p><i>spid</i><br/>is the ID of the session for which to set execution variables. Use sp_who to see spids.</p> <p><i>exeattr</i><br/>identifies the execution attribute to be set. Values are priority and enginegroup.</p> <p><i>value</i><br/>is the new value of exeattr. Values for each attribute are as follows:</p> <ul style="list-style-type: none"><li>• If <i>exeattr</i> is priority, <i>value</i> is HIGH, MEDIUM, or LOW.</li><li>• If <i>exeattr</i> is enginegroup, <i>value</i> is the name of an existing engine group.</li></ul>                                                                                                                                                                                                                                                                                                               |
| Examples    | <p>This example sets the priority of the process with an ID of 1 to HIGH:</p> <pre>sp_setpsexex 1, "priority", "HIGH"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Usage       | <ul style="list-style-type: none"><li>• Execution attribute values specified with sp_setpsexex are valid for the current session only and do not apply after the session terminates.</li><li>• Use sp_setpsexex with caution or it can result in degraded performance. Changing attributes “on the fly”, using sp_setpsexex, can help if the process is not getting CPU time; however, if the performance problem is due to something else, such as locks, changing execution attributes could make the problem worse.</li><li>• Because you can only set execution attributes for sessions, sp_setpsexex cannot be set for a worker process spid.</li><li>• Except for the housekeeper spid, you cannot set execution attributes for system spids.</li><li>• sp_setpsexex does not work if there are no online engines in the associated engine group.</li></ul> |
| Permissions | Only a System Administrator can execute sp_setpsexex without restriction. Any user can execute sp_setpsexex to lower the priority of a process owned by that user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addexeclass, sp\_bindexeclass, sp\_dropexeclass, sp\_showexeclass

## sp\_setrowlockpromote

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Sets or changes row-lock promotion thresholds for a datarows-locked table, for all datarows-locked tables in a database, or for all datarows-locked tables on a server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Syntax      | <pre>sp_setrowlockpromote "server", NULL, new_lwm, new_hwm, new_pct<br/>sp_setrowlockpromote {"database"   "table"}, objname, new_lwm,<br/>new_hwm, new_pct</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><b>server</b><br/>sets server-wide values for the row lock promotion thresholds.</p> <p><b>"database"   "table"</b><br/>specifies whether to set the row-lock promotion thresholds for a database or table.</p> <p><b>objname</b><br/>is either the name of the table or database for which you are setting the row-lock promotion thresholds or null, if you are setting server-wide values.</p> <p><b>new_lwm</b><br/>specifies the value to set for the low watermark (LWM) threshold. The LWM must be less than or equal to the high watermark (HWM). The minimum value for LWM is 2. This parameter can be null.</p> <p><b>new_hwm</b><br/>specifies the value to set for the high watermark (HWM) threshold. The HWM must be greater than or equal to the LWM. The maximum HWM is 2,147,483,647. This parameter can be null.</p> <p><b>new_pct</b><br/>specifies the value to set for the lock promotion percentage (PCT) threshold. PCT must be between 1 and 100. This parameter can be null.</p> |
| Examples    | <p><b>Example 1</b> Sets row lock promotion values for all datarows-locked tables in the engdb database:</p> <pre>sp_setrowlockpromote "database", engdb, 400, 400,95</pre> <p><b>Example 2</b> Sets row lock promotion values for the sales table:</p> <pre>sp_setrowlockpromote "table", sales, 250, 250, 100</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"><li>You can display database-level lock promotions using sp_helpdb <i>dbname</i> and table-level locks using sp_helpdb <i>tablename</i>.</li><li>sp_setrowlockpromote sets or changes row-lock promotion thresholds for a table, a database, or Adaptive Server.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Adaptive Server acquires row locks on a datarows-locked table until the number of locks exceeds the lock promotion threshold. If Adaptive Server is successful in acquiring a table lock, the row locks are released.

When the number of row locks on a table exceeds the HWM, Adaptive Server attempts to escalate to a table lock. When the number of row locks on a table is below the LWM, Adaptive Server does not attempt to escalate to a table lock. When the number of row locks on a table is between the HWM and LWM, and the number of row locks exceeds the PCT threshold as a percentage of the number of rows in a table, Adaptive Server attempts to escalate to a table lock.

- Lock promotion is always two-tiered, that is, row locks are promoted to table locks. Adaptive Server does not promote from row locks to page locks.
- Lock promotion thresholds for a table override the database or server-wide settings. Lock promotion thresholds for a database override the server-wide settings.
- To change the lock promotion thresholds for a database, you must be using the master database. To change the lock promotion thresholds for a table in a database, you must be using the database where the table resides.
- Server-wide row lock promotion thresholds can also be set with `sp_configure`. When you use `sp_setrowlockpromote` to change the values server-wide, it changes the configuration parameters, and saves the configuration file. When you first install Adaptive Server, the server-wide row lock promotion thresholds set by the configuration parameters are:

|                        |     |
|------------------------|-----|
| row lock promotion HWM | 200 |
| row lock promotion LWM | 200 |
| row lock promotion PCT | 100 |

See the *System Administration Guide* for more information.

- The system procedure `sp_sysmon` reports on row lock promotions.
- Database-level row lock promotion thresholds are stored in the `master..sysattributes` table. If you dump a database, and load it only another server, you must set the row lock promotion thresholds on the new server. Object-level row lock promotion thresholds are stored in the `sysattributes` table in the user database, and are included in the dump.

Permissions Only a System Administrator can execute `sp_setrowlockpromote`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_configure, sp\_droprolockpromote, sp\_helpdb, sp\_sysmon

## sp\_setsuspect\_granularity

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays or sets the recovery fault isolation mode for a user database, which governs how recovery behaves when it detects data corruption.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | <code>sp_setsuspect_granularity [dbname<br/>[, "database"   "page" [, "read_only"]]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Parameters  | <p><i>dbname</i><br/>is the name of the database for which to display or set the recovery fault isolation mode. For displaying, the default is the current database. For setting, you must be in the master database and specify the target <i>dbname</i>.</p> <p><i>database</i><br/>marks the entire database suspect, which makes it inaccessible, if the recovery process detects that any of its data is suspect.</p> <p><i>page</i><br/>marks only the corrupt pages suspect, making them inaccessible, if recovery detects corrupt data in the database. The rest of the data is accessible.</p> <p><i>read_only</i><br/>if specified, marks the entire database read only if recovery marks any pages suspect.</p> |
| Examples    | <b>Example 1</b> Displays the recovery fault isolation mode for the current database:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

```
sp_setsuspect_granularity
```

| DB Name | Cur. Suspect Gran. | Cfg. Suspect Gran. | Online mode |
|---------|--------------------|--------------------|-------------|
| -----   | -----              | -----              | -----       |
| pubs2   | database           | database           | read/write  |

**Example 2** Displays the current and configured recovery fault isolation mode for the pubs2 database:

```
sp_setsuspect_granularity pubs2
```

**Example 3** The next time recovery runs in the pubs2 database, if any corrupt pages are detected, only the suspect pages will be taken offline and the rest of the database will be brought online:

```
sp_setsuspect_granularity pubs2, "page"
```

| DB Name | Cur. Suspect Gran. | Cfg. Suspect Gran. |
|---------|--------------------|--------------------|
| -----   | -----              | -----              |
| pubs2   | database           | database           |

```
sp_setsuspect_granularity: The new values will become effective
during the next recovery of the database 'pubs2'.
```

**Example 4** The next time recovery runs in the pubs2 database, if any corrupt pages are detected, only the suspect pages will be taken offline and the rest of the database will be brought online in read only mode:

```
sp_setsuspect_granularity pubs2, "page", "read_only"
```

**Example 5** The next time recovery runs in the pubs2 database, if any corrupt data is detected, the entire database will be marked suspect and taken offline:

```
sp_setsuspect_granularity pubs2, "database"
```

#### Usage

- sp\_setsuspect\_granularity displays and sets the recovery fault isolation mode. This mode governs whether recovery marks an entire database or only the corrupt pages suspect when it detects that any data that it requires has been corrupted. See the *System Administration Guide* for more information.
- The default recovery fault isolation mode of a user database is “database”. You can set the recovery fault isolation mode only for a user database, not for a system database.
- You must be in the master database to set the recovery fault isolation mode.
- Data marked suspect due to corruption persists across Adaptive Server start-ups. When certain pages have been marked suspect, they remain offline after you reboot the server.
- When part or all of a database is marked suspect, the suspect data is not accessible to users unless a System Administrator has made the suspect data accessible with the sp\_forceonline\_db and sp\_forceonline\_page procedures.
- General database corruption, such as a corrupt database log or the unavailability of another resource not specific to a page, causes the entire database to be marked suspect, even if the recovery fault isolation mode is “page”.
- If you do not specify page or database, Adaptive Server displays the current and configured settings. The current setting is the one that was in effect the last time recovery was executed in the database. The configured setting is the one that will be in effect the next time recovery is executed in the database.



- If the database comes online in `read_only` mode, no user can modify any of its data, including data that is unaffected by the suspect pages and is thus online. However, the system administrator can make the database writeable using the `sp_dboption` system procedure to set `read only` to `false`. In this case, users could then modify the online data, but the suspect data would remain inaccessible.

**Permissions** Only a System Administrator can execute `sp_setsuspect_granularity` to set the recovery fault isolation mode. Any user can execute `sp_setsuspect_granularity` to display the settings.

**Auditing** Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| <b>Event</b> | <b>Audit option</b>         | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | <code>exec_procedure</code> | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

**See also** **Commands** `dump database`, `dump transaction`, `load database`

**System procedures** `sp_dboption`, `sp_forceonline_db`, `sp_forceonline_page`, `sp_listsuspect_db`, `sp_listsuspect_page`, `sp_setsuspect_threshold`

## sp\_setsuspect\_threshold

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays or sets the maximum number of suspect pages that Adaptive Server allows in a database before marking the entire database suspect.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Syntax      | <code>sp_setsuspect_threshold [dbname [, threshold]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Parameters  | <p><i>dbname</i><br/>is the name of the database for which you want to display or set the suspect escalation threshold. The default is the current database.</p> <p><i>threshold</i><br/>indicates the maximum number of suspect data pages that recovery will allow before marking the entire database suspect. The default is 20 pages. The minimum is 0.</p>                                                                                                                                                                                                         |
| Examples    | <p><b>Example 1</b> Sets the maximum number of suspect pages to 5. If there are more than 5 suspect pages, recovery will mark the entire database suspect:</p> <pre>sp_setsuspect_threshold pubs2, 5</pre> <p><b>Example 2</b> Displays the current and configured settings for the suspect escalation threshold for the pubs2 database:</p> <pre>sp_setsuspect_threshold pubs2</pre> <p><b>Example 3</b> Displays the current and configured settings for the recovery fault isolation threshold for the current user database:</p> <pre>sp_setsuspect_threshold</pre> |
| Usage       | <ul style="list-style-type: none"><li>• You must be in the master database to set the suspect escalation threshold with <code>sp_setsuspect_threshold</code>.</li><li>• If you do not specify the number of pages, Adaptive Server displays the current and configured settings. The current setting is the one that was in effect the last time recovery was executed in the database. The configured setting is the one that will be in effect the next time recovery is executed in the database.</li></ul>                                                          |
| Permissions | Only a System Administrator can execute <code>sp_setsuspect_threshold</code> to set the escalation threshold. Any user can execute <code>sp_setsuspect_threshold</code> to display the current settings.                                                                                                                                                                                                                                                                                                                                                                |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_forceonline\_db, sp\_forceonline\_page, sp\_listsuspect\_db, sp\_listsuspect\_page, sp\_setsuspect\_granularity

## **sp\_setup\_table\_transfer**

|             |                                                                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Run once in each database containing the tables marked for incremental transfer to create the spt_TableTransfer table in this database.                                                                                                                                                            |
| Syntax      | sp_setup_table_transfer                                                                                                                                                                                                                                                                            |
| Usage       | Although it is optional, Sybase recommends you run sp_setup_table_transfer before you transfer a table. If you do not run sp_setup_table_transfer, Adaptive Server automatically creates spt_TableTransfer when a table is marked for incremental transfer or when you perform the first transfer. |
| Permissions | must have the sa_role or be the database owner to run sp_setup_table_transfer.                                                                                                                                                                                                                     |

## sp\_show\_options

|             |                                                                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Prints all the server options that have been set in the current session.                                                                                                                                                                |
| Syntax      | sp_show_options                                                                                                                                                                                                                         |
| Usage       | @@options the array of bits corresponding to server options. For every option, “low” is the byte number in @@options, and “high” is the bit within that byte corresponding to the option. If the bit is set, print name of that option. |

## sp\_showcontrolinfo

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays information about engine group assignments, bound client applications, logins, and stored procedures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | sp_showcontrolinfo [ <i>object_type</i> , <i>object_name</i> , <i>spid</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Parameters  | <p><i>object_type</i></p> <p>is AP for application, LG for login, PR for stored procedure, EG for engine group, or PS for process. If you do not specify an <i>object_type</i> or specify an <i>object_type</i> of null, sp_showcontrolinfo displays information about all types.</p> <p><i>object_name</i></p> <p>is the name of the application, login, stored procedure, or engine group. Do not specify an <i>object_name</i> if you specify PS as the <i>object_type</i>. If you do not specify an <i>object_name</i> (or specify an <i>object_name</i> of null), sp_showcontrolinfo displays information about all object names.</p> <p><i>spid</i></p> <p>is the Adaptive Server process ID. Specify an <i>spid</i> only if you specify PS as the <i>object_type</i>. If you do not specify an <i>spid</i> (or specify an <i>spid</i> of null), sp_showcontrolinfo displays information for all spids. Use sp_who to see spids.</p> |
| Examples    | <p><b>Example 1</b> Shows all user-assigned execution class-to-object bindings:</p> <pre>sp_showcontrolinfo</pre> <p><b>Example 2</b> Displays the execution class of the isql application:</p> <pre>sp_showcontrolinfo 'AP', 'isql'</pre> <p><b>Example 3</b> Displays the execution class for all processes assigned to engine groups:</p> <pre>sp_showcontrolinfo 'PS'</pre> <p><b>Example 4</b> Displays the execution class for spid 7:</p> <pre>sp_showcontrolinfo 'PS', null, 7</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Usage       | <ul style="list-style-type: none"><li>When used with no parameters, sp_showcontrolinfo displays information about all user-assigned engine group assignments, bound client applications, logins, and stored procedures. When used with the <i>object_type</i> parameter, sp_showcontrolinfo provides information on an individual basis about application, login, or stored procedure bindings to an execution class, engine group compositions, and session-level attribute bindings. See the <i>Performance and Tuning Guide</i> for more information.</li></ul>                                                                                                                                                                                                                                                                                                                                                                         |

- Unless `object_type` is PR, execute `sp_showcontrolinfo` from the master database. If `object_type` is PR, execute `sp_showcontrolinfo` from the database in which the procedure resides.
- If `object_type` is null, `sp_showcontrolinfo` displays execution class information for objects that match the other parameters.
- If `object_name` is null, `sp_showcontrolinfo` displays the binding information for all applications, logins, and stored procedures.
- If `spid` is null, `sp_showcontrolinfo` displays execution class information for objects that match the other parameters.

Permissions Any user can execute `sp_showcontrolinfo`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_addexeclass`, `sp_bindexeclass`, `sp_clearpsexec`, `sp_dropengine`, `sp_dropexeclass`, `sp_showexeclass`, `sp_showpsexec`, `sp_unbindexeclass`, `sp_who`

**Utility** `isql`

## sp\_showexeclass

**Description** Displays the execution class attributes and the engines in any engine group associated with the specified execution class.

**Syntax** sp\_showexeclass [execlassname]

**Parameters** *execlassname*  
is the name of an execution class.

**Examples** **Example 1** Displays the priority and engine group attribute values for all execution classes:

```
sp_showexeclass
-----
classname  priority  engine_group  engines
-----
EC1         HIGH     ANYENGINE     ALL
EC2         MEDIUM  ANYENGINE     ALL
EC3         LOW      LASTONLINE    0
```

**Example 2** Displays the attribute values of execution class EC1:

```
sp_showexeclass 'EC1'
-----
classname  priority  engine_group  engines
-----
EC1         HIGH     ANYENGINE     ALL
```

**Usage**

- sp\_showexeclass displays the execution class attributes and the engines in any engine group associated with *execlassname*. See the *Performance and Tuning Guide* for more information.
- If *execlassname* is NULL or absent, sp\_showexeclass displays the priority and engine group attribute values for all execution classes, including the attribute values of the system-defined classes EC1, EC2, and EC3.

**Permissions** Any user can execute sp\_showexeclass.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:



| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addexeclass, sp\_bindexeclass, sp\_dropexeclass, sp\_showcontrolinfo, sp\_unbindexeclass

## sp\_showplan

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays the showplan output for any user connection for the current SQL statement or for a previous statement in the same batch.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <pre>sp_showplan <i>spid</i>, <i>batch_id</i> output,<br/>           <i>context_id</i> output,<br/>           <i>stmt_num</i> output</pre> <p>To display the showplan output for the current SQL statement without specifying the <i>batch_id</i>, <i>context_id</i>, or <i>stmt_num</i>:</p> <pre>sp_showplan <i>spid</i>, null, null, null</pre>                                                                                                                                                                                                                                                                                                                                                                                                   |
| Parameters  | <p><i>spid</i><br/>is the process ID for any user connection. Use <code>sp_who</code> to see spids.</p> <p><i>batch_id</i><br/>is a unique, nonnegative number for a batch</p> <p><i>context_id</i><br/>is a unique number for every procedure (or trigger) executed in a batch.</p> <p><i>stmt_num</i><br/>is the number of the current statement within a batch. The <i>stmt_num</i> must be a positive number.</p>                                                                                                                                                                                                                                                                                                                                |
| Examples    | <p><b>Example 1</b> Displays the query plan for the current statement running in the user session with a <i>spid</i> value of 99, as well as values for the <i>batch_id</i>, <i>context_id</i>, and <i>statement_id</i> parameters. These values can be used to retrieve query plans in subsequent iterations of <code>sp_showplan</code> for the user session with a <i>spid</i> of 99:</p> <pre>declare @batch int<br/>declare @context int<br/>declare @statement int<br/>exec sp_showplan 99, @batch output, @context output,<br/>@statement output</pre> <p><b>Example 2</b> Displays the showplan output for the current statement running in the user session with a <i>spid</i> value of 99:</p> <pre>sp_showplan 99, null, null, null</pre> |
| Usage       | <ul style="list-style-type: none"><li>• <code>sp_showplan</code> displays the showplan output for a currently executing SQL statement or for a previous statement in the same batch.</li><li>• To see the query plan for the previous statement within the same batch, execute <code>sp_showplan</code> again with the same parameter values, but subtract 1 from the statement number. Using this method, you can view all the statements in the statement batch back to query number one.</li></ul>                                                                                                                                                                                                                                                |

- `sp_showplan` can be run independently of Adaptive Server Monitor™ Server.
- If the `context_id` is greater than 0 for a SQL batch, the current statement is embedded in a stored procedure (or trigger) called from the original SQL batch. Select the `sysprocesses` row with the same `spid` value to display the procedure ID and statement ID.

Permissions Only a System Administrator can execute `sp_showplan`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_who`

## sp\_showpsex

**Description** Displays execution class, current priority, and affinity for all client sessions running on Adaptive Server.

**Syntax** sp\_showpsex [spid]

**Parameters** *spid*  
 is the Adaptive Server session ID for which you want a report. The *spid* must belong to the application or login executing sp\_showpsex. Use sp\_who to list spids.

**Examples** **Example 1** Displays execution class, current priority, and affinity for all current client sessions:

```
sp_showpsex
```

| spid | appl_name | login_name | exec_class | current_priority | task_affinity |
|------|-----------|------------|------------|------------------|---------------|
| 1    | isql      | sa         | EC1        | HIGH             | NONE          |
| 5    |           | NULL       | NULL       | LOW              | NULL          |
| 7    | ctisql    | sa         | EC2        | MEDIUM           | NONE          |
| 8    | ctisql    | sa         | EC2        | MEDIUM           | NONE          |

**Example 2** Displays the application name, login name, current priority, and engine affinity of the process with spid 5:

```
sp_showpsex 5
```

**Usage**

- sp\_showpsex displays execution class, current priority, and affinity for all sessions (objects with an *spid*). For more information, see the Performance and Tuning Guide.
- If the *spid* is NULL or absent, sp\_showpsex reports on all sessions currently running on Adaptive Server.
- sp\_showpsex does not report information for the following system processes: deadlock, checkpoint, network, auditing, and mirror handlers. It does display information for the housekeeper *spid*.

**Permissions** Any user can execute sp\_showpsex.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**System procedures** sp\_addengine, sp\_addexeclass, sp\_bindexeclass, sp\_clearpsexec, sp\_dropengine, sp\_dropexeclass, sp\_showcontrolinfo, sp\_showexeclass, sp\_unbindexeclass

## sp\_spaceusage

**Description** Reports the space usage for a table, index, or transaction log and estimates the amount of fragmentation for tables and indexes in a database. The estimates are computed using an average row-length for data and index rows, and the number of rows in a table. You can archive the space usage and fragmentation data for future reporting and trends analysis. sp\_spaceusage supports a number of actions, including help, display, archive and report, to indicate the current Adaptive Server space usage.

**Syntax** The “help” action syntax:

```
sp_spaceusage 'help' [, 'all']
sp_spaceusage 'help' [, {'display' | 'display summary'
                          | 'report' | 'report summary' | 'archive'}
                    [, {'table' | 'index' | 'tranlog'}]]
```

The “display” action syntax:

```
sp_spaceusage 'display summary [using unit= {KB | MB | GB | PAGES}
]',
    {'table' | 'index'}, name
    [, where_clause [, order_by [, command ] ] ]
sp_spaceusage 'display [using unit= {KB | MB | GB | PAGES} ]',
    {'table' | 'index'}, name
    [, select_list
    [, where_clause [, order_by [, command ] ] ] ]
sp_spaceusage 'display [using unit={KB | MB | GB | PAGES} ]',
    'tranlog' [, name [, select_list [, where_clause [, order_by]]]]
```

The “archive” action syntax:

```
sp_spaceusage 'archive [ using_clause ]',
    {'table' | 'index'}, name [, where_clause [, command ] ]
sp_spaceusage 'archive [ using_clause ]',
    'tranlog' [, name [, where_clause ] ]
```

The “report” action syntax:

```
sp_spaceusage 'report summary [ using_clause ]',
    {'table' | 'index'}, name
    [, where_clause [, order_by [, from_date [, to_date]]]]
sp_spaceusage 'report [ using_clause ]',
    {'table' | 'index'}, name
    [, select_list [, where_clause [, order_by [, from_date [, to_date]]]]]]
sp_spaceusage 'report [ using_clause ]',
    'tranlog' [, name
    [, select_list [, where_clause [, order_by
```

```

[,from_date [,to_date]]]]]]
using_clause = USING using_item [, using_item ...]
using_item = { unit={ KB | MB | GB | PAGES }
              | dbname=database_name | prefix=string }

```

## Parameters

## help

displays the entire `sp_spaceusage` syntax. `help action` displays the syntax for individual actions supported..

## display

displays current space usage information for the specified objects.

## display summary

displays a summary of current space usage information for the specified objects.

## archive

archives the space usage report to a table. If the archive table does not already exist, `sp_spaceusage` creates one. New data is appended to existing data. You can specify a prefix for the archive table name and the database in which the archive table resides with the `using` clause.

## report

reports the space usage information for the specified objects from previously archived data. The output is same as the `display` action. Include the optional `using` clause to specify the archive table.

## report summary

reports a summary of space usage information for the specified objects from previously archived data. The output is same as the `display summary` action. Include the optional `using` clause to specify the archive table.

*using\_item*

specifies the unit, archive database name, and prefix string for the archive table. You can use a *unit* size of kilobytes (KB), megabytes (MB), gigabytes (GB), and pages. By default *unit* size is KB, the current database is the archive database, and no prefix string is assumed.

*name*

is the name of the entity. Depending on the entity type, you can include multipart names such as *owner\_name.table\_name*, or *owner\_name.table\_name.index\_name*. For the entity type `tranlog`, the name must be `syslogs` or `NULL`. Pattern specifiers are allowed for each part of a multipart name to support reporting on multiple objects in one pass.

*select\_list*

is the comma-separated list of columns to select in the output columns for the display and report actions. Use \* to include all columns in the output. Columns can be renamed using the *alias=name* notation.

*where\_clause*

is the filter to apply to the result set. Use with the display, report, or archive actions to selectively filter unnecessary data.

*order\_by*

returns query results in the specified columns in sorted order.

*command*

command run on the entity selected (table, column, or so on) prior to gathering the space usage information for qualifying objects. The following commands are supported: update statistics, update table statistics, and update index statistics.

*from\_date*

specifies beginning of the time range you are interested in.

*to\_date*

specifies end of the time range you are interested in.

Examples

**Example 1** Displays a brief description, syntax, and usage information for the display action:

```
sp_spaceusage 'help', 'display'
```

Display the space usage information for an entity in the current database.

Usage:

```
sp_spaceusage 'display', {'table'|'index'}, <name>  
[,<select_list> [,<where_clause> [,<order_by> [,<command>]]]]
```

```
sp_spaceusage 'display summary', {'table'|'index'}, <name>  
[,<where_clause> [,<order_by> [,<command>]]]
```

```
sp_spaceusage 'display', 'tranlog' [,{ 'syslogs'|NULL}  
[,<select_list> [,<where_clause> [,<order_by>]]]]
```

For more information, use:

```
sp_spaceusage 'help', 'display', 'table'  
sp_spaceusage 'help', 'display', 'index'  
sp_spaceusage 'help', 'display', 'tranlog'
```

**Example 2** Displays a summary of the space usage on the titles table:

```
sp_spaceusage 'display summary', 'table', 'titles'
```



All the page counts in the result set are in the unit 'KB'.

| OwnerName | TableName | Type  | UsedPages | RsvdPages | ExpRsvdPages | PctBloatRsvdPages |
|-----------|-----------|-------|-----------|-----------|--------------|-------------------|
| dbo       | titles    | DATA  | 6.0       | 30.0      | 16.0         | 87.50             |
| dbo       | titles    | INDEX | 8.0       | 64.0      | 32.0         | 50.00             |

**Example 3** Displays the space usage information for the titles table:

```
sp_spaceusage 'display', 'table', 'titles'
```

All the page counts in the result set are in the unit 'KB'.

| OwnerName  | TableName    | IndId            | NumRows           | UsedPages | RsvdPages |
|------------|--------------|------------------|-------------------|-----------|-----------|
| ExtentUtil | ExpRsvdPages | PctBloatUsePages | PctBloatRsvdPages |           |           |
| dbo        | titles       | 0                | 18.0              | 6.0       | 30.0      |
| 20.00      | 16.0         | 0.0              | 87.50             |           |           |
| dbo        | titles       | 1                | NULL              | 4.0       | 32.0      |
| 12.50      | 16.0         | 0.00             | 100.00            |           |           |
| dbo        | titles       | 2                | NULL              | 4.0       | 32.0      |
| 12.50      | 16.0         | 0.00             | 100.00            |           |           |

**Example 4** Displays the space usage information, in megabytes, for all indexes on the titles table whose names start with title:

```
sp_spaceusage 'display using unit-MB', 'index', 'titles.title%'
```

All the page counts in the result set are in the unit 'MB'.

| OwnerName  | TableName    | IndId             | IndexName         | UsedPages  | RsvdPages  |
|------------|--------------|-------------------|-------------------|------------|------------|
| ExtentUtil | ExpRsvdPages | PctBloatUsedPages | PctBloatRsvdPages |            |            |
| dbo        | titles       | 0                 | titles            | .005859375 | .029296875 |
| 20.00      | .015625      | 0.00              | 87.50             |            |            |
| dbo        | titles       | 1                 | titleidind        | .00390625  | .03125     |
| 12.50      | .015625      | 0.00              | 100.00            |            |            |
| dbo        | titles       | 2                 | titleind          | .00390625  | .03125     |
| 12.50      | .015625      | 0.00              | 100.00            |            |            |

(1 row affected)

(return status = 0)

**Example 5** Displays a summary of the space usage for all index names starting with *title* in the titles table:

```
sp_spaceusage 'display summary', 'index', 'titles.title%'
```

All the page counts in the result set are in the unit of 'KB'.

| OwnerName | TableName | IndexName | IndId | UsedPages | RsvdPages | ExpRsvdPages | PctBloatRsvdPages |
|-----------|-----------|-----------|-------|-----------|-----------|--------------|-------------------|
|-----------|-----------|-----------|-------|-----------|-----------|--------------|-------------------|

```

-----
-----
dbo      titles      titles      0      6.0      30.0      16.0
46.67
dbo      titles      titleidind  1      4.0      32.0      16.0
50.00

dbo      titles      titleind    2      4.0      32.0      16.0
50.00

```

**Example 6** Displays a summary of the space usage for all indexes starting with *title* in the titles table where the value of PctBloatRsvdPages is less than 50:

```

sp_spaceusage 'display summary', 'index', 'titles.title%',
'where PctBloatRsvdPages < 50'

```

All the page counts in the result set are in the unit 'KB'.

```

OwnerName  TableName  IndexName  IndId  UsedPages  RsvdPages  ExpRsvdPages
PctBloatRsvdPages
-----
-----
dbo      titles      titles      0      6.0      30.0      16.0
46.67

```

**Example 7** Displays a summary of the space usage for all indexes in the titles table in descending order of PctBloatRsvdPages where the value of PctBloatRsvdPages is greater than 30:

```

1> sp_spaceusage 'display summary', 'index', 'titles.title%', 'where
PctBloatRsvdPages > 30', 'order by PctBloatRsvdPages desc'

```

All the page counts in the result set are in the unit 'KB'.

```

OwnerName  TableName  IndexName  IndId  UsedPages  RsvdPages  ExpRsvdPages
PctBloatRsvdPages
-----
-----
dbo      titles      titleidind  1      4.0      32.0      16.0
50.00
dbo      titles      titleind    2      4.0      32.0      16.0
50.00
dbo      titles      titles      0      6.0      30.0      16.0
46.67

```

**Example 8** Runs update table statistics on the authors table and summarizes its space usage information in the unit *pages*:

```

sp_spaceusage 'display summary using unit=pages', 'table', 'authors', null,
null, null, 'update table statistics'

```

All the page counts in the result set are in the unit 'pages'.

| OwnerName | TableName | Type  | UsedPages | RsvdPages | ExpRsvdPages | PctBloatRsvdPages |
|-----------|-----------|-------|-----------|-----------|--------------|-------------------|
| dbo       | authors   | DATA  | 2.0       | 16.0      | 8.0          | 100.00            |
| dbo       | authors   | INDEX | 4.0       | 32.0      | 16.0         | 50.00             |

**Example 9** Displays the space usage information for the transaction log of the current database (pubs2):

```
sp_spaceusage 'display', 'tranlog'
```

| TableName | TotalPages | UsedPages | CLRPages | FreePages | PctUsedPages | PctFreePages |
|-----------|------------|-----------|----------|-----------|--------------|--------------|
| syslogs   | 4096.0     | 18.0      | 0.0      | 1482.0    | 0.43         | 36.18        |

**Example 10** Archives the space usage information for the authors table in the current database into the default table (spaceusage\_object for tables and indexes):

```
sp_spaceusage 'archive', 'table', 'authors'
```

Data was successfully archived into table 'pubs2.dbo.spaceusage\_object'.

**Example 11** Archives the space usage information for the authors table into the default table (spaceusage\_object for tables and indexes) in the pubs3 database, :

```
sp_spaceusage 'archive using dbname = pubs3', 'table', 'authors'
```

Data was successfully archived into table 'pubs3.dbo.spaceusage\_object'.

**Example 12** Runs update table statistics on the authors table and archives its space usage information into a table in the current database with the prefix monday\_ (for this example, monday\_spaceusage\_object)

```
1> sp_spaceusage 'archive using dbname = pubs2, prefix=monday_',
'table','authors', null, 'update table statistics'
```

**Example 13** Archives the space usage information for the transaction log of the current database into the default table (spaceusage\_tranlog for transaction logs) in the pubs3 database, :

```
sp_spaceusage 'archive using dbname=pubs3', 'tranlog'
```

Data was successfully archived into table 'pubs3.dbo.spaceusage\_tranlog'.

**Example 14** Reports in detail the last archived space usage information for the authors table from the default table (spaceusage\_object for table or index) in the current database:

```
sp_spaceusage 'report', 'table', 'authors'
```



All the page counts in the result set are in the unit 'KB'.

| ArchiveDateTime     | OwnerName  | TableName    | IndId    | IndexName | UsedPages         |
|---------------------|------------|--------------|----------|-----------|-------------------|
| RsvdPages           | ExtentUtil | ExpRsvdPages | PctBloat | UsedPages | PctBloatRsvdPages |
| Jun 9 2007 12:06AM  | dbo        | authors      | 0        | authors   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 10 2007 12:05AM | dbo        | authors      | 0        | authors   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 11 2007 11:35PM | dbo        | authors      | 0        | authors   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 9 2007 12:06AM  | dbo        | authors      | 1        | auidind   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 10 2007 12:05AM | dbo        | authors      | 1        | auidind   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 11 2007 11:35PM | dbo        | authors      | 1        | auidind   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.      |                   |
| Jun 9 2007 12:06AM  | dbo        | authors      | 2        | aunmind   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 10 2007 12:05AM | dbo        | authors      | 2        | aunmind   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |
| Jun 11 2007 11:35PM | dbo        | authors      | 2        | aunmind   | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     | 100.00    |                   |

(1 row affected)  
(return status = 0)

**Example 18** Reports the space usage information for the authors table from the default table in the current database archived between Jun 10 2007 and Jun 15 2007:

```
sp_spaceusage 'report', 'table', 'authors', null, null, null, 'Jun 10 2007', 'Jun 15 2007'
```

All the page counts in the result set are in the unit 'KB'.

| ArchiveDateTime     | OwnerName  | TableName    | IndId    | NumRows   | UsedPages         |
|---------------------|------------|--------------|----------|-----------|-------------------|
| RsvdPages           | ExtentUtil | ExpRsvdPages | PctBloat | UsedPages | PctBloatRsvdPages |
| Jun 10 2007 12:05AM | dbo        | authors      | 0        | 23.0      | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     |           | 100.00            |
| Jun 11 2007 11:35PM | dbo        | authors      | 0        | 23.0      | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     |           | 100.00            |
| Jun 13 2007 11:46PM | dbo        | authors      | 0        | 23.0      | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     |           | 100.00            |
| Jun 14 2007 11:46PM | dbo        | authors      | 0        | 23.0      | 4.0               |
| 32.0                | 12.50      | 16.0         | 0.00     |           | 100.00            |

```

Jun 14 2007 11:46PM dbo authors 0 23.0 4.0
32.0 12.50 16.0 0.00 100.00
Jun 10 2007 12:05AM dbo authors 1 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 11 2007 11:35PM dbo authors 1 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 13 2007 11:46PM dbo authors 1 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 14 2007 11:46PM dbo authors 1 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 14 2007 11:46PM dbo authors 1 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 10 2007 12:05AM dbo authors 2 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 11 2007 11:35PM dbo authors 2 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 13 2007 11:46PM dbo authors 2 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 14 2007 11:46PM dbo authors 2 NULL 4.0
32.0 12.50 16.0 0.00 100.00
Jun 14 2007 11:46PM dbo authors 2 NULL 4.0
32.0 12.50 16.0 0.00 100.00

```

```

(1 row affected)
(return status = 0)

```

Usage

- sp\_spaceusage provides space usage information for tables, indexes, and the transaction log of the current database.
- The set of columns that appear in the sp\_spaceusage output depend on the action and entity type. By default, only a standard set of columns are displayed. However, you can include others with the *select\_list* parameter, and you can view them all with the \* wildcard in the select list. Table 1-37 and Table 1-38 provide the set of all output column names and their description for the entity types table, index and tranlog, respectively. Column names in the *select\_list*, *where\_clause*, *orderby\_clause* parameters must belong to the set listed in these tables..

**Table 1-37: Output columns for table or index entity types**

| Column name     | Description                         |
|-----------------|-------------------------------------|
| ArchiveDateTime | Timestamp of the data               |
| ServerName      | Server name                         |
| MaxPageSize     | Logical page size, in @@maxpagesize |
| DBName          | Object's database name              |
| OwnerName       | Object's owner name                 |

| <b>Column name</b> | <b>Description</b>                                           |
|--------------------|--------------------------------------------------------------|
| TableName          | Table name                                                   |
| Id                 | ID of the table                                              |
| IndId              | ID of the index                                              |
| IndexName          | Index name                                                   |
| PtnId              | ID of the partition                                          |
| PtnName            | Partition name                                               |
| DataPtnID          | ID of the data partition whose data the index covers         |
| RowSize            | Number of rows in the partition                              |
| RowCount_ts        | Number of rows in the partition as per the systabstats table |
| NumFwdRows         | Number of forwarded rows in the partition                    |
| NumDelRows         | Number of deleted rows in the partition                      |
| PctFwdRows         | Percentage of rows that were forwarded in the partition      |
| NonLeafRowSize     | Average non-leaf row size in the partition                   |
| FF                 | Fill factor in the partition                                 |
| MRPP               | Maximum number of rows per page in the partition             |
| ERS                | Expected row size in the partition                           |
| RPG                | Reserve page gap in the partition                            |
| IndexHeight        | Height of the index tree in the partition                    |
| OAMAPageCount      | Number of OAM and AP pages (in pages)                        |
| Extent0PageCount   | Number of pages in the extent 0 (in pages)                   |
| Status             | status from sysindexes table                                 |
| Sysstat            | sysstat from sysobjects table                                |
| Sysstat2           | sysstat2 from sysobjects table                               |
| LockScheme         | Lock scheme of the table                                     |
| NumVarCols         | Number of variable columns the table has                     |
| HasAPLCI           | Indicates whether the table has an APL CI                    |
| SpUtil             | Space utilization derived statistic for the partition        |
| DPCR               | Data page cluster ratio derived statistic for the partition  |
| DRCR               | Data row cluster ratio derived statistic for the partition   |
| IPCR               | Index page cluster ratio derived statistic for the partition |
| LGIO               | Large IO efficiency derived statistic for the partition      |
| ExtentUtil         | Extent utilization for the partition                         |
| EmptyPages         | Number of empty pages in the partition (in units)            |
| DataPages          | Number of data pages in the partition (in units)             |
| UsedPages          | Number of used pages in the partition (in units)             |
| RsvdPages          | Number of pages reserved in the partition (in units)         |
| LeafPages          | Number of leaf pages in the partition (in units)             |

| Column name       | Description                                                                             |
|-------------------|-----------------------------------------------------------------------------------------|
| ExpDataPages      | Expected number of data pages in the partition had the data been compact (in units)     |
| ExpUsedPages      | Expected number of used pages in the partition had the data been compact (in units)     |
| ExpRsvdPages      | Expected number of reserved pages in the partition had the data been compact (in units) |
| ExpLeafPages      | Expected height of the index tree in the partition had the data been compact            |
| PctBloatUsedPages | Percentage bloat in the used pages in the partition                                     |
| PctBloatRsvdPages | Percentage bloat in the reserved pages in the partition                                 |
| PctBloatLeafPages | Percentage bloat in the leaf pages in the partition                                     |
| PctEmptyPages     | Percentage of data pages that were empty in the partition                               |

**Table 1-38: Parameters available for the tranlog entity type**

| Column Name     | Description                                                   |
|-----------------|---------------------------------------------------------------|
| ArchiveDateTime | The timestamp of the data                                     |
| ServerName      | The server name                                               |
| MaxPageSize     | The logical page size set in @@maxpagesize                    |
| DBName          | The object's database name                                    |
| OwnerName       | The object's owner name                                       |
| TableName       | The name of the transaction log, for example, syslogs         |
| Id              | ID of the syslogs table                                       |
| IsMLD           | Is it "mixed log and data" transaction log?                   |
| IsLogFull       | Is the transaction log full?                                  |
| LCTPages        | The "last chance threshold" value of the log (in units)       |
| TotalPages      | Total number of log pages (in units)                          |
| UsedPages       | The number of log pages already used (in units)               |
| CLRPages        | The number of log pages reserved for rollbacks (in units)     |
| FreePages       | The number of log pages that has not been used yet (in units) |
| PctUsedPages    | The percentage of log pages that are in use already           |
| PctFreePages    | The percentage of log pages that are free                     |

- The PctBloatUsedPages and PctBloatReservedPages columns give an estimate of how many more pages than the minimum the table is using and reserving, respectively. These values indicate how beneficial it may be for you to run reorg rebuild on the table.

ExtentUtil is the ratio of the number of pages that are actually being used against the number of pages that are reserved for the object. Values closer to 100 indicate that most of the pages in the extents reserved for the object are currently used. Table 1-39 gives a synopsis of the measurements.



**Table 1-39: Interpreting PctBloatUsedPages and PctBloatReservedPages values**

| <b>PctBloatUsed – Pages value</b> | <b>PctBloatReserved – Pages value</b> | <b>Interpretation</b>                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Close to 0, low value             | Close to 0, low value                 | Indicates the table is well compacted, and all allocated pages and allocation units are used completely. ExtentUtil should be close to 1.0                                                                                                                                                                                                                                                                                   |
| Close to 0, low value             | Not close to 0, high value            | Indicates the used pages are well compacted, but the table's extents are under-utilized, and there is a large degree of interpage fragmentation, possibly due to large-scale deletions or empty pages. The unusedpgcnt in systabstats is probably also high. The high value of PctBloatReservedPages suggests that ExtentUtil is probably much less than 1.0. You can probably resolve most issues by running reorg rebuild. |
| Not close to 0, high value        | Close to 0, low value                 | Indicates a large degree of intrapage fragmentation, but a smaller degree of inter-page fragmentation. Because the extent utilization is probably high, ExtentUtil value should be close to 1.0.<br><br>Running reorg compact will probably help resolve these issues.                                                                                                                                                       |
| Not close to 0, high value        | Not close to 0, high value            | A high value for PctBloatUsedPages indicates a large degree of intrapage fragmentation, where data rows in used pages are not fully compacted (the used pages contain most of the free space). Because interpage and intrapage fragmentation may cause the high value of PctBloatReservedPages, the value of Extent_Util may still be less than 1.0. Running reorg compact and reorg rebuild may resolve these issues.       |

- The database in which you are archiving the space usage data must have `sp_dboption ... select into enabled`.
- The archive tables are created if they do not already exist at the time of archiving, otherwise the results are appended to the current table. Because of this, any user running `sp_spaceusage` must have `create table` permission in the archive database.
- While archiving or reporting data, only tables owned by the user running `sp_spaceusage` are considered for the archive table. Tables with the same name but owned by another user are ignored. By default, the results are archived to or reported from the `spaceusage_object` table for tables or indexes and `spaceusage_tranlog` for the transaction log. .

- You can use the *from\_date* and *to\_date* arguments only for the report action when reporting from archived data. Adaptive Server uses only the data in the archive table that falls within the specified time-range when generating the report. If you do not include a *from\_date* or a NULL, Adaptive Server uses all archived data prior to the *to\_date*. If you do not include a *to\_date* or NULL, Adaptive Server uses the current date as the value for *to\_date*. If you do not include either the *from\_date* or *to\_date*, Adaptive Server uses the most recent data in the archive table to generate the report.
- *sp\_spaceusage* results are estimated based on statistical data. These estimates are only as good the statistics provided. You can run update statistics to improve the accuracy of the results.

Permissions

Any user can run *sp\_spaceusage*. However, they may not be able to view certain information about tables that they do not have permissions to view.

## sp\_spaceused

|             |                                                                                                                                                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays estimates of the number of rows, the number of data pages, the size of indexes, and the space used by a specified table or by all tables in the current database.                                                          |
| Syntax      | <code>sp_spaceused [objname [,1]]</code>                                                                                                                                                                                            |
| Parameters  | <p><i>objname</i><br/>is the name of the table on which to report. If omitted, a summary of space used in the current database appears.</p> <p>1<br/>prints separate information on the table's indexes and text/image storage.</p> |
| Examples    | <p><b>Example 1</b> Reports on the amount of space allocated (reserved) for the titles table, the amount used for data, the amount used for index(es), and the available (unused) space:</p>                                        |

```
sp_spaceused titles
name          rowtotal   reserved   data      index_size  unused
-----
titles        18          46 KB     6 KB     4 KB       36 KB
```

**Example 2** In addition to information on the titles table, prints information for each index on the table:

```
sp_spaceused titles, 1
index_name          size          reserved   unused
-----
titleidind          2 KB         32 KB     24 KB
titleind            2 KB         16 KB     14 KB

name          rowtotal   reserved   data      index_size  unused
-----
titles        18          46 KB     6 KB     4 KB       36 KB
```

**Example 3** Displays the space taken up by the text/image page storage separately from the space used by the table. The object name for text/image storage is "t" plus the table name:

```
sp_spaceused blurbs,1
index_name          size          reserved   unused
-----
blurbs              0 KB         14 KB     12 KB
tblurbs             14 KB         16 KB     2 KB
```

| name   | rowtotal | reserved | data | index_size | unused |
|--------|----------|----------|------|------------|--------|
| blurbs | 6        | 30 KB    | 2 KB | 14 KB      | 14 KB  |

**Example 4** Prints a summary of space used in the current database:

```
sp_spaceused
database_name  database_size
-----
master        5 MB
reserved      data      index_size  unused
-----
2176 KB      1374 KB    72 KB      730 KB
```

**Example 5** Reports on the amount of space reserved and the amount of space available for the transaction log:

```
sp_spaceused syslogs
name          rowtotal  reserved  data    index_size  unused
-----
syslogs      Not avail. 32 KB    32 KB   0 KB        0 KB
```

**Usage**

- sp\_spaceused displays estimates of the number of data pages, space used by a specified table or by all tables in the current database, and the number of rows in the tables. sp\_spaceused computes the rowtotal value using the rowcnt built-in function. This function uses a value for the average number of rows per data page based on a value in the allocation pages for the object. This method is very fast, but the results are estimates, and update and insert activity change actual values. The update statistics command, dbcc checktable, and dbcc checkdb update the rows-per-page estimate, so rowtotal is most accurate after one of these commands executes. Always use select count(\*) if you need exact row counts.
- sp\_spaceused reports on the amount of space affected by tables, clustered indexes, and nonclustered indexes.
- The amount of space allocated (reserved) reported by sp\_spaceused is a total of the data, index size, and available (unused) space.
- Space used by text and image columns, which are stored as separate database objects, is reported separately in the index\_size column and is included in the summary line for a table. The object name for text/image storage in the index\_size column is “t” plus the table name.

- When used on syslogs, sp\_spaceused reports rowtotal as “Not available”. See Example 5.

Permissions Any user can execute sp\_spaceused.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Catalog stored procedures** sp\_statistics

**Commands** create index, create table, drop index, drop table

**System procedures** sp\_helpindex

## sp\_ssladmin

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Adds, deletes, or displays a list of server certificates for Adaptive Server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <pre>sp_ssladmin {[addcert, <i>certificate_path</i> [, <i>password</i>   NULL]]              [dropcert, <i>certificate_path</i>]              [lscert]              [help]}              [lsciphers]              [setciphers,              {"FIPS"   "Strong"   "Weak"   "All"   <i>quoted_list_of_ciphersuites</i>}]</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Parameters  | <p><b>addcert</b><br/>adds a certificate for the local server in the certificates file.</p> <p><b><i>certificate_path</i></b><br/>specifies the absolute path to the certificates file on the local server.</p> <p><b><i>password</i></b><br/>the password that is used to encrypt the private key when adding a new server certificate to the certificates file.</p> <p><b>NULL</b><br/>used to require an attended start-up of Adaptive Server by requesting the password during start-up from the command line.</p> <p><b>dropcert</b><br/>deletes the certificate from the certificate file.</p> <p><b>lscert</b><br/>lists the certificates in the certificate file.</p> <p><b>help</b><br/>displays online help for sp_ssladmin.</p> <p><b>lsciphers</b><br/>displays the values for any set cipher suite preferences.</p> |

setciphers, {"FIPS" | "Strong" | "Weak" | "All" | *quoted\_list\_of\_ciphersuites*}) sets a specific cipher suite preference. Select one of these options:

- “FIPS” – is the set of encryptions, hash, and key exchange algorithms that are FIPS-compliant. The algorithms included in this list are AES, 3DES, DES, and SHA1.
- “Strong” – is the set of encryption algorithms using keys longer than 64 bits.
- “Weak” – is the set of encryption algorithms from the set of all supported cipher suites that are not included in the strong set.
- “All” – is the set of default cipher suites.
- *quoted\_list\_of\_ciphersuites* – specifies a set of cipher suites as a comma-separated list, ordered by preference. Use quotes (“ ”) to mark the beginning and end of the list. The quoted list can include any of the predefined sets as well as individual cipher suite names. Unknown cipher suite names cause an error to be reported, and no changes are made to preferences. See Chapter 19, “Confidentiality of Data,” in the System Administration Guide for the list of cipher suites included in the defined sets.

#### Examples

**Example 1** Adds an entry for the local server, Server1.crt, in the certificates file in the absolute path to `/sybase/ASE-12_5/certificates` (`x:\sybase\ASE-12_5\certificates` on Windows). The private key is encrypted with the password “mypassword”. The password should be the one specified when you created the private key:

```
sp_ssladmin addcert, "/sybase/ASE-12_5/certificates/Server1.crt",
"mypassword"
```

**Example 2** Deletes the certificate, Server1.crt from the certificates file located in `/sybase/ASE-12_5/certificates` (`x:\sybase\ASE-12_5\certificates` on Windows):

```
sp_ssladmin dropcert , "/sybase/ASE-12_5/certificates/Server1.crt"
```

**Example 3** Lists of all server certificates on the local server:

```
sp_ssladmin lscert
go

certificate_path
-----
/sybase/ASE-12_5/certificates/Server1.crt
```

**Example 4** On initial startup, before any cipher suite preferences have been set, no preferences are shown by `sp_ssladmin lscipher`.

```
1> sp_ssladmin lscipher
2> go

Cipher Suite Name Preference
-----
(0 rows affected)
(return status = 0)
```

This example specifies the set of cipher suites that use FIPS algorithms:

```
1> sp_ssladmin setcipher, 'FIPS'
2> go
```

A preference of 0 (zero) sp\_ssladmin output indicates a cipher suite is not used by Adaptive Server. The other, non-zero numbers, indicate the preference order that Adaptive Server uses the algorithm during the SSL handshake. The client side of the SSL handshake chooses one of these cipher suites that matches its list of accepted cipher suites.

**Example 5** Uses a quoted list of cipher suites to set preferences in Adaptive Server:

```
1> sp_ssladmin setcipher, 'TLS_RSA_WITH_AES_128_CBC_SHA,
TLS_RSA_WITH_AES_256_CBC_SHA'
2> go
```

#### Usage

- The Adaptive Server listener must present to the client a certificate. The common name in the certificate must match the common name used by the client in the interfaces file. If they do not match, the server authentication and login fail.
- When NULL is specified as the password, `dataserver` must be started with a `-y` flag. This flag prompts the administrator for the private-key password at the command line.
- The use of NULL as the password is intended to protect passwords during the initial configuration of SSL, before the SSL encrypted session begins. After restarting Adaptive Server with an SSL connection established, use `sp_ssladmin` again, this time using the actual password. The password is then encrypted and stored by Adaptive Server. Any subsequent starts of Adaptive Server from the command line would use the encrypted password; you do not have to specify the password on the command line during start up.
- You can specify “localhost” as the *hostname* in the *interfaces* file (*sql.ini* on Windows) to prevent clients from connecting remotely. Only a local connection can be established, and the password is never transmitted over a network connection.



## Using Isciphers and setciphers to set cipher suites

The Isciphers and setciphers options allow you to restrict the set of cipher suites that Adaptive Server uses, giving control to the System Security Officer over the kinds of encryption algorithms that may be used by client connections to the server or outbound connections from Adaptive Server. By default, Adaptive Server uses an internally defined set of preferences for cipher suites. See Chapter 19, “Confidentiality of Data” in the *System Administration Guide* for more information.

sp\_ssladmin setciphers sets cipher suite preferences to the given ordered list. This restricts the available SSL cipher suites to the specified set of “FIPS”, “Strong”, “Weak”, “All”, or a quoted list of cipher suites. This takes effect on the next listener started, and requires that you restart Adaptive Server to ensure that all listeners use the new settings.

You can display any cipher suite preferences that have been set using sp\_ssladmin Isciphers. If no preferences have been set, sp\_ssladmin Isciphers returns 0 rows to indicate no preferences are set and Adaptive Server uses its default (internal) preferences.

## Permissions

You must have the System Security Officer role to use sp\_ssladmin.

## Auditing

Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|---------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 50           | security            | Server start                     | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i><ul style="list-style-type: none"><li>-dmasterdevicename</li><li>-iinterfaces file path</li><li>-Sservername</li><li>-errorfilename</li></ul></li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**Document** Chapter 19, “Confidentiality of Data” in the *System Administration Guide*.

## sp\_syntax

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays the syntax of Transact-SQL statements, system procedures, utilities, and other routines for Adaptive Server, depending on which products and corresponding <code>sp_syntax</code> scripts exist on your server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax      | <code>sp_syntax word [, mod][, language]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><code>word</code><br/>is the name or partial name of a command or routine; for example, “help”, to list all system procedures providing help. To include spaces or Transact-SQL reserved words, enclose the word in quotes.</p> <p><code>mod</code><br/>is the name or partial name of one of the modules such as “Transact-SQL” or “Utility”. Each <code>sp_syntax</code> installation script adds different modules. Use <code>sp_syntax</code> without any parameters to see which modules exist on your server.</p> <p><code>language</code><br/>is the language of the syntax description to be retrieved. <code>language</code> must be a valid language name in the <code>syslanguages</code> table.</p> |
| Examples    | <p><b>Example 1</b> Displays all <code>sp_syntax</code> modules available on your server:</p> <pre>sp_syntax  sp_syntax provides syntax help for Sybase products. These modules are installed on this Server:  Module ----- OpenVMS Transact-SQL UNIX Utility System Procedure  Usage: sp_syntax command [, module [, language]]</pre> <p><b>Example 2</b> Displays the syntax and functional description of all routines containing the word or word fragment “disk”. Since “disk” is a Transact-SQL reserved word, enclose it in quotes:</p> <pre>sp_syntax "disk"</pre>                                                                                                                                         |

- Usage
- The text for sp\_syntax is in the database sybsyntax. Load sp\_syntax and the sybsyntax database onto Adaptive Server with the installation script described in configuration documentation for your platform. If you cannot access sp\_syntax, see your System Administrator for information about installing it on your server.
  - You can use wildcard characters within the command name you are searching for. However, if you are looking for a command or function that contains the literal “\_”, you may get unexpected results, since the underscore wildcard character represents any single character.

Permissions Any user can execute sp\_syntax.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

Tables used sybsyntax..sybsyntax

See also **System procedures** sp\_helpdb

## sp\_sysmon

|             |                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Displays performance information.                                                                                                                                                                                                                                                                             |
| Syntax      | <pre>sp_sysmon begin_sample sp_sysmon { end_sample   interval }[, section[, applmon ]            [, 'cache wizard' [, top_N [, filter] ] ]</pre>                                                                                                                                                              |
| Parameters  | <p><b>begin_sample</b><br/>starts sampling. You cannot specify a section when you specify <code>begin_sample</code>.</p> <p><b>section</b><br/>is the abbreviation for one of the sections printed by <code>sp_sysmon</code>. Table 1-40 lists the values and corresponding names of the report sections.</p> |

**Table 1-40: sp\_sysmon report sections**

| Report section                  | Parameter |
|---------------------------------|-----------|
| Application Management          | apmgmt    |
| Data Cache Management           | dcache    |
| Disk I/O Management             | diskio    |
| ESP Management                  | esp       |
| Index Management                | indexmgmt |
| Kernel Utilization              | kernel    |
| Lock Management                 | locks     |
| Memory Management               | memory    |
| Metadata Cache Management       | mdcache   |
| Monitor Access to Executing SQL | monaccess |
| Network I/O Management          | netio     |
| Parallel Query Management       | parallel  |
| Procedure Cache Management      | pcache    |
| Recovery Management             | recovery  |
| Task Management                 | taskmgmt  |
| Transaction Management          | xactmgmt  |
| Transaction Profile             | xactsum   |
| Worker Process Management       | wpm       |

**applmon**  
specifies whether to print application detail, application and login detail, or no application detail. The default is to omit the application detail. Valid values are listed in Table 1-41.

**Table 1-41: Values for applmon parameter to sp\_sysmon**

| Parameter      | Information reported                                                                         |
|----------------|----------------------------------------------------------------------------------------------|
| appl_only      | CPU, I/O, priority changes and resource limit violations by application name.                |
| appl_and_login | CPU, I/O, priority changes and resource limit violations by application name and login name. |
| no_appl        | Skips the by application or by login section of the report. This is the default.             |

This parameter is only valid when printing the full report and when you specify appmgmt for the *section*.

*end\_sample*

ends sampling and prints the report.

*interval*

specifies the time period for the sample. It must be in HH:MM:SS form, for example "00:20:00".

'cache wizard'

aids in the monitoring and configuring of data caches for optimal performance.

*top\_N*

is a varchar datatype that limits the list of objects reported in the Object Section based on the ranking criteria for the number of logical reads in the specified interval (as displayed in the LR/sec column).

The order of ranking is ascending or descending based on whether the specified value is a positive or negative integer. The entire list of objects occupying the cache at the end of the interval can be obtained by specifying a value of "0." The default value 10.

*filter*

is a varchar datatype that allows you to specify a pattern for the cache(s) included in the report.

For example, if it is specified as default data cache, the report will only contain information about the default data cache. If it is specified as emp%, the output includes information on all caches with a name matching this pattern.

If no value is given the output contains all the caches with the default data cache appearing first, followed by the other caches in alphabetical order.

#### Examples

**Example 1** Prints monitor information after 10 minutes:

```
sp_sysmon "00:10:00"
```

**Example 2** Prints only the "Disk Management" section of the sp\_sysmon report after 5 minutes:

```
sp_sysmon "00:05:00", diskio
```

**Example 3** Starts the sample, executes procedures and a query, ends the sample, and prints only the “Data Cache” section of the report:

```
sp_sysmon begin_sample
go
execute proc1
go
execute proc2
go
select sum(total_sales) from titles
go
sp_sysmon end_sample, dcache
go
```

**Example 4** Prints the full report and includes application and login detail for each login:

```
sp_sysmon "00:05:00", @applmon = appl_and_login
```

**Example 5** Report usage without clearing the counters:

```
sp_sysmon "00:01:00", kernel, noclear
```

You can also use:

```
sp_sysmon "00:01:00", noclear
```

---

**Note** You can use the `noclear` parameter only when you specify a sample interval in `sp_sysmon`. If you specify `begin_sample` or `end_sample` you cannot use `noclear`.

---

**Example 6** Prints a report using the cache wizard:

```
sp_sysmon '00:00:30', 'cache wizard'
```

```
=====
Cache Wizard
=====

-----
default data cache
-----

Run Size      : 100.00 Mb  Usage%      :      2.86
LR/sec       : 41.10    PR/sec      : 22.57   Hit%: 45.09
Cache Partitions: 4      Spinlock Contention%: 0.00
Buffer Pool Information
-----
```

| IO Size | Wash Size | Run Size | APF%  | LR/sec | PR/sec | Hit%  | APF-Eff% | Usage% |
|---------|-----------|----------|-------|--------|--------|-------|----------|--------|
| 4 Kb    | 3276 Kb   | 16.00 Mb | 10.00 | 0.47   | 0.13   | 71.43 | n/a      | 0.20   |
| 2 Kb    | 17200 Kb  | 84.00 Mb | 10.00 | 40.63  | 22.43  | 44.79 | n/a      | 3.37   |

(1 row affected)

Object Statistics

| Object                        | LR/sec | PR/sec | Hit%   | Obj_Cached% | Cache_Occp% |
|-------------------------------|--------|--------|--------|-------------|-------------|
| empdb.dbo.t1                  | 0.57   | 0.30   | 47.06  | 56.25       | 0.02        |
| empdb.dbo.t2                  | 0.30   | 0.30   | 0.00   | 56.25       | 0.02        |
| empdb.dbo.t3                  | 0.30   | 0.30   | 0.00   | 56.25       | 0.02        |
| empdb.dbo.t4                  | 0.30   | 0.30   | 0.00   | 56.25       | 0.02        |
| empdb.dbo.t5                  | 0.30   | 0.30   | 0.00   | 56.25       | 0.02        |
| empdb.dbo.t6                  | 0.30   | 0.30   | 0.00   | 56.25       | 0.02        |
| empdb.dbo.t8                  | 0.30   | 0.30   | 0.00   | 56.25       | 0.02        |
| empdb.dbo.t7                  | 0.57   | 0.20   | 64.71  | 62.50       | 0.02        |
| tempdb.dbo.tempcachedobjstats | 3.63   | 0.00   | 100.00 | 50.00       | 0.01        |
| tempdb.dbo.tempobjstats       | 0.47   | 0.00   | 100.00 | 25.00       | 0.00        |

| Object                        | Obj Size | Size in Cache |
|-------------------------------|----------|---------------|
| empdb.dbo.t1                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t2                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t3                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t4                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t5                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t6                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t8                  | 32 Kb    | 18 Kb         |
| empdb.dbo.t7                  | 32 Kb    | 20 Kb         |
| tempdb.dbo.tempcachedobjstats | 16 Kb    | 8 Kb          |
| tempdb.dbo.tempobjstats       | 16 Kb    | 4 Kb          |

company\_cache

|                   |   |         |                       |   |                 |
|-------------------|---|---------|-----------------------|---|-----------------|
| Run Size          | : | 1.00 Mb | Usage%                | : | 0.39            |
| LR/sec            | : | 0.07    | PR/sec                | : | 0.07 Hit%: 0.00 |
| Cache Partitions: |   | 1       | Spinlock Contention%: |   | 0.00            |

Buffer Pool Information

| IO Size | Wash Size | Run Size | APF%  | LR/sec | PR/sec | Hit% | APF-Eff% | Usage% |
|---------|-----------|----------|-------|--------|--------|------|----------|--------|
| 2 Kb    | 204 Kb    | 1.00 Mb  | 10.00 | 0.07   | 0.07   | 0.00 | n/a      | 0.39   |

Object Statistics



| Object            | LR/sec | PR/sec | Hit% | Obj_Cached% | Cache_Occp% |
|-------------------|--------|--------|------|-------------|-------------|
| empdb.dbo.history | 0.07   | 0.07   | 0.00 | 25.00       | 0.39        |

| Object            | Obj Size | Size in Cache |
|-------------------|----------|---------------|
| empdb.dbo.history | 16 Kb    | 4 Kb          |

-----  
companydb\_cache  
-----

|                   |   |         |                       |   |                   |
|-------------------|---|---------|-----------------------|---|-------------------|
| Run Size          | : | 5.00 Mb | Usage%                | : | 100.00            |
| LR/sec            | : | 380.97  | PR/sec                | : | 56.67 Hit%: 85.13 |
| Cache Partitions: |   | 1       | Spinlock Contention%: |   | 0.00              |

Buffer Pool Information

| IO Size | Wash Size | Run Size | APF%  | LR/sec | PR/sec | Hit%  | APF-Eff% | Usage% |
|---------|-----------|----------|-------|--------|--------|-------|----------|--------|
| 2 Kb    | 1024 Kb   | 5.00 Mb  | 10.00 | 380.97 | 56.67  | 85.13 | 98.42    | 100.00 |

Object Statistics

| Object                      | LR/sec | PR/sec | Hit%  | Obj_Cached% | Cache_Occp% |
|-----------------------------|--------|--------|-------|-------------|-------------|
| company_db.dbo.emp_projects | 41.07  | 22.80  | 44.48 | 19.64       | 9.45        |
| company_db.dbo.dept_det     | 93.03  | 20.67  | 77.79 | 99.08       | 54.53       |
| company_db.dbo.emp_perf     | 116.70 | 2.63   | 97.74 | 97.77       | 34.18       |
| company_db.dbo.dept_locs    | 0.43   | 0.17   | 61.54 | 50.00       | 0.16        |

| Object                      | Obj Size | Size in Cache |
|-----------------------------|----------|---------------|
| company_db.dbo.emp_projects | 2464 Kb  | 484 Kb        |
| company_db.dbo.dept_det     | 2818 Kb  | 2792 Kb       |
| company_db.dbo.emp_perf     | 1790 Kb  | 1750 Kb       |
| company_db.dbo.dept_locs    | 16 Kb    | 8 Kb          |

TUNING RECOMMENDATIONS

-----  
Usage% for 'default data cache' is low (< 5%)  
Usage% for 4k buffer pool in cache:default data cache is low (< 5%)  
Usage% for 2k buffer pool in cache:default data cache is low (< 5%)

Usage% for 'company\_cache' is low (< 5%)  
Usage% for 2k buffer pool in cache:company\_cache is low (< 5%)  
Consider adding a large I/O pool for 'companydb\_cache'

- Usage
- In Adaptive Server version 15.0.1 and later, the default behavior of `sp_sysmon` is to not clear the monitor counters.
- If you need to clear the monitor counters, use `sp_sysmon` with the `clear` option. For compatibility reasons, Adaptive Server accepts the `noclear` option as a valid parameter, but it does not affect the behavior of `sp_sysmon`.
- However, if you run `sp_sysmon` using the `begin_sample` and `end_sample` options to begin and end the sample period, `sp_sysmon` always clears the monitor counters. Adaptive Server issues an error message if you run `sp_sysmon` with `begin_sample` or `end_sample` and the `noclear` option.
- `sp_sysmon` displays information about Adaptive Server performance. It sets internal counters to 0, then waits for the specified interval while activity on the server causes the counters to be incremented. When the interval ends, `sp_sysmon` prints information from the values in the counters. See the *Performance and Tuning Guide* for more information.
  - To print only a single section of the report, use the values listed in Table 1-41 for the second parameter.
  - If you use `sp_sysmon` in batch mode, with `begin_sample` and `end_sample`, the time interval between executions must be at least one second. You can use `waitfor delay "00:00:01"` to lengthen the execution time of a batch.
  - During the sample interval, results are stored in signed integer values. Especially on systems with many CPUs and high activity, these counters can overflow. If you see negative results in your `sp_sysmon` output, reduce your sample time.
- Permissions
- Only a System Administrator can execute `sp_sysmon`.
- Auditing
- Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Documentation** “Monitoring performance with sp\_sysmon” in the *Performance and Tuning Guide*.

## **sp\_tab\_suspectptn**

|             |                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Lists tables with suspect partitions. A range-partitioned table on character-based partition keys can become suspect after a sort-order change, and hash-partitioned tables can become suspect after a cross-platform dump load.                          |
| Syntax      | <code>sp_tab_suspectptn [table_name]</code>                                                                                                                                                                                                               |
| Parameters  | <i>table_name</i><br>is the name of the table containing suspect partitions.                                                                                                                                                                              |
| Usage       | If you: <ul style="list-style-type: none"><li>• Provide a table name – Adaptive Server checks only the table named by <i>table_name</i>.</li><li>• Do not provide a table name – Adaptive Server checks all the tables in the current database.</li></ul> |
| Permissions | Any user can use <code>sp_tab_suspectptn</code> .                                                                                                                                                                                                         |
| See also    | <b>Stored procedures</b> <code>sp_indsuspect</code>                                                                                                                                                                                                       |

## sp\_tempdb

### Description

sp\_tempdb allows users to:

- Create and manage temporary database groups.
- Bind users or applications to the default or other temporary database group or to a specific local temporary database.
- Manage bindings to local temporary databases and temporary database groups.

These bindings are stored in the sysattributes table in master database.

sp\_tempdb provides the binding interface for maintaining bindings in sysattributes that are related to the multiple temporary database.

### Syntax

```
sp_tempdb [
  [ { "create" | "drop" }, "groupname" ] |
  [ { "add" | "remove" }, "tempdbname", "groupname" ] |
  [ { "bind", "objtype", "objname", "bindtype", "bindobj"
    [, "scope", "hardness" ] } |
    { "unbind", "objtype", "objname" [, "scope" ] "instance_name" } ] |
  [ "unbindall_db", "tempdbname" ] |
  [ show [, "all" | "gr" | "db" | "login" | "app" [, "name" ] ] |
  [ who, "dbname" ]
  [ help ] ]
```

### Parameters

#### create

creates the default temporary database group.

#### drop

drops a temporary database group.

#### groupname

is the name of the temporary database group.

#### add

adds temporary databases to the default temporary database group.

#### remove

removes temporary databases from the default temporary database group.

#### tempdbname

is the name of the temporary database you are adding or removing. For the Cluster Edition, *tempdbname* must be a local user temporary database.

#### bind

binds logins and applications to temporary databases or the default temporary database group.

**unbind**

unbinds logins and applications to temporary databases or the default temporary database group.

**objtype**

is the object type. Valid values are:

- login\_name (or LG)
- application\_name (or AP)

Values are not case-sensitive.

**objname**

is the name of the object you bind or unbind.

**bindtype**

is the bind type. Valid values are:

- group (or GR)
- database (or DB)

Values are not case-sensitive.

**bindobj**

is the name of the object being bound, and is either a group or a database depending on the *bindtype*.

**scope**

NULL.

**instance\_name**

*in cluster environments* – is the name of the instance owning the local temporary database that is to be unbound. This option is for the Cluster Edition only.

**hardness**

hardness – is hard, soft, or NULL. The default is soft.

When you set the value of *hardness* to hard, a failure to assign a temporary database according to the binding results in a failure of the login.

When you set the value to soft, such a failure results in the assignment of a temporary database from the default group or a local system temporary database.

**unbindall\_db**

removes all login and application bindings for a given temporary database. It does not remove any database to group memberships. The *tempdbname* variable is required with this option.

Existing assignments to active sessions are not affected by this operation.

**show**

displays information stored in the *sysattributes* table about the existing groups, group members, login and application bindings, and active sessions that are assigned to a given database. The values are:

- **all** or **no** argument – displays the default temporary database group, all database-to-group memberships, and all login and application bindings.
- **gr** – displays the default temporary database group. *sp\_tempdb show* displays all temporary databases bound to the default temporary database group whether you specify “default” for the *name* option or not.
- **db** – displays all databases and temporary databases to group memberships. If you provide *name*, then only the database to group memberships for the database *name* are printed.
- **login** – displays all login bindings where login is not NULL. If you provide *name*, then only the bindings for the login *name* are printed.
- **app** – displays all bindings where the application is not NULL. If you provide *name*, then the bindings for the application *name* are printed.

---

**Note** *tempdb* is always part of the default database group.

---

**who**

displays all active sessions assigned to the given temporary database. When using the *who* parameter, you must use:

- *dbname* – is the name of a temporary database. If you provide a nontemporary database name for *dbname*, *sp\_tempdb who* executes, but does not report any active sessions bound to it.

If *system\_view* is set to *cluster*, all active sessions of the cluster are examined. If *system\_view* is set to *instance*, sessions that are active on the current instance are examined

This command may be executed from any instance in the cluster.

help

displays usage information. Executing sp\_tempdb without specifying a command is the same as executing sp\_tempdb "help".

Examples

**Example 1** Adds mytempdb1 to the default group:

```
sp_tempdb "add", "mytempdb1", "default"
```

**Example 2** Removes mytempdb1 from the default group:

```
sp_tempdb "remove", "mytempdb1", "default"
```

**Example 3** Binds login "sa" to the default group:

```
sp_tempdb "bind", "lg", "sa", "GR", "default"
```

The value for objtype in this example is login\_name. You can substitute login\_name with lg or LG.

The value for bindtype in this example is group. You can substitute group with gr or GR.

**Example 4** Changes the previous binding of login "sa" from the default group to mytempdb1:

```
sp_tempdb "bind", "lg", "sa", "DB", "mytempdb1"
```

The value for bindtype in this example is database. You can substitute database with db or DB.

**Example 5** Binds isql to mytempdb1:

```
sp_tempdb "bind", "ap", "isql", "DB", "mytempdb1"
```

The value for objtype in this example is application\_name. You can substitute application\_name with ap or AP.

**Example 6** Changes the previous binding of isql from mytempdb1 to the default group:

```
sp_tempdb "bind", "ap", "isql", "GR", "default"
```

**Example 7** Removes the bindings of login "sa" and application "isql".

```
sp_tempdb "unbind", "lg", "sa"
```

```
sp_tempdb "unbind", "ap", "isql"
```

**Example 8** Removes all login and application bindings for the mytempdb1 database:

```
sp_tempdb "unbindall_db", "mytempdb1"
```



**Example 9** Demonstrates the `sp_temp show` command. A selection of the different variations is chosen, and abbreviated sample output is displayed.

```
sp_tempdb show

Temporary Database Groups
-----
default

Database                                GroupName
-----
tempdb                                   default
mytempdb                                 default
mytempdb1                                default
mytempdb2                                default
mytempdb3                                default

Login   Application   Group   Database   Hardness
-----
NULL    isql            default NULL      SOFT
sa      NULL           NULL    mytempdb3  HARD
```

**Example 10** Displays the default temporary database group:

```
sp_tempdb show, "gr"

Temporary Database Groups
-----
default
```

**Example 11** Displays all the temporary database group names that are bound to the default group:

```
sp_tempdb show, "gr", "default"

Member Databases
-----
tempdb
mytempdb
mytempdb1
mytempdb2
mytempdb3
```

**Example 12** Displays all the databases-to-group memberships:

```
sp_tempdb show, "db"

Database                                Group
-----
tempdb                                   default
```

```

mytempdb          default
mytempdb1        default
mytempdb2        default
mytempdb3        default

```

**Example 13** Displays all the databases-to-group memberships for the mytempdb1 database.

```

sp_tempdb show, "db", "mytempdb1"

Database          Group
-----
mytempdb1        default

```

**Example 14** Displays all the login bindings where login is not NULL:

```

sp_tempdb show, "login"

Login  Application  Group  Database  Hardness
-----
sa     NULL          NULL   mytempdb3  HARD

```

**Example 15** Displays all active sessions that are assigned to the system tempdb:

```

sp_tempdb who, "tempdb"

spid  loginame
-----
2     NULL
3     NULL
4     NULL
5     NULL
6     NULL
7     NULL
8     NULL

```

**Example 16** Displays all active sessions that are assigned to the mytempdb3 user-created temporary database:

```

sp_tempdb who, "mytempdb3"

spid  loginame
-----
17    sa

```

**Example 17** Displays usage information:

```

sp_tempdb help

Usage:
sp_tempdb 'help'
sp_tempdb 'create', <groupname>
sp_tempdb 'drop', <groupname>
sp_tempdb 'add', <tempdbname>, <groupname>
sp_tempdb 'remove', <tempdbname>, <groupname>
sp_tempdb 'bind', <objtype>, <objname>, <bindtype>, <bindobj>, <scope>,
    <hardness>
sp_tempdb 'unbind', <objtype>, <objname>, <scope>
sp_tempdb 'unbindall_db', <tempdbname>
sp_tempdb 'show', <command>, <name>
sp_tempdb 'who', <dbname>

<objtype> = ['LG' ('login_name') | 'AP' ('application_name')];
<bindtype> = ['GR' ('group') | 'DB' ('database')]
<hardness> = ['hard' | 'soft']
<command> = ['all' | 'gr' | 'db' | 'login' | 'app']

```

**Example 18** Displays all temporary databases and the names of the groups to which the temporary databases belong:

```

create temporary database mytempdb
-----
CREATE DATABASE: allocating 1536 logical pages (3.0
megabytes) on disk 'master'.|

create temporary database mytempdb1
-----
CREATE DATABASE: allocating 1536 logical pages (3.0
megabytes) on disk 'master'.

sp_tempdb 'add', mytempdb,'default'
-----
(return status = 0

sp_tempdb show, db
-----
Database Group
-----
tempdb default
mytempdb default
mytempdb1
(3 rows affected)

```

```
(return status = 0)
```

**Example 19** Displays the login and application names of all active sessions assigned to specified temporary databases:

```
sp_addlogin anunay, anunay
-----
sp_tempdb "bind", lg, sa, DB, mytempdb3
-----
(return status = 0)

sp_tempdb "bind", lg, anunay, DB, mytempdb3
-----
(return status = 0)

starting sessions
-----
${ISQL} -J -U anunay -P anunay -I${SYBASE}/interfaces -w200

sp_tempdb who, mytempdb3
-----
spid loginame application
-----
11 sa isql
13 anunay isql

(2 rows affected)
(return status = 0)
```

#### Usage

##### show and who

To display the distribution of users across all temporary databases, use both options, show and who:

- To obtain the names of all temporary databases, execute

```
sp_tempdb 'show'
```

- Pass each temporary database name to

```
sp_tempdb 'who', tempdbname
```

In Adaptive Server versions 15.0 and above, you can obtain the same output by executing sp\_who.

##### create and drop

When using the sp\_tempdb create stored procedure, the *groupname* variable:

- Must be a valid identifier
- Cannot already exist

The default group is the system-generated group, of which tempdb is always a member. This default group is present if you:

- Upgrade using the Adaptive Server containing this feature, or
- Create a new master device.

If the default group is not present, you can create it by using:

```
sp_tempdb create, "default"
```

An error message displays if you attempt to create a default group that already exists.

#### add and remove

To add a temporary database to the default temporary database group, both the temporary database and the group name must already exist. When you use sp\_tempdb add to add a *tempdbname* to a set of databases that are members of the default temporary database group, *tempdbname* becomes available for round-robin assignment from within that group.

---

**Note** sp\_tempdb add fails if *tempdbname* is not already part of the global list of available temporary databases in Adaptive Server.

---

User-created temporary databases need not belong to the default temporary database group. The system tempdb is implicitly a member of the default group.

If you try to add a temporary database to the default temporary database group when it is already a part of that group, you get an error message, and no changes take place in sysattributes.

Permissions By default, only the System Administrator or users with the SA role can execute sp\_tempdb.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## sp\_tempdb\_markdrop

**Description** *In cluster environments* – places a local system temporary database in the drop state.

**Syntax** sp\_tempdb\_markdrop *database\_name* [, {'mark' | 'unmark'}]

**Parameters** *database\_name*  
is the name of the local system temporary database you are dropping

**mark**  
marks the specified database for dropping.

**unmark**  
clears the mark from the database.

**Examples** **Example 1** Marks a local system temporary database named “old\_cluster\_tempdb1” to be dropped:

```
sp_tempdb_markdrop 'old_cluster_tempdb1', 'mark'
```

**Example 2** Removes the mark from the local system temporary database “old\_cluster\_tempdb1”:

```
sp_tempdb_markdrop 'old_cluster_tempdb1', 'unmark'
```

**Usage** To delete the last local temporary database:

- 1 Use sp\_tempdb\_markdrop to place the local system temporary database in the drop state.
- 2 Shut down and restart the instance that owns the last local temporary database.

---

**Note** After you mark the local system temporary database to be dropped, the owner instance restarts if there are no other active instances. This instance does not use the marked local system temporary database when it starts.

---

- 3 Use drop database to delete the last local system temporary database.

## sp\_thresholdaction

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Executes automatically when the number of free pages on the log segment falls below the last-chance threshold, unless the threshold is associated with a different procedure. Sybase does not provide this procedure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | When a threshold is crossed, Adaptive Server passes the following parameters to the threshold procedure by position: <pre> sp_thresholdaction @dbname,                   @segment_name,                   @space_left,                   @status </pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Parameters  | <p><i>@dbname</i><br/>is the name of a database where the threshold was reached.</p> <p><i>@segment_name</i><br/>is the name of the segment where the threshold was reached.</p> <p><i>@space_left</i><br/>is the threshold size, in logical pages.</p> <p><i>@status</i><br/>is 1 for the last-chance threshold; 0 for all other thresholds.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Examples    | Creates a threshold procedure for the last-chance threshold that dumps the transaction log to a tape device: <pre> create procedure sp_thresholdaction     @dbname varchar(30),     @segmentname varchar(30),     @space_left int,     @status int as     dump transaction @dbname to tapedump1 </pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Usage       | <ul style="list-style-type: none"> <li>• <i>sp_thresholdaction</i> must be created by the Database Owner (in a user database), or a System Administrator (in the sybserverprocs database), or a user with create procedure permission.</li> <li>• You can add thresholds and create threshold procedures for any segment in a database.</li> <li>• When the last-chance threshold is crossed, Adaptive Server searches for the <i>sp_thresholdaction</i> procedure in the database where the threshold event occurs. If it does not exist in that database, Adaptive Server searches for it in sybserverprocs. If it does not exist in sybserverprocs, it searches master. If Adaptive Server does not find the procedure, it sends an error message to the error log.</li> </ul> |

- sp\_thresholdaction should contain a dump transaction command to truncate the transaction log.
- By design, the last-chance threshold allows enough free space to record a dump transaction command. There may not be enough space to record additional user transactions against the database. Only commands that are not recorded in the transaction log (select, fast bcp, readtext, and writetext) and commands that might be necessary to free additional log space (dump transaction, dump database, and alter database) can be executed. By default, other commands are suspended and a message is sent to the error log. To abort these commands rather than suspend them, use the abort tran on log full option of sp\_dboption followed by the checkpoint command.

Waking suspended processes

- Once the dump transaction command frees sufficient log space, suspended processes automatically awaken and complete.
- If fast bcp, writetext, or select into have resulted in unlogged changes to the database since the last backup, the last-chance threshold procedure cannot execute a dump transaction command. When this occurs, use dump database to make a copy of the database, then use dump transaction to truncate the transaction log.
- If this does not free enough space to awaken the suspended processes, it may be necessary to increase the size of the transaction log. Use the log on option of the alter database command to allocate additional log space.
- As a last resort, System Administrators can use sp\_who to determine which processes are suspended, then use the kill command to kill them.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                               |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• Roles – Current active roles</li> <li>• Keywords or options – NULL</li> <li>• Previous value – NULL</li> <li>• Current value – NULL</li> <li>• Other information – All input parameters</li> <li>• Proxy information – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create procedure, dump transaction

**System procedures** sp\_addthreshold, sp\_dboption, sp\_dropthreshold, sp\_helpsegment, sp\_helpthreshold, sp\_modifythreshold, sp\_who



## sp\_tran\_dumpable\_status

|             |                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Description | If you cannot make a transaction dump on a database, <code>sp_tran_dumpable_status</code> displays the reasons the dump is not possible. |
| Syntax      | <code>sp_tran_dumpable_status [database_name]</code>                                                                                     |
| Parameters  | <i>database_name</i><br>name of the database you are researching.                                                                        |
| Examples    | Describes the reasons you cannot currently make a transaction dump on <code>sybsystemprocs</code> :                                      |

```

sp_tran_dumpable_status sybsystemprocs
bit                description
-----
                2          Log is not on its own device
                8          Trunc log on ckpt is set
               32          Dump tran with truncate_only
               64          Database is new or upgraded

```

### Usage

## sp\_transactions

**Description** Reports information about active transactions.

**Syntax** sp\_transactions ["xid", xid\_value] |  
 ["state", {"heuristic\_commit" | "heuristic\_abort"  
 | "prepared" | "indoubt"} [, "xactname"]] |  
 ["gtrid", gtrid\_value]

**Parameters** *xid\_value*  
 is a transaction name from the xactname column of  
 master.dbo.systransactions.

*gtrid\_value*  
 is the global transaction ID name for a transaction coordinated by Adaptive  
 Server.

**Examples** **Example 1** Displays general information about all active transactions:

```
sp_transactions

xactkey          type  coordinator starttime      state
connection dbid spid  loid failover  srvname  namelen  xactname
-----
0x00000b1700040000dd6821390001 Local    None      Jun 1 1999 3:47PM Begun
Attached        1    1    2 Resident Tx      NULL      17
$user_transaction
0x00000b1700040000dd6821390001 Remote  ASTC      Jun 1 1999 3:47PM Begun
NA              0    8    0 Resident Tx      caserv2 108

00000b1700040000dd6821390001-aa01f04ebb9a-00000b1700040000dd6821390001-aa0
1f04ebb9a-caserv1-caserv1-0002
```

**Example 2** Displays detailed information for the specified transaction:

```
sp_transactions "xid",
"00000b1700040000dd6821390001-aa01f04ebb9a-00000b1700040000dd6821390001-aa
01f04ebb9a-caserv1-caserv1-0002"

xactkey          type  coordinator starttime      state
connection dbid spid  loid failover  srvname  namelen  xactname
commit_node      parent_node
gtrid
-----
0x00000b2500080000dd6821960001 External  ASTC      Jun 1 1999 3:47PM Begun
Attached        1    8   139 Resident Tx      NULL      108

00000b1700040000dd6821390001-aa01f04ebb9a-00000b1700040000dd6821390001-aa0
1f04ebb9a-caserv1-caserv1-0002
```

```
caserv1          caserv1
00000b1700040000dd6821390001-aa01f04ebb9a
```

**Example 3** Displays general information about transactions that are in the “prepared” state:

```
sp_transactions "state", "prepared"
```

**Example 4** Displays only the transaction names of transactions that are in the “prepared” state:

```
sp_transactions "state", "prepared", "xactname"
```

**Example 5** Displays status information for transactions having the specified global transaction ID:

```
sp_transactions "gtrid", "00000b1700040000dd6821390001-aa01f04ebb9a"

xactkey          type      coordinator starttime      state
connection dbid spid loid failover srvname namelen  xactname
commit_node
parent_node
-----
-----
-----
0x00000b1700040000dd6821390001 Local   None           Jun 1 1999 3:47PM Begun
  Attached      1      1      2 Resident Tx      NULL           17 $user_transaction
caserv1
caserv1
```

#### Usage

- `sp_transactions` translates data from the `systransactions` table to display information about active transactions. `systransactions` itself comprises data in the `syscoordinations` table, as well as in-memory information about active transactions.
- `sp_transactions` with no keywords displays information about all active transactions.
- `sp_transactions` with the `xid` keyword displays the `gtrid`, `commit_node`, and `parent_node` columns only for the specified transaction.
- `sp_transactions` with the `state` keyword displays information only for the active transactions in the specified state.
 

`sp_transactions` with both `xid` and `xactname` displays only the transaction names for transactions in the specified state.
- `sp_transactions` with the `gtrid` keyword displays information only for the transactions with the specified global transaction ID.

- sp\_transactions replaces the sp\_xa\_scan\_xact procedure provided with XA-Library and XA-Server products.
- See *Using Adaptive Server Distributed Transaction Management Features* for more information.

Column descriptions for *sp\_transactions* output

- The xactkey column shows the internal transaction key that Adaptive Server uses to identify the transaction.
- The type column indicates the type of transaction:
  - “Local” means that the transaction was explicitly started on the local Adaptive Server with a begin transaction statement.
  - “Remote” indicates a transaction executing on a remote Adaptive Server.
  - “External” means that the transaction has an external coordinator associated with it. For example, transactions coordinated by a remote Adaptive Server, MSDTC, or an X/Open XA transaction manager are flagged as “External.”
  - “Dtx\_State” is a special state for distributed transactions coordinated by Adaptive Server. It indicates that a transaction on the local server was either committed or aborted, but Adaptive Server has been unable to resolve a branch of that transaction on a remote participant. This may happen in cases where Adaptive Server loses contact with a server it is coordinating.
- The coordinator column indicates the method or protocol used to manage a distributed transaction:

| <b>sp_transactions<br/>“coordinator”</b> |                                                                                                                                                                                     |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>value</b>                             | <b>Meaning</b>                                                                                                                                                                      |
| None                                     | Transaction is not a distributed transaction and does not require a coordinating protocol.                                                                                          |
| ASTC                                     | Transaction is coordinated using the Adaptive Server transaction coordination services.                                                                                             |
| XA                                       | Transaction is coordinated by the X/Open XA-compliant transaction manager via the Adaptive Server XA-Library interface. Such transaction managers include Encina, CICS, and Tuxedo. |
| DTC                                      | Transaction is coordinated by MSDTC.                                                                                                                                                |
| SYB2PC                                   | Transaction is coordinated using Sybase two-phase commit protocol.                                                                                                                  |

- The starttime column indicates the time that the transaction started.

- The state column indicates the state of the transaction at the time `sp_transactions` ran:

| <b>sp_transactions<br/>“state” value</b> | <b>Meaning</b>                                                                                                           |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Begun                                    | Transaction has begun but no updates have been performed.                                                                |
| Done Command                             | Transaction completed an update command.                                                                                 |
| Done                                     | X/Open XA transaction has finished modifying data.                                                                       |
| Prepared                                 | Transaction has successfully prepared.                                                                                   |
| In Command                               | Transaction is currently modifying data.                                                                                 |
| In Abort Cmd                             | Execution of the current command in the transaction has been aborted.                                                    |
| Committed                                | Transaction has successfully committed, and the commit log record has been written.                                      |
| In Post Commit                           | Transaction has successfully committed, but is currently deallocating transaction resources.                             |
| In Abort Tran                            | Transaction is being aborted. This may happen either as a result of an explicit command, or because of a system failure. |
| In Abort Savept                          | Transaction is being rolled back to a savepoint.                                                                         |
| Begun-Detached                           | Transaction has begun, but there is no thread currently attached to it.                                                  |
| Done Cmd-Detached                        | Transaction has finished modifying data, and no thread is currently attached to it.                                      |
| Done-Detached                            | Transaction will modify no more data, and no thread is currently attached to it.                                         |
| Prepared-Detached                        | Transaction has successfully prepared, and no thread is currently attached to it.                                        |
| Heur Committed                           | Transaction has been heuristically committed using the <code>dbcc complete_xact</code> command.                          |
| Heur Rolledback                          | Transaction has been heuristically rolled back using the <code>dbcc complete_xact</code> command.                        |

- The connection column indicates whether or not the transaction is currently associated with a thread:
  - “Attached” indicates that the transaction has an associated thread of control.
  - “Detached” indicates that there is no thread currently associated with the transaction. Some external transaction managers, such as CICS and TUXEDO, use the X/Open XA “suspend” and “join” semantics to associate different threads with the same transaction.
- The `dbid` column indicates the database ID of the database in which transaction started.
- The `spid` column indicates the server process ID associated with the transaction. If the transaction is “Detached,” the “`spid`” value is 0.
- The `loid` column indicates the unique lock owner ID from `master.dbo.systransactions`.
- The `failover` column indicates the failover state for the transaction:

- “Resident Tx” indicates that the transaction started and is executing on the same server. “Resident Tx” is displayed under normal operating conditions, and on systems that do not utilize Adaptive Server high availability features.
- “Failed-over Tx” is displayed after there has been a failover to a secondary companion server. “Failed-over Tx” means that a transaction originally started on a primary server and reached the prepared state, but was automatically migrated to the secondary companion server (for example, as a result of a system failure on the primary server). The migration of a prepared transaction occurs transparently to an external coordinating service.
- “Tx by Failover-Conn” indicates that there was an attempt to start the transaction on a designated server, but the transaction was instead started on the secondary companion server. This occurs when the original server has experienced a failover condition.
- The `srvname` column indicates the name of the remote server on which the transaction is executing. This column is only meaningful for remote transactions. For local and external transactions, `srvname` is null.
- The `namelen` column indicates the total length of the `xactname` value.
- `xactname` is the transaction name. For local transactions, the transaction name may be defined as part of the `begin` transaction command. External transaction managers supply unique transaction names in a variety of formats. For example, X/Open XA-compliant transaction managers supply a transaction ID (`xid`) consisting of a global transaction identifier and a branch qualifier, both of which are stored in `xactname`.
- For transactions coordinated by Adaptive Server, the `gtrid` column displays the global transaction ID. Transaction branches that are part of the same distributed transaction share the same `gtrid`. You can use a specific `gtrid` with the `sp_transactions` `gtrid` keyword to determine the state of other transaction branches in the same distributed transaction.

`sp_transactions` cannot display the `gtrid` for transactions that have an external coordinator. For transactions coordinated by an X/Open XA-compliant transaction manager, MSDTC, or SYB2PC, the `gtrid` column shows the full transaction name supplied by the external coordinator.

- For transactions coordinated by Adaptive Server, the `commit_node` column indicates the server that executes the outermost block of the distributed transaction. This outermost block ultimately determines the commit status of all subordinate transactions.

For transactions not coordinated by Adaptive Server, `commit_node` displays one of the values described in Table 1-42.

**Table 1-42: Values for `commit_node` and `parent_node`**

| Value                    | Meaning                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------|
| <code>server_name</code> | Commit or parent node is an Adaptive Server with the specified <code>server_name</code> . |
| XATM                     | Commit or parent node is an X/Open XA-compliant transaction manager.                      |
| MSDTCTM                  | Commit or parent node is MSDTC.                                                           |
| SYB2PCTM                 | Transaction is coordinated using SYB2PC protocol.                                         |

- For transactions coordinated by Adaptive Server, the `parent_node` column indicates the server that is coordinating the external transaction on the local server.

For transactions not coordinated by Adaptive Server, `parent_node` displays one of the values described in Table 1-42.

---

**Note** The values for `commit_node` and `parent_node` can be different, depending on the levels of hierarchy in the distributed transaction.

---

Permissions Any user can execute `sp_transactions`.

Auditing Values in `event` and `extrainfo` columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in <code>extrainfo</code>                                                                                                                                                                                                                                                                                                                |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_lock`, `sp_who`

## sp\_unbindcache

**Description** Unbinds a database, table, index, text object, or image object from a data cache.

**Syntax** sp\_unbindcache *dbname* [[*owner*.]*tablename*  
[, *indexname* | "text only"]]

**Parameters**

*dbname*  
is the name of database to be unbound or the name of the database containing the objects to be unbound.

*owner*  
is the name of the table's owner. If the table is owned by the Database Owner, the owner name is optional.

*tablename*  
is the name of the table to be unbound from a cache or the name of a table whose index, text object, or image object is to be unbound from a cache.

*indexname*  
is the name of an index to be unbound from a cache.

text only  
unbinds text or image objects from a cache.

**Examples** **Example 1** Unbinds the titles table from the cache to which it is bound:

```
sp_unbindcache pubs2, titles
```

**Example 2** Unbinds the titleidind index from the from the cache to which it is bound:

```
sp_unbindcache pubs2, titles, titleidind
```

**Example 3** Unbinds the text or image object for the au\_pix table from the cache to which it is bound:

```
sp_unbindcache pubs2, au_pix, "text only"
```

**Example 4** Unbinds the transaction log, syslogs, from its cache:

```
sp_unbindcache pubs2, syslogs
```

**Usage**

- When you unbind a database or database object from a cache, all subsequent I/O for the cache is performed in the default data cache. All dirty pages in the cache being unbound are written to disk, and all clean pages are cleared from the cache. See the *Performance and Tuning Guide* for more information.
- Adaptive Server issues error number 857 if you attempt to use sp\_unbindcache to unbind a database that is in use.



- Cache unbindings take effect immediately and do not require a restart of the server, except with the system tempdb.
- Although you can still use `sp_unbindcache` on a system tempdb, the binding of the system tempdb is now non-dynamic. Until you restart the server:
  - The changes do not take effect
  - `sp_helpcache` reports a status of “P” for pending, unless you have explicitly bound the system tempdb to the default data cache, in which case the status as “V” for valid, because by default the system tempdb is already bound to the default data cache.
- When you drop a database, table, or index, its cache bindings are automatically dropped.
- To unbind a database, you must be using the master database. For tables, indexes, text objects, or image objects, you must be using the database where the objects are stored.
- To unbind any system tables in a database, you must be using the database, and the database must be in single-user mode. Use the command:
 

```
sp_dboption db_name, "single user", true
```

 See `sp_dboption` for more information.
- The following procedures provide information about the bindings for their respective objects: `sp_helpdb` for databases, `sp_help` for tables, and `sp_helpindex` for indexes.
- `sp_helpcache` prints the names of objects bound to caches.
- `sp_unbindcache` needs to acquire an exclusive table lock when you are unbinding a table or its indexes to a cache. No pages can be read while the unbinding takes place. If a user holds locks on a table, and you issue `sp_unbindcache` on that object, the `sp_unbindcache` task sleeps until the locks are released.
- When you change the cache binding for an object with `sp_bindcache` or `sp_unbindcache`, the stored procedures that reference the object are recompiled the next time they are executed. When you change the binding for a database, the stored procedures that reference objects in the database are recompiled the next time they are executed.
- To unbind all objects from a cache, use the system procedure `sp_unbindcache_all`.

## Permissions

Only a System Administrator can execute `sp_unbindcache`.

Auditing

Values in event and extrainfo columns from the sysaudits table are:

---

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                           |
|--------------|---------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"><li>• <i>Roles</i> – Current active roles</li><li>• <i>Keywords or options</i> – NULL</li><li>• <i>Previous value</i> – NULL</li><li>• <i>Current value</i> – NULL</li><li>• <i>Other information</i> – All input parameters</li><li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li></ul> |

See also

**System procedures** sp\_bindcache, sp\_dboption, sp\_help, sp\_helpdb, sp\_helpcache, sp\_helpdb, sp\_helpindex, sp\_unbindcache\_all

## sp\_unbindcache\_all

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Unbinds all objects that are bound to a cache.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Syntax      | <code>sp_unbindcache_all cache_name</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Parameters  | <i>cache_name</i><br>is the name of the data cache from which objects are to be unbound.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Examples    | Unbinds all databases, tables, indexes, text objects and image objects that are bound to <code>pub_cache</code> :<br><br><code>sp_unbindcache_all pub_cache</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"> <li>When you unbind entities from a cache, all subsequent I/O for the cache is performed in the default cache.</li> <li>To unbind individual objects from a cache, use the system procedure <code>sp_unbindcache</code>.</li> <li>You cannot use <code>sp_unbindcache_all</code> if the system tempdb is bound to <code>pub_cache</code>. If you do, you get an error message, and <code>sp_unbindcache_all</code> rejects the unbind for all objects.<br/><br/>Use <code>sp_unbindcache</code> to unbind the system tempdb first.</li> <li>See <code>sp_unbindcache</code> for more information about unbinding caches.</li> </ul> |
| Permissions | Only a System Administrator can execute <code>sp_unbindcache_all</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Auditing    | Values in event and extrainfo columns from the <code>sysaudits</code> table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                             |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li><i>Roles</i> – Current active roles</li> <li><i>Keywords or options</i> – NULL</li> <li><i>Previous value</i> – NULL</li> <li><i>Current value</i> – NULL</li> <li><i>Other information</i> – All input parameters</li> <li><i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_bindcache`, `sp_helpcache`, `sp_unbindcache`

## sp\_unbinddefault

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Unbinds a created default value from a column or from a user-defined datatype.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Syntax      | sp_unbinddefault <i>objname</i> [, futureonly]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Parameters  | <p><i>objname</i></p> <p>is the name of either the table and column or the user-defined datatype from which to unbind the default. If the parameter is not of the form “<i>table.column</i>”, then <i>objname</i> is assumed to be a user-defined datatype. When unbinding a default from a user-defined datatype, any columns of that type that have the same default as the user-defined datatype are also unbound. Columns of that type, whose default has already been changed, are unaffected.</p> <p>futureonly</p> <p>prevents existing columns of the specified user-defined datatype from losing their defaults. It is ignored when unbinding a default from a column.</p> |
| Examples    | <p><b>Example 1</b> Unbinds the default from the startdate column of the employees table:</p> <pre>sp_unbinddefault "employees.startdate"</pre> <p><b>Example 2</b> Unbinds the default from the user-defined datatype named ssn and all columns of that type:</p> <pre>sp_unbinddefault ssn</pre> <p><b>Example 3</b> Unbinds defaults from the user-defined datatype ssn, but does not affect existing columns of that type:</p> <pre>sp_unbinddefault ssn, futureonly</pre>                                                                                                                                                                                                      |
| Usage       | <ul style="list-style-type: none"><li>• Use sp_unbinddefault to remove defaults created with sp_bindefault. Use alter table to drop defaults declared using the create table or alter table statements.</li><li>• Columns of a user-defined datatype lose their current default unless the default has been changed or the value of the optional second parameter is futureonly.</li><li>• To display the text of a default, execute sp_helptext with the default name as the parameter.</li></ul>                                                                                                                                                                                  |
| Permissions | Only the object owner can execute sp_unbinddefault.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |
| 67    | unbind         | sp_unbindefault           | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – NULL</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul>                 |

See also

**Commands** create default, drop default

**System procedures** sp\_bindefault, sp\_helptext

## sp\_unbindexclass

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Removes the execution class attribute previously associated with an client application, login, or stored procedure for the specified scope.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Syntax      | <code>sp_unbindexclass <i>object_name</i>, <i>object_type</i>, <i>scope</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><i>object_name</i><br/>is the name of the application, login, or stored procedure for which to remove the association to the execution class.</p> <p><i>object_type</i><br/>identifies the type of <i>object_name</i> as ap, lg, or pr for application, login, or stored procedure.</p> <p><i>scope</i><br/>is the application name or the login name for which the unbinding applies for an application or login. It is the stored procedure owner name (user name) for stored procedures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Examples    | <p>Removes the association between “sa” login scoped to application isql and an execution class. “sa” automatically binds itself to another execution class, depending on other binding specifications, precedence, and scoping rules. If no other binding is applicable, the object binds to the default execution class, EC2:</p> <pre>sp_unbindexclass 'sa', 'lg', 'isql'</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"><li>• The parameters must match an existing entry in the sysattributes system table.</li><li>• If you specify a null value for scope, Adaptive Server unbinds the object for which the scope is null, if there is one.</li><li>• A null value for scope does not indicate that unbinding should apply to all bound objects.</li><li>• When unbinding a stored procedure from an execution class, you must use the name of the stored procedure owner (user name) for the scope parameter.</li><li>• Stored procedures can be dropped before or after unbinding.</li><li>• A user cannot be dropped from a database if the user owns a stored procedure that is bound to an execution class in that database.</li><li>• Unbind objects of type PR before dropping them from the database.</li><li>• Unbinding will fail if the associated engine group has no online engines and active processes are bound to the associated execution class.</li></ul> |

- Due to precedence and scoping rules, the execution class being unbound may or may not have been in effect for the object called *object\_name*. The object automatically binds itself to another execution class, depending on other binding specifications and precedence and scoping rules. If no other binding is applicable, the object binds to the default execution class, EC2.

Permissions Only a System Administrator can execute `sp_unbindexclass`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **System procedures** `sp_addexclass`, `sp_bindexclass`, `sp_dropexclass`, `sp_showexclass`

**Utility** `isql`

## sp\_unbindmsg

|             |                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Unbinds a user-defined message from a constraint.                                                                                                                                                                                                                                                                                                                 |
| Syntax      | sp_unbindmsg <i>constrname</i>                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <i>constrname</i><br>is the name of the constraint from which a message is to be unbound.                                                                                                                                                                                                                                                                         |
| Examples    | Unbinds a user-defined message from the constraint positive_balance:<br><br>sp_unbindmsg positive_balance                                                                                                                                                                                                                                                         |
| Usage       | <ul style="list-style-type: none"> <li>You can bind only one message to a constraint. To change the message bound to a constraint, use sp_bindmsg; the new message number replaces any existing bound message. It is not necessary to use sp_unbindmsg first.</li> <li>To retrieve message text from the sysusermessages table, execute sp_getmessage.</li> </ul> |
| Permissions | Only the object owner can execute sp_unbindmsg.                                                                                                                                                                                                                                                                                                                   |
| Auditing    | Values in event and extrainfo columns from the sysaudits table are:                                                                                                                                                                                                                                                                                               |

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                   |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>Roles – Current active roles</li> <li>Keywords or options – NULL</li> <li>Previous value – NULL</li> <li>Current value – NULL</li> <li>Other information – All input parameters</li> <li>Proxy information – Original login name, if set proxy in effect</li> </ul> |
| 69    | unbind         | sp_unbindmsg              | <ul style="list-style-type: none"> <li>Roles – Current active roles</li> <li>Keywords or options – NULL</li> <li>Previous value – NULL</li> <li>Current value – NULL</li> <li>Other information – NULL</li> <li>Proxy information – Original login name, if set proxy in effect</li> </ul>                 |

See also **System procedures** sp\_addmessage, sp\_bindmsg, sp\_getmessage



## sp\_unbindrule

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Unbinds a rule from a column or from a user-defined datatype.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Syntax      | <code>sp_unbindrule <i>objname</i> [, futureonly [, "accessrule"   "all"]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Parameters  | <p><i>objname</i><br/>is the name of the table and column or of the user-defined datatype from which the rule is to be unbound. If the parameter is not of the form "<i>table.column</i>", then <i>objname</i> is assumed to be a user-defined datatype. Unbinding a rule from a user-defined datatype also unbinds it from columns of the same type. Columns that are already bound to a different rule are unaffected.</p> <p><i>futureonly</i><br/>prevents columns of the specified user-defined datatype from losing their rules. It is ignored when unbinding a rule from a column.</p> <p><i>accessrule</i><br/>indicates that you are unbinding the access rule bound to <i>objname</i>.</p> <p><i>all</i><br/>specifies that you are unbinding all rules bound to <i>objname</i>.</p>                                                                                                                                                                                                                                                                            |
| Examples    | <p><b>Example 1</b> Unbinds the rule from the <code>startdate</code> column of the <code>employees</code> table:</p> <pre>sp_unbindrule "employees.startdate"</pre> <p><b>Example 2</b> Unbinds the rule from the user-defined datatype named <code>def_ssn</code> and all columns of that type:</p> <pre>sp_unbindrule def_ssn</pre> <p><b>Example 3</b> The user-defined datatype <code>ssn</code> no longer has a rule, but existing <code>ssn</code> columns are unaffected:</p> <pre>sp_unbindrule ssn, futureonly</pre> <p><b>Example 4</b> You can use the <code>all</code> parameter to unbind both access rules and domain rules. For example, to unbind all the access rules and domain rules on the <code>publishers</code> table:</p> <pre>sp_unbindrule publishers, null, "all"</pre> <p>To unbind the access rule from a user-defined datatype for subsequent uses of this datatype, issue:</p> <pre>sp_unbindrule def_ssn, futureonly, "accessrule"</pre> <p>To unbind both access rules and domain rules for subsequent uses of this datatype, issue:</p> |

```
sp_unbindrule def_ssn, futureonly, "all"
```

**Example 5** This access rule is bound to the publishers table:

```
sp_bindrule empl_access, "publishers.pub_id"
```

To unbind this rule, issue the following:

```
sp_unbindrule "empl_access", NULL, "accessrule"
```

Usage

- Executing `sp_unbindrule` removes a rule from a column or from a user-defined datatype in the current database. If you do not want to unbind the rule from existing `objname` columns, use `futureonly` as the second parameter.
- You cannot use `sp_unbindrule` to unbind a check constraint. Use `alter table` to drop the constraint.
- To unbind a rule from a table column, specify the *objname* argument in the form “*table.column*”.
- The rule is unbound from all existing columns of the user-defined datatype unless the rule has been changed or the value of the optional second parameter is `futureonly`.
- To display the text of a rule, execute `sp_helptext` with the rule name as the parameter.

Permissions

Only the object owner can execute `sp_unbindrule`.

Auditing

Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 68           | unbind              | sp_unbindrule                    | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – NULL</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** create rule, drop rule

**System procedures** sp\_bindrule, sp\_helptext

## sp\_version

|             |                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns the version information of the installation scripts ( <i>installmaster</i> , <i>installdbccdb</i> , and so on) that was last run and whether it was successful.                                                   |
| Syntax      | sp_version [ <i>script_file</i> , [all]]                                                                                                                                                                                  |
| Parameters  | <p><i>script_file</i><br/>is the name of the installation script (the default value is NULL).</p> <p>all<br/>reports details about the installation scripts, such as the date it was run and the time it took to run.</p> |
| Examples    | <b>Example 1</b> Returns the script name, version, and status of all installation scripts that have been run:                                                                                                             |

```

sp_version
Script          Version
Status
-----
installmaster  15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu
Sep 23 22:12:12 2004
Complete
installmaster  15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu
Sep 23 22:12:12 2004
Complete
installmodel   15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1861/32-
bit/OPT/Mon Sep 27 23:40:02 2004
Complete

```

**Example 2** Returns information about the *installmaster* installation script:

```

sp_version      installmaster
-----
installmaster  15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu
Sep 23 22:12:12 2004
Complete

```

**Example 3** Returns script file name, date, time, version, and status for all the installation scripts run:

```

sp_version null, 'all'
Script
Version          Status
Start/End Date
-----
installdbccdb   15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1861/32-

```

```

bit/OPT/Mon Sep 27 23:40:02 2004
Complete [Started=Sep 29 2004 4:41PM] - [Completed=Sep 29 2004 4:42PM]
installmaster
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu Sep 23 22:12:
12 2004
Complete [Started=Sep 29 2004 3:49PM] - [Completed=Sep 29 2004 3:58PM]
installmodel
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1861/32-bit/OPT/Mon Sep 27 23:
40:02 2004
Complete [Started=Sep 29 2004 4:51PM] - [Completed=Sep 29 2004 4:51PM]

```

**Example 4** Returns script file name, version, and status of installation of all the install scripts having names like *install%*:

```

sp_version 'install%'
Script
Version          Status
-----
installdbccdb
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1861/32-bit/OPT/Mon Sep 27
23:40:02 2004      Complete
installmaster
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu Sep 23 22:12:
12 2004            Complete
installmodel
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1861/32-bit/OPT/Mon Sep 27 23:
40:02 2004        Complete

```

**Example 5** Returns all detailed information about installation scripts matching the wildcard “install%”:

```

sp_version 'install%', 'all'
Script
Version          Status
Start/End Date
-----
installmaster
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu Sep 23 22:12:
12 2004
Complete [Started=Sep 29 2004 3:49PM] - [Completed=Sep 29 2004 3:58PM]

```

**Example 6** Returns all detailed information about the *installmaster* installation script:

```

sp_version 'installmaster', 'all'
Script
Version          Status
Start/End Date

```

```

-----
installmaster
15.0/EBF XXXXX/B/Sun_svr4/OS 5.8/asemain/1/32-bit/OPT/Thu Sep 23 22:12:
12 2004
Complete [Started=Sep 29 2004 3:49PM] - [Completed=Sep 29 2004 3:58PM]

```

**Usage** sp\_version allows you to determine the current version of the scripts (*installmaster*, *installdbccdb*, and so on) installed on Adaptive Server, and whether they ran successfully or not, and the time they took to complete

**Permissions** Any user can run sp\_version.

**Auditing** Values in event and extrainfo columns from the sysaudits table are:

| <b>Event</b> | <b>Audit option</b> | <b>Command or access audited</b> | <b>Information in extrainfo</b>                                                                                                                                                                                                                                                                                                                                  |
|--------------|---------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38           | exec_procedure      | Execution of a procedure         | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

## sp\_volchanged

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Notifies the Backup Server that the operator performed the requested volume handling during a dump or load.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax      | <code>sp_volchanged session_id, devname, action<br/>[, fname [, vname]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><i>session_id</i><br/>identifies the Backup Server session that requested the volume change. Use the <code>@session_id</code> parameter specified in the Backup Server's volume change request.</p> <p><i>devname</i><br/>is the device on which a new volume was mounted. Use the <code>@devname</code> parameter specified in the Backup Server's volume change request. If the Backup Server is not located on the same machine as the Adaptive Server, use the form:</p> <pre>device at backup_server_name</pre> <p><i>action</i><br/>indicates whether the Backup Server should abort, proceed with, or retry the dump or load.</p> <p><i>fname</i><br/>is the file to be loaded. If you do not specify a file name with <code>sp_volchanged</code>, the Backup Server loads the file = <code>filename</code> parameter of the load command. If neither <code>sp_volchanged</code> nor the load command specifies which file to load, the Backup Server loads the first file on the tape.</p> <p><i>vname</i><br/>is the volume name that appears in the ANSI tape label. The Backup Server writes the volume name in the ANSI tape label when overwriting an existing dump, dumping to a brand new tape, or dumping to a tape whose contents are not recognizable. If you do not specify a <code>vname</code> with <code>sp_volchanged</code>, the Backup Server uses the <code>dumpvolume</code> value specified in the dump command. If neither <code>sp_volchanged</code> nor the dump command specifies a volume name, the Backup Server leaves the name field of the ANSI tape label blank.</p> <p>During loads, the Backup Server uses the <code>vname</code> to confirm that the correct tape has been mounted. If you do not specify a <code>vname</code> with <code>sp_volchanged</code>, the Backup Server uses the <code>dumpvolume</code> specified in the load command. If neither <code>sp_volchanged</code> nor the load command specifies a volume name, the Backup Server does not check the name field of the ANSI tape label before loading the dump.</p> |
| Examples    | The operator changes the tape, then issues the command:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

```
sp_volchanged 8, "/dev/nrmt4", RETRY
```

The following message from Backup Server indicates that a mounted tape's expiration date has not been reached:

```
Backup Server: 4.49.1.1: OPERATOR: Volume to be overwritten on
'/dev/rmt4' has not expired: creation date on this volume is Sunday, Nov.
15, 1992, expiration date is Wednesday, Nov. 25, 1992.
Backup Server: 4.78.1.1: EXECUTE sp_volchanged
    @session_id = 8,
    @devname = '/auto/remote/pubs3/SERV/Masters/testdump',
    @action = { 'PROCEED' | 'RETRY' | 'ABORT' }
```

Usage

- If the Backup Server detects a problem with the currently mounted volume, it requests a volume change:
  - *On OpenVMS systems* – the Backup Server sends volume change messages to the operator terminal on the machine on which it is running. Use the with notify = client option of the dump or load command to route other Backup Server messages to the terminal session on which the dump or load request initiated.
  - *On UNIX systems* – the Backup Server sends messages to the client that initiated the dump or load request. Use the with notify = operator\_console option of the dump or load command to route messages to the terminal where the Backup Server was started.
  - After mounting another volume, the operator executes sp\_volchanged from any Adaptive Server that can communicate with the Backup Server performing the dump or load. The operator does not have to log into the Adaptive Server on which the dump or load originated.
- *On OpenVMS systems* – the operating system—not the Backup Server—requests a volume change when it detects the end of a volume or when the specified drive is offline. The operator uses the OpenVMS REPLY command to reply to these messages.
- *On UNIX systems* – the Backup Server requests a volume change when the tape capacity has been reached. The operator mounts another tape and executes sp\_volchanged. Table 1-43 illustrates this process.

**Table 1-43: Changing tape volumes on a UNIX system**

| Sequence | Operator, using isql                                                                 | Adaptive Server | Backup Server |
|----------|--------------------------------------------------------------------------------------|-----------------|---------------|
| 1        | <ul style="list-style-type: none"> <li>• Issues the dump database command</li> </ul> |                 |               |



| Sequence | Operator, using isql                                                                                                                                      | Adaptive Server                                                                                                                                               | Backup Server                                                                                                                                                                                 |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2        |                                                                                                                                                           | <ul style="list-style-type: none"> <li>Sends dump request to Backup Server</li> </ul>                                                                         |                                                                                                                                                                                               |
| 3        |                                                                                                                                                           |                                                                                                                                                               | <ul style="list-style-type: none"> <li>Receives dump request message from Adaptive Server</li> <li>Sends message for tape mounting to operator</li> <li>Waits for operator's reply</li> </ul> |
| 4        | <ul style="list-style-type: none"> <li>Receives volume change request from Backup Server</li> <li>Mounts tapes</li> <li>Executes sp_volchanged</li> </ul> |                                                                                                                                                               |                                                                                                                                                                                               |
| 5        |                                                                                                                                                           |                                                                                                                                                               | <ul style="list-style-type: none"> <li>Checks tapes</li> <li>If tapes are okay, begins dump</li> <li>When tape is full, sends volume change request to operator</li> </ul>                    |
| 6        | <ul style="list-style-type: none"> <li>Receives volume change request from Backup Server</li> <li>Mounts tapes</li> <li>Executes sp_volchanged</li> </ul> |                                                                                                                                                               |                                                                                                                                                                                               |
| 7        |                                                                                                                                                           |                                                                                                                                                               | <ul style="list-style-type: none"> <li>Continues dump</li> <li>When dump is complete, sends messages to operator and Adaptive Server</li> </ul>                                               |
| 8        | <ul style="list-style-type: none"> <li>Receives message that dump is complete</li> <li>Removes and labels tapes</li> </ul>                                | <ul style="list-style-type: none"> <li>Receives message that dump is complete</li> <li>Releases locks</li> <li>Completes the dump database command</li> </ul> |                                                                                                                                                                                               |

Permissions Any user can execute sp\_volchanged.

Auditing Values in event and extrainfo columns from the sysaudits table are:

| Event | Audit option   | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | exec_procedure | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also

**Commands** dump database, dump transaction, load database, load transaction

**Utility** isql

## sp\_webservices

**Description** Creates and manages the proxy tables used in the Adaptive Server Web Services Engine.

**Syntax** To create a proxy table:

```
sp_webservices 'add', 'wsdl_uri' [, sds_name]
[, 'method_name=proxy_table
[,method_name=proxy_table]* ' ]
```

To display usage information for sp\_webservices:

```
sp_webservices help [, 'option']
```

To list the proxy tables mapped to a WSDL file:

```
sp_webservices 'list' [, 'wsdl_uri'] [, sds_name]
```

To modify timeout setting:

```
sp_webservices 'modify', 'wsdl_uri', 'timeout=time'
```

To remove proxy tables mapped to a WSDL file:

```
sp_webservices 'remove', 'wsdl_uri' [, sds_name]
```

### Options for user-defined Web services

To create a database alias for user-defined Web services:

```
sp_webservices 'addalias' alias_name , database_name
```

To deploy a user-defined Web service:

```
sp_webservices 'deploy', ['all' | 'service_name']
```

To drop a database alias in user-defined Web services:

```
sp_webservices 'dropalias' alias_name
```

To list the proxy tables mapped to a WSDL file in user-defined Web services:

```
sp_webservices 'listudws' [, 'service_name']
```

To list a database alias or aliases for a user-defined Web service.

```
sp_webservices 'listalias'
```

To undeploy a user-defined Web service:

```
sp_webservices 'undeploy', ['all' | 'service_name']
```

Parameters

'add', 'wsdl\_uri' [, 'sds\_name'] [, 'method\_name=proxy\_table',  
*method\_name=proxy\_table* ]\* ' '

is used to create a proxy table for a Web method specified by a WSDL file. When the add option is used successfully, the list option is invoked automatically to describe the schema of the new proxy table.

- *wsdl\_uri* – is the location for the WSDL file to be mapped to the new proxy table. If this parameter is specified, Web Services ensures that the URI exists in the syswsdl table.
- *sds\_name* – is the name specified for the ASE Web Services Engine in the *interfaces* or *sql.ini* file. The default value is ws. If no entry exists in the sysattributes table, an error results.
- *method\_name* – is the name of the Web method to be mapped to a proxy table. The *method\_name* specified must be the name of a Web method specified in the associated WSDL file.
- *proxy\_table* – is the name of proxy table to which the Web method specified in *method\_name* is mapped.

'addalias' *alias\_name* , *database\_name*

is used to create an alias representing a database name in user-defined Web services, where:

- *alias\_name* – is the alias for the specified database. This parameter is required.
- *database\_name* – is the name of the database for which the alias is specified. This parameter is required.

An alias provides greater control in specifying the portion of the URL representing the database name. Used with the userpath option of the create service command, an alias provides complete control over the URL used to access a user-defined Web service.

`'deploy', ['all' | 'service_name']`

is used to deploy a user-defined Web service, making it accessible to the ASE Web Services Engine through HTTP or HTTPS, where:

- `all` – specifies that all user-defined Web services are to be deployed for the current database.
- `service_name` – is the name of the user-defined Web service to be deployed.

The `deploy` and `undeploy` options are used to control when user-defined Web services are available. The system role `webservices_role` privilege is required for this option.

If the `all` parameter is specified, the ASE Web Services Engine deletes its internal cache of user-defined Web services and rereads all metadata about user-defined Web services from Adaptive Server Enterprise.

You cannot drop or rename a user-defined Web service that is currently deployed.

`'dropalias' alias_name`

is used to drop an alias representing a database name, where `alias_name` is the alias to be dropped.

You cannot drop an alias if it is being referenced by a deployed user-defined Web service. To drop the alias, undeploy the user-defined Web service that references the alias first.

`help[, 'option']`

provides instructions and examples illustrating how to use the `sp_webservices` stored procedure. The valid values for `'option'` are `add`, `list`, `remove`, and `modify`.

If you do not specify a value for `option`, the `help` option prints a brief syntax description for the `add`, `addalias`, `deploy`, `dropalias`, `list`, `listalias`, `listudws`, `modify`, `remove`, and `undeploy` options.

'list' [, '*wSDL\_uri*] [, *sds\_name*]

lists Web methods described in a WSDL file, where:

- *wSDL\_uri* – is the URI for the mapped WSDL file. If you do not specify a value for *wSDL\_uri*, the list option displays information about all Web methods that have been mapped to proxy tables.
- *sds\_name* – is the name of the SDS server specified for the ASE Web Services Engine in the *interfaces* or *sql.ini* file. The default value is *ws*. If no entry exists in the *sysattributes* table, an error results.

If you specify neither the *wSDL\_uri* nor the *sds\_name* parameter, all entries in the *sysattributes* table are listed, ordered by *wSDLid*.

If the Web methods described in the WSDL file:

- Have already been mapped to proxy tables – the list option prints information about each proxy table.
- Have **not** already been mapped to proxy tables – the list option prints SQL that can be used to create proxy tables.

'listaliases'

is used to list all aliases in user-defined Web services.

'listudws' [, '*service\_name*']

is used to list user-defined Web services for the current database, where *service\_name* is the name of the user-defined Web service to be listed.

If you do not specify the *service\_name* parameter, all user-defined Web services are listed.

'modify', '*wSDL\_uri*', 'timeout=*time*'

is used to modify the attribute information for a WSDL file, where:

- *wSDL\_uri* – is the URI of the WSDL file for which attribute information is to be changed.
- *time* – is the interval in seconds during which a Web method must respond before the operation is aborted.

'remove', 'wsdl\_uri' [, sds\_name]

is used to remove a proxy table mapping for a Web method, where:

- *wsdl\_uri* – is the URI of the WSDL file for which the proxy table is to be removed.
- *sds\_name* – is the name of the SDS server specified for the ASE Web Services Engine in the *interfaces* or *sql.ini* file. The default value is ws.

---

**Note** An error results if no entry exists in the sysattributes table.

---

'undeploy', [all | 'service\_name']

is used to make a user-defined Web service inaccessible to the Adaptive Server Enterprise Web Services Engine through HTTP or HTTPS, where:

- *all* – specifies that all user-defined Web services are to be undeployed for the current database.
- *service\_name* – is the name of the user-defined Web service to be undeployed.

Use the *deploy* and *undeploy* options to control when user-defined Web services are available. The system role *webservices\_role* privilege is required for this option.

## Examples

**Example 1** Invokes an RPC/encoded Web method to display the exchange rate between two currencies.

- 1 Use the *add* option of *sp\_webservices* to map Web methods to proxy tables:

```
1> sp_webservices 'add',
'http://www.xmethods.net/sd/2001/CurrencyExchangeService.wsdl'
2> go
```

The *getRate* Web method is mapped to a proxy table of the same name.

- 2 Invoke the Web method by selecting from the proxy table:

```
1> select * from getRate where _country1 = 'usa' and _country2 = 'india'
2> go
```

The results returned for the previous *select* show the exchange rate for the specified parameters:

```
Result          _country1      _country2
43.000000      usa            india
(1 row affected)
```

**Example 2** Invokes a Web method to display stock information within an XML document.

- 1 Use the add option of sp\_webservices to map Web methods to proxy tables:

```
1> sp_webservices "add" , "http://www.webserviceX.net/stockquote.asmx?WSDL"
2> go
```

The GetQuote Web method is mapped to a proxy table of the same name.

- 2 Invoke the Web method by selecting the outxml column of the GetQuote proxy table:

```
1> select outxml from GetQuote where _inxml = '<?xml version="1.0"
encoding="utf-8"?>
2>     <GetQuote xmlns="http://www.webserviceX.NET/">
3>         <symbol>SY</symbol>
4>     </GetQuote>'
5> go
```

The results for the previous select display quote information within an XML document:

outxml

```
<?xml version="1.0" encoding="UTF-8" ?><GetQuoteResponse
xmlns="http://www.webserviceX.NET/"><GetQuoteResult><StockQuotes><Stock>
<Symbol>SY</Symbol><Last>21.48</Last><Date>7/21/2005</Date><Time>4:01pm
</Time><Change>+1.72</Change><Open>20.00</Open><High>21.60</High>
<Low>19.91</Low><Volume>2420100</Volume><MktCap>1.927B</MktCap>
<PreviousClose>19.76</PreviousClose><PercentageChange>+8.70%
</PercentageChange><AnnRange>12.75 - 20.44</AnnRange><Earns>0.706</Earns>
<P-E>27.99</P-E><Name>SYBASE INC</Name></Stock></StockQuotes>
</GetQuoteResult></GetQuoteResponse>
```

(1 row affected)

**Example 3** Invokes the GetQuote Web method, mapped to a proxy table in the previous example, through a view to display stock information.

- 1 Create a table to hold symbols representing stocks to use this Web service:

```
1> create table stocksymbol (symbol varchar(100))
2> go
```

- 2 Insert data into the stocksymbol table:

```
1> insert stocksymbol values("SY")
2> insert stocksymbol values("ORCL")
3> go
```



## 3 Create a view that invokes the GetQuote Web method:

```

1> CREATE VIEW getstockvw as
2> select Symbol = xmlextract('//Stock/Symbol/text()',outxml returns varchar(5)),
3>    Name = xmlextract('//Stock/Name/text()',outxml returns varchar(20)),
4>    Time = xmlextract('//Stock/Time/text()',outxml returns varchar(10)),
5>    Date = xmlextract('//Stock/Date/text()',outxml returns date),
6>    High = xmlextract('//Stock/High/text()',outxml returns decimal(15,2)),
7>    Low = xmlextract('//Stock/Low/text()',outxml returns decimal(15,2))
8> FROM GetQuote ,stocksymbol
9> WHERE _inxml = '<GetQuote
xmlns="http://www.webserviceX.NET/"><symbol>'+symbol+'</symbol></GetQuote>'
10> go

```

## 4 Select from the getstockvw view to view output from the GetQuotes method:

```

1> select * from getstockvw
2> go

```

The results for the previous select display quote information for the parameters specified by the view definition:

| Symbol | Name         | Time   | Date        | High  | Low   |
|--------|--------------|--------|-------------|-------|-------|
| SY     | SYBASE INC   | 4:01pm | Jul 21 2005 | 21.60 | 19.91 |
| ORCL   | ORACLE CORP  | 4:00pm | Jul 21 2005 | 14.05 | 13.54 |
| MSFT   | MICROSOFT CP | 4:00pm | Jul 21 2005 | 26.48 | 26.19 |

(3 rows affected)

**Example 4** Shows an audit table entry for the following command entered in the pubs2 database by the user “bob”:

```
sp_webservices 'deploy', 'all'
```

The corresponding audit table entry lists 110, bob, and pubs2 as values in the event, loginname, and dbname columns, respectively. The extrainfo column contains the following:

```
webservices_role; deploy_all; ; ; ; bob/ase;
```

**Example 5** Shows an audit table entry for the following command entered in the pubs2 database by the user “bob”:

```
sp_webservices 'deploy', 'rawservice'
```

The corresponding audit table entry lists 110, bob, and pubs2 as values in the event, loginname, and dbname columns, respectively. The extrainfo column contains the following:

```
webservices_role; deploy; ; ; ; bob/ase;
```

**Example 6** Shows an audit table entry for the following command entered in the pubs2 database by the user “bob”:

```
sp_webservices 'undeploy', 'all'
```

The corresponding audit table entry lists 111, bob, and pubs2 as values in the event, loginname, and dbname columns, respectively. The extrainfo column contains the following:

```
webservices_role; undeploy_all; ; ; ; bob/ase;
```

**Example 2** Shows an audit table entry for the following command entered in the pubs2 database by the user “bob”:

```
sp_webservices 'undeploy', 'rawservice'
```

The corresponding audit table entry lists 111, bob, and pubs2 as values in the event, loginname, and dbname columns, respectively. The extrainfo column contains the following:

```
webservices_role; deploy; ; ; ; bob/ase;
```

For a full description of sysaudits table columns, see the Adaptive Server Enterprise *System Administration Guide*.

## Usage

sp\_webservices add

If you not specify *method\_name* and *proxy\_table* values for a Web method, the proxy table generated for the Web method is, by default, the name of the Web method specified in the WSDL file. If there is already a proxy table with the name of this Web method, a new proxy table is generated with a name like the following:

```
method_nameN
```

Where:

- *method\_name* – is the default proxy table name
- *N* – is a digit from 1 to 9 denoting each successive mapping of the Web method. There can be as many as 99 duplicate proxy tables.

If you do specify *method\_name* and *proxy\_table* values for a Web method, the name of the proxy table must be new. If there is already a proxy table with the name specified in *proxy\_table*, an error results, and none of the Web methods specified in the add option are mapped to proxy tables.

The output from the add option lists the methods that have been successfully mapped to proxy tables as well as those that have not been mapped. The name of a proxy table for an unmapped Web method is indicated as NULL in the output from the add option.

---

**Note** The columns used for input and output vary for proxy tables generated for RPC/encoded Web methods and document/literal Web methods. A proxy table representing an RPC/encoded Web method contains a column for each input and output parameter. A proxy table representing a document/literal Web method contains two columns, `_inxml` and `outxml`.

---

#### Security for user-defined Web services

The system role `webservices_role` is required to use the `deploy` and `undeploy` options for `sp_webservices`. To execute a user-defined Web service, a valid login and permissions to execute the corresponding stored procedure are required.

To create, drop, and execute user-defined Web services, you need the same privileges as are necessary to create, drop, and execute stored procedures in Adaptive Server Enterprise. See the Adaptive Server Enterprise *System Administration Guide* for details on how to set the proper privileges using the `grant` and `revoke` commands.

#### Auditing

- Audit event number 110 corresponds to the `deploy` option of `sp_webservices`.
- Audit event number 111 corresponds to the `undeploy` option of `sp_webservices`.

User-defined Web services are modeled as stored procedures within Adaptive Server Enterprise. In manipulating user-defined Web services, Adaptive Server Enterprise generates the following events using the existing auditing coverage for stored procedures:

- The creation of a user-defined Web service – Event 11 named "Create Procedure" is generated
- The dropping of a user-defined Web service – Event 28 named "Drop Procedure" is generated
- The execution of a user-defined Web service – Event 38 named "Execution of Stored Procedure" is generated

For detailed information on existing auditing functionality, see the *System Administration Guide*.

In addition to existing auditing functionality, Adaptive Server Enterprise provides two audit events for the deploy and undeploy options of `sp_webservices`.

Audit records are stored in the `sysaudits` system table. You can enable auditing for Web services with the following command:

```
sp_audit "security", "all", "all", "on"
```

See also

**Commands** `create service`

**Documentation** *Web Services User's Guide*.

## sp\_who

|             |                                                                                                                                                                                                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Reports information about all current Adaptive Server users and processes or about a particular user or process.                                                                                                                                                      |
| Syntax      | <code>sp_who [loginame   "spid"]</code>                                                                                                                                                                                                                               |
| Parameters  | <p><i>loginame</i><br/>is the Adaptive Server login name of the user you are requesting a report on.</p> <p><i>spid</i><br/>is the number of the process you are requesting a report on. Enclose process numbers in quotes (Adaptive Server expects a char type).</p> |
| Examples    | <b>Example 1</b> Displays temporary database names of all active sessions under the tempdbname column:                                                                                                                                                                |

```
sp_who
-----
fid spid status loginame origname hostname blk_spid dbname tempdbname cmd block_xloid
-----
0 2 sleeping NULL NULL NULL 0 master tempdb DEADLOCK TUNE 0
0 3 sleeping NULL NULL NULL 0 master tempdb SHUTDOWN HANDLER 0
0 4 sleeping NULL NULL NULL 0 master tempdb ASTC HANDLER 0
0 5 sleeping NULL NULL NULL 0 master tempdb CHECKPOINT SLEEP 0
```

**Example 2** Reports on the processes running on Adaptive Server. Process 11 (a select into on a table) is blocked by process 8 (a begin transaction followed by an insert on the same table). For process 8, the current *loginame* is “robert”, but the original *loginame* is “sa”. Login “sa” executed a set proxy command to impersonate the user “robert”:

```
sp_who
-----
fid spid status loginame origname hostname blk_spid dbname cmd blk_xloid
-----
0 1 recv sleep bird bird jazzy 0 master AWAITING COMMAND 0x0000ed92
0 2 sleeping NULL NULL 0 master NETWORK HANDLER 0x0000ed92
0 3 sleeping NULL NULL 0 master MIRROR HANDLER 0x0000ed92
0 4 sleeping NULL NULL 0 master AUDIT PROCESS 0x0000ed92
0 5 sleeping NULL NULL 0 master CHECKPOINT SLEEP 0x0000ed92
0 6 recv sleep rose rose petal 0 master AWAITING COMMAND 0x0000ed92
0 7 sleeping NULL NULL actor 0 sybsystemdb ASTC HANDLER 0x0000ed92
0 8 running robert sa helos 0 master SELECT 0x0000ed92
0 9 send sleep daisy daisy chain 0 pubs2 SELECT 0x0000ed92
0 10 alarm sleep lily lily pond 0 master WAITFOR 0x0000ed92
0 11 lock sleep viola viola cello 8 pubs2 INSERT 0x0000ed92
```

**Example 3** Reports on the processes being run by the user “victoria”:

```
sp_who victoria
```

**Example 4** Reports what Adaptive Server process number 17 is doing:

```
sp_who "17"
```

**Example 5** Reports on the processes running on Adaptive Server. Although no user processes other than sp\_who are running, the server still shows activity. During idle cycles, the housekeeper wash task moves dirty buffers into the buffer wash region, the housekeeper chores task performs other maintenance tasks. The housekeeper garbage collection task, which cleans up data that was logically deleted and resets the rows so that tables have space again, operates at the priority level of the ordinary user.

```
sp_who
```

| fid | spid | status   | loginame | origname | hostname | blk_spid | dbname | cmd              | block_xloid |
|-----|------|----------|----------|----------|----------|----------|--------|------------------|-------------|
| 0   | 1    | running  | sa       | sa       | helos    | 0        | master | SELECT           | 0           |
| 0   | 2    | sleeping | NULL     | NULL     |          | 0        | master | NETWORK HANDLER  | 0           |
| 0   | 3    | sleeping | NULL     | NULL     |          | 0        | master | DEADLOCK TUNE    | 0           |
| 0   | 4    | sleeping | NULL     | NULL     |          | 0        | master | MIRROR HANDLER   | 0           |
| 0   | 5    | sleeping | NULL     | NULL     | actor    | 0        | master | ASTC HANDLER     | 0           |
| 0   | 6    | sleeping | NULL     | NULL     |          | 0        | master | CHECKPOINT SLEEP | 0           |
| 0   | 5    | sleeping | NULL     | NULL     |          | 0        | master | HK WASH          | 0           |
| 0   | 5    | sleeping | NULL     | NULL     |          | 0        | master | HK GC            | 0           |
| 0   | 5    | sleeping | NULL     | NULL     |          | 0        | master | HK CHORES        | 0           |
| 0   | 5    | sleeping | NULL     | NULL     |          | 0        | master | HK WASH          | 0           |

**Example 6** Reports on a system-induced rollback, either of a transaction or a command.

```
sp_who
```

| fid | spid | status   | loginame | origname | hostname   | blk_spid | dbname | cmd      | block_xloid |
|-----|------|----------|----------|----------|------------|----------|--------|----------|-------------|
| 0   | 11   | runnable | sa       | sa       | copperhead | 0        | db     | ROLLBACK | 0           |

**Usage**

- sp\_who reports information about a specified user or Adaptive Server process.
- Without parameters, sp\_who reports which users are running what processes in all databases.
- The columns returned by sp\_who are:

| Column | Description                                                                                                                                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| fid    | Identifies the family (including the coordinating process and its worker processes) to which a lock belongs. For more information, see sp_familylock. |
| spid   | Identifies the process number. A System Administrator can use this number with the Transact-SQL kill command to stop the process.                     |

| Column      | Description                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status      | Indicates whether the process is running or sleeping.                                                                                                                                               |
| loginame    | The login or alias of the user who started the process. For all system processes, loginame is NULL.                                                                                                 |
| origname    | If the loginame is an alias, origname shows the real login name. If not, origname shows the same information as loginame.                                                                           |
| hostname    | The name of the server on which the database resides.                                                                                                                                               |
| blk_spid    | Contains the process IDs of the blocking process, if there is one. A blocking process (which may be infected or have an exclusive lock) is one that is holding resources needed by another process. |
| dbname      | Indicates the name of the database on which the process is running.                                                                                                                                 |
| cmd         | Identifies the command or process currently being executed. Evaluation of a conditional statement, such as an if or while loop, returns <code>cond</code> .                                         |
| block_xloid | Identifies the unique lock owner ID of a blocking transaction.                                                                                                                                      |

- Running `sp_who` on a single-engine server shows the `sp_who` process currently running and all other processes that are runnable or in one of the sleep states. In multi-engine servers, there can be a “running” process for each engine.
- If you enable mirrored disks or remote procedure calls, the mirror handler and the site handler also appear in the report from `sp_who`.

Permissions Any user can execute `sp_who`.

Auditing Values in event and extrainfo columns from the `sysaudits` table are:

| Event | Audit option                | Command or access audited | Information in extrainfo                                                                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38    | <code>exec_procedure</code> | Execution of a procedure  | <ul style="list-style-type: none"> <li>• <i>Roles</i> – Current active roles</li> <li>• <i>Keywords or options</i> – NULL</li> <li>• <i>Previous value</i> – NULL</li> <li>• <i>Current value</i> – NULL</li> <li>• <i>Other information</i> – All input parameters</li> <li>• <i>Proxy information</i> – Original login name, if set proxy in effect</li> </ul> |

See also **Commands** `kill`

**System procedures** `sp_familylock`, `sp_lock`





# Catalog Stored Procedures

This chapter describes catalog stored procedures, which retrieve information from the system tables in tabular form.

Topics covered are:

| Topics                         | Page |
|--------------------------------|------|
| Overview                       | 733  |
| Specifying optional parameters | 734  |
| Pattern matching               | 735  |
| System procedure tables        | 735  |
| ODBC datatypes                 | 736  |

## Overview

Table 2-1 lists the catalog stored procedures that are covered in this chapter.

**Table 2-1: Catalog stored procedures**

| Procedure            | Description                                                                                                                                                                                                     |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sp_column_privileges | Returns permissions information for one or more columns in a table or view.                                                                                                                                     |
| sp_columns           | Returns information about the type of data that can be stored in one or more columns.                                                                                                                           |
| sp_databases         | Returns a list of the databases in Adaptive Server.                                                                                                                                                             |
| sp_datatype_info     | Returns information about a particular datatype or about all supported datatypes.                                                                                                                               |
| sp_fkeys             | Returns information about foreign key constraints created in the current database with the create table or alter table command.                                                                                 |
| sp_pkeys             | Returns information about primary key constraints created for a single table with the create table or alter table command.                                                                                      |
| sp_server_info       | Returns a list of Adaptive Server attribute names and current values.                                                                                                                                           |
| sp_special_columns   | Returns the optimal set of columns that uniquely identify a row in a table or view; can also return a list of the columns that are automatically updated when any value in the row is updated by a transaction. |
| sp_sproc_columns     | Returns information about a stored procedure's input and return parameters.                                                                                                                                     |
| sp_statistics        | Returns a list of indexes on a single table.                                                                                                                                                                    |

| Procedure            | Description                                                       |
|----------------------|-------------------------------------------------------------------|
| sp_stored_procedures | Returns information about one or more stored procedures.          |
| sp_table_privileges  | Returns privilege information for all columns in a table or view. |
| sp_tables            | Returns a list of objects that can appear in a from clause.       |

Catalog stored procedures retrieve information from the system tables in tabular form.

The catalog stored procedures, created by installmaster at installation, are located in the sybssystemprocs database and are owned by the System Administrator.

Many of them can be run from any database. If a catalog stored procedure is executed from a database other than sybssystemprocs, it retrieves information from the system tables in the database from which it was executed.

All catalog stored procedures execute at isolation level 1.

All catalog stored procedures report a return status. For example, this means that the procedure executed successfully. The examples in this book do not include the return status:

```
return status = 0
```

## Specifying optional parameters

If a parameter value for a catalog stored procedure contains punctuation or embedded blanks, or is a reserved word, you must enclose it in single or double quotes. If the parameter is an object name qualified by a database name or owner name, enclose the entire name in single or double quotes.

---

**Note** Do not use delimited identifiers as catalog stored procedure parameters. Doing so may produce unexpected results.

---

In many cases, it is more convenient to supply parameters to the catalog stored procedures in the form:

```
@parametername = value
```

than to supply all the parameters. The parameter names in the syntax statements match the parameter names defined by the procedures.

For example, the syntax for `sp_columns` is:

```
sp_columns table_name [, table_owner]
           [, table_qualifier] [, column_name]
```

To use `sp_columns` to find information about a particular column, you can use:

```
sp_columns publishers, @column_name = "pub_id"
```

This provides the same information as the command with all of the parameters specified:

```
sp_columns publishers, "dbo", "pubs2", "pub_id"
```

You can also use “null” as a placeholder:

```
sp_columns publishers, null, null, "pub_id"
```

If you specify more parameters than the number of parameters expected by the system procedure, Adaptive Server ignores the extra parameters.

## Pattern matching

Adaptive Server offers a wide range of pattern matching through regular expressions. However, for maximum interoperability, assume only SQL standards pattern matching (the % and \_ wildcard characters).

## System procedure tables

The catalog stored procedures `sp_columns`, `sp_datatype_info`, `sp_special_columns`, and `sp_sproc_columns` use the catalog stored procedure tables `spt_datatype_info`, `spt_datatype_info_ext`, and `spt_server_info` in the `sybsystemprocs` database to convert internal system values such as status bits into human-readable format.

The catalog stored procedures `sp_column_privileges` and `sp_table_privileges` create and then drop temporary tables.

## ODBC datatypes

Table 2-2 and Table 2-3 list the datatype code numbers and matching datatype names returned by `sp_columns` and `sp_sproc_columns` in the `data_type` column. The source for the description is the Open Database Connectivity (ODBC) Application Programming Interface (API).

**Table 2-2: Code numbers for ODBC datatypes**

| <b>Datatype</b>  | <b>Code #</b> |
|------------------|---------------|
| char             | 1             |
| decimal          | 3             |
| double precision | 8             |
| float            | 6             |
| integer          | 4             |
| numeric          | 2             |
| real             | 7             |
| smallint         | 5             |
| varchar          | 12            |
| wchar            | -8            |
| wvarchar         | -9            |
| wlongvarchar     | -10           |

**Table 2-3: Code numbers for extended datatypes**

| <b>Datatype</b>                  | <b>Code #</b> |
|----------------------------------|---------------|
| bigint                           | -5            |
| binary (bit datatype)            | -2            |
| bit                              | -7            |
| date                             | 9             |
| java.lang.Object                 | 1111          |
| long univarchar                  | -10           |
| long varbinary                   | -4            |
| long varchar                     | -1            |
| time                             | 10            |
| timestamp                        | 11            |
| tinyint                          | -6            |
| unichar                          | -8            |
| univarchar                       | -9            |
| varbinary (bit-varying datatype) | -3            |

## sp\_column\_privileges

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns permissions information for one or more columns in a table or view.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Syntax      | <code>sp_column_privileges table_name [, table_owner<br/>[, table_qualifier [, column_name]]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>table_name</i><br/>is the name of the table. The use of wildcard characters in pattern matching is not supported.</p> <p><i>table_owner</i><br/>is the name of the table owner. The use of wildcard characters in pattern matching is not supported. If you do not specify the table's owner, <code>sp_column_privileges</code> looks for a table owned by the current user and then for a table owned by the Database Owner.</p> <p><i>table_qualifier</i><br/>is the name of the database. Values are the name of the current database and null.</p> <p><i>column_name</i><br/>is the name of the column whose permissions you want to display. Use wildcard characters to request information for more than one column. If you do not specify a column name, permissions information for all columns in the specified table is returned.</p> |

### Examples

```
sp_column_privileges discounts, null, null, discounttype
```

| table_qualifier | table_owner | table_name | column_name  |
|-----------------|-------------|------------|--------------|
| grantor         | grantee     | privilege  | is_grantable |
| pubs2           | dbo         | discounts  | discounttype |
| dbo             | dbo         | SELECT     | YES          |
| pubs2           | dbo         | discounts  | discounttype |
| dbo             | dbo         | UPDATE     | YES          |
| pubs2           | dbo         | discounts  | discounttype |
| dbo             | dbo         | REFERENCE  | YES          |
| pubs2           | dbo         | discounts  | discounttype |
| dbo             | guest       | SELECT     | NO           |
| pubs2           | dbo         | discounts  | discounttype |
| dbo             | guest       | UPDATE     | NO           |
| pubs2           | dbo         | discounts  | discounttype |
| dbo             | guest       | REFERENCE  | NO           |

Usage

- The results set for sp\_column\_privileges is:

| Column          | Datatype    | Description                                                                                                                                                                                                                                                                                                                                  |
|-----------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| table_qualifier | varchar(32) | The name of the database in which the table specified for the <i>table_name</i> parameter is stored.                                                                                                                                                                                                                                         |
| table_owner     | varchar(32) | The table owner. If no value was specified for the <i>table_owner</i> parameter, this value is the current owner or the Database Owner.                                                                                                                                                                                                      |
| table_name      | varchar(32) | The name specified for the <i>table_name</i> parameter. This value cannot be NULL.                                                                                                                                                                                                                                                           |
| column_name     | varchar(32) | The specified column name. If no column name was specified in the statement, the results include all columns in the specified table.                                                                                                                                                                                                         |
| grantor         | varchar(32) | The name of the database user who has granted permissions on column_name to grantee. This value cannot be NULL.                                                                                                                                                                                                                              |
| grantee         | varchar(32) | The name of the database user who was granted permissions on column_name by grantor. This value cannot be NULL.                                                                                                                                                                                                                              |
| privilege       | varchar(32) | Identifies the column privilege. May be one of the following: <ul style="list-style-type: none"><li>• SELECT – The grantee is permitted to retrieve data for the column.</li><li>• UPDATE – The grantee is permitted to update data in the column.</li><li>• REFERENCE – The grantee is permitted only for referential constraint.</li></ul> |
| is_grantable    | varchar(3)  | Indicates whether the grantee is permitted to grant the privilege to other users. The values are YES, NO, and NULL.                                                                                                                                                                                                                          |

Permissions

Any user can execute sp\_column\_privileges.

## sp\_columns

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns information about the type of data that can be stored in one or more columns.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <code>sp_columns table_name [, table_owner ]<br/>[, table_qualifier] [, column_name]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Parameters  | <p><i>table_name</i><br/>is the name of the table or view. Use wildcard characters to request information about more than one table.</p> <p><i>table_owner</i><br/>is the owner of the table or view. Use wildcard characters to request information about tables owned by more than one user. If you do not specify a table owner, <code>sp_columns</code> looks for tables owned by the current user and then for tables owned by the Database Owner.</p> <p><i>table_qualifier</i><br/>is the name of the database. This can be either the current database or <code>NULL</code>.</p> <p><i>column_name</i><br/>is the name of the column for which you want information. Use wildcard characters to request information about more than one column.</p> |

**Examples** **Example 1** Displays information about all columns in the publishers table that begin with “p”:

```
sp_columns "publishers", null, null, "p%"

table_qualifier table_owner table_name column_name data_type type_name
precision length scale radix nullable remarks ss_data_type colid
-----
```

|       |    |  |      |            |          |      |         |   |  |  |  |  |
|-------|----|--|------|------------|----------|------|---------|---|--|--|--|--|
| pubs2 |    |  | dbo  | publishers | pub_id   | 1    | char    |   |  |  |  |  |
| NULL  | 4  |  | NULL | NULL       | 0        | NULL | 47      | 1 |  |  |  |  |
| pubs2 |    |  | dbo  | publishers | pub_name | 12   | varchar |   |  |  |  |  |
| NULL  | 40 |  | NULL | NULL       | 1        | NULL | 39      | 2 |  |  |  |  |

**Example 2** Displays information about all columns beginning with “st” in tables that begin with “s”:

```
sp_columns "s%", null, null, "st%"
```

**Usage**

- The results set for `sp_columns` is:

| Column            | Datatype     | Description                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| table_qualifier   | varchar(32)  | The name of the database in which the table specified for the <i>table_name</i> parameter is stored.                                                                                                                                                                                                                                                                                                                             |
| table_owner       | varchar(32)  | The table owner. If no value was specified for the <i>table_owner</i> parameter, this value is the current owner or the Database Owner.                                                                                                                                                                                                                                                                                          |
| table_name        | varchar(32)  | NOT NULL.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| column_name       | varchar(32)  | NOT NULL.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| data_type         | smallint     | Integer code for ODBC datatype. If this is a datatype that cannot be mapped into an ODBC type, it is NULL.                                                                                                                                                                                                                                                                                                                       |
| type_name         | varchar(30)  | String representing a datatype. The underlying DBMS presents this datatype name.                                                                                                                                                                                                                                                                                                                                                 |
| precision         | int          | Number of significant digits.                                                                                                                                                                                                                                                                                                                                                                                                    |
| length            | int          | Length in bytes of a datatype.                                                                                                                                                                                                                                                                                                                                                                                                   |
| scale             | smallint     | Number of digits to the right of the decimal point.                                                                                                                                                                                                                                                                                                                                                                              |
| radix             | smallint     | Base for numeric datatypes.                                                                                                                                                                                                                                                                                                                                                                                                      |
| nullable          | smallint     | The value 1 means NULL is possible; 0 means NOT NULL.                                                                                                                                                                                                                                                                                                                                                                            |
| remarks           | varchar(254) |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ss_data_type      | smallint     | An Adaptive Server datatype.                                                                                                                                                                                                                                                                                                                                                                                                     |
| colid             | tinyint      | A column appended to the results set.                                                                                                                                                                                                                                                                                                                                                                                            |
| column_def        | varchar(255) | NULL.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| sql_data_type     | smallint     | An Adaptive Server datatype.                                                                                                                                                                                                                                                                                                                                                                                                     |
| sql_datetime_sub  | smallint     | NULL.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| char_octet_length | int          | The value of <i>char_octet_length</i> is the same as the value for the precision column if the datatype for <i>char_octet_length</i> is: <ul style="list-style-type: none"> <li>• binary</li> <li>• char</li> <li>• image</li> <li>• nchar</li> <li>• nvarchar</li> <li>• sysname</li> <li>• text</li> <li>• timestamp</li> <li>• varbinary</li> <li>• varchar</li> </ul> Otherwise, the value of <i>char_octet_length</i> is 0. |
| ordinal_position  | int          | The ordinal position of the column in the table. The first column in the table is 1.                                                                                                                                                                                                                                                                                                                                             |
| is_nullable       | varchar(3)   | Describes whether the column or parameter allows NULL as a value. From syscolumns.                                                                                                                                                                                                                                                                                                                                               |



- `sp_columns` reports the `type_name` as `float`, and `data_type` as `6` for columns defined as double precision. The Adaptive Server double precision datatype is a float implementation supports the range of values as specified in the ODBC specifications.

Permissions

Any user can execute `sp_columns`.

## sp\_databases

Description Returns a list of databases in Adaptive Server.

Syntax sp\_databases

Parameters None.

### Examples

```
sp_databases
```

| database_name | database_size | remarks |
|---------------|---------------|---------|
| -----         | -----         | -----   |
| master        | 5120          | NULL    |
| model         | 2048          | NULL    |
| mydb          | 2048          | NULL    |
| pubs2         | 2048          | NULL    |
| sybsecurity   | 5120          | NULL    |
| sybtempprocs  | 16384         | NULL    |
| tempdb        | 2048          | NULL    |

### Usage

- The results set for sp\_databases is:

| Column        | Datatype     | Description                          |
|---------------|--------------|--------------------------------------|
| database_name | char(32)     | NOT NULL database name.              |
| database_size | int          | Size of database, in kilobytes.      |
| remarks       | varchar(254) | Adaptive Server always returns NULL. |

### Permissions

Any user can execute sp\_databases.

## sp\_datatype\_info

**Description** Returns information about a particular ODBC datatype or about all ODBC datatypes.

**Syntax** sp\_datatype\_info [*data\_type*]

**Parameters** *data\_type*  
is the code number for the specified ODBC datatype about which information is returned. Datatype codes are listed in Table 2-2 on page 736 and Table 2-3 on page 736.

**Usage**

- The results set for sp\_datatype\_info is:

| Column             | Datatype     | Description                                                                                                                    |
|--------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------|
| type_name          | varchar(30)  | A DBMS-dependent datatype name (the same as the type_name column in the sp_columns results set).                               |
| data_type          | smallint     | A code for the ODBC type to which all columns of this type are mapped.                                                         |
| precision          | int          | The maximum precision for the datatype on the data source. Zero is returned for datatypes where precision is not applicable.   |
| literal_prefix     | varchar(32)  | Character(s) used to prefix a literal. For example, a single quotation mark (') for character types and 0x for binary.         |
| literal_suffix     | varchar(32)  | Character(s) used to terminate a literal. For example, a single quotation mark (') for character types and nothing for binary. |
| create_params      | varchar(32)  | A description of the creation parameters for this datatype.                                                                    |
| nullable           | smallint     | The value 1 means this datatype can be created allowing null values; 0 means it cannot.                                        |
| case_sensitive     | smallint     | The value 1 means all columns of this type are case sensitive (for collations); 0 means they are not.                          |
| searchable         | smallint     | The value 1 means columns of this type can be used in a where clause.                                                          |
| unsigned_attribute | smallint     | The value 1 means the datatype is unsigned; 0 means the datatype is signed.                                                    |
| money              | smallint     | The value 1 means it is a money datatype; 0 means it is not.                                                                   |
| auto_increment     | smallint     | The value 1 means the datatype is automatically incremented; 0 means it is not.                                                |
| local_type_name    | varchar(128) | Localized version of the data source dependent name of the datatype.                                                           |

**Permissions** Any user can execute sp\_datatype\_info.

## sp\_fkeys

**Description** Returns information about foreign key constraints created with the create table or alter table command in the current database.

**Syntax** sp\_fkeys *pktable\_name* [, *pktable\_owner*]  
[, *pktable\_qualifier*] [, *fktable\_name*]  
[, *fktable\_owner*] [, *fktable\_qualifier*]

**Parameters** *pktable\_name*  
is the name of the primary key table. The use of wildcard characters in pattern matching is not supported. You must specify either the *pktable\_name* or the *fktable\_name*, or both.

*pktable\_owner*  
is the name of the primary key table owner. The use of wildcard characters in pattern matching is not supported. If you do not specify the table owner, sp\_fkeys looks for a table owned by the current user and then for a table owned by the Database Owner.

*pktable\_qualifier*  
is the name of the database that contains the primary key table. This can be either the current database or NULL.

*fktable\_name*  
is the name of the foreign key table. The use of wildcard characters in pattern matching is not supported. Either the *fktable\_name* or the *pktable\_name*, or both, must be given.

*fktable\_owner*  
is the name of the foreign key table owner. The use of wildcard characters in pattern matching is not supported. If an *fktable\_owner* is not specified, sp\_fkeys looks for a table owned by the current user and then for a table owned by the Database Owner.

*fktable\_qualifier*  
is the name of the database that contains the foreign key table. This can be either the current database or null.

**Usage**

- sp\_fkeys returns information about foreign key constraints created with the create table or alter table command in the current database. A foreign key is a key column in a table that logically depends on a **primary key** column in another table.
- The results set for sp\_fkeys is:

---

| Column            | Datatype    | Description                                       |
|-------------------|-------------|---------------------------------------------------|
| pktable_qualifier | varchar(32) | The database that contains the primary key table. |

---

| Column            | Datatype    | Description                                                                                                 |
|-------------------|-------------|-------------------------------------------------------------------------------------------------------------|
| pktable_owner     | varchar(32) | The owner of the primary key table.                                                                         |
| pktable_name      | varchar(32) | NOT NULL.                                                                                                   |
| pkcolumn_name     | varchar(32) | NOT NULL.                                                                                                   |
| fktable_qualifier | varchar(32) | The database that contains the foreign key table.                                                           |
| fktable_owner     | varchar(32) | The owner of the foreign key table.                                                                         |
| fktable_name      | varchar(32) | NOT NULL.                                                                                                   |
| fkcolumn_name     | varchar(32) | NOT NULL.                                                                                                   |
| key_seq           | smallint    | NOT NULL. The sequence number of the column in a multicolumn primary key.                                   |
| update_rule       | smallint    | Action to be applied to the foreign key when the SQL operation is UPDATE. Zero is returned for this column. |
| delete_rule       | smallint    | Action to be applied to the foreign key when the SQL operation is DELETE. Zero is returned for this column. |

- Both the primary key and foreign key must have been declared in a create table or alter table statement.
- If the primary key table name is supplied, but the foreign key table name is NULL, sp\_fkeys returns all tables that include a foreign key to the given table. If the foreign key table name is supplied, but the primary key table name is NULL, sp\_fkeys returns all tables that are related by a primary key/foreign key relationship to foreign keys in the foreign key table.
- sp\_fkeys does not return information about keys declared with sp\_commonkey, sp\_foreignkey or sp\_primarykey.

#### Permissions

Any user can execute sp\_fkeys.

## sp\_pkeys

**Description** Returns information about primary key constraints created with the create table or alter table command for a single table.

**Syntax** sp\_pkeys *table\_name* [, *table\_owner*]  
[, *table\_qualifier*]

**Parameters**

*table\_name*  
is the name of the table. The use of wildcard characters in pattern matching is not supported.

*table\_owner*  
is the name of the table owner. The use of wildcard characters in pattern matching is not supported. If *table\_owner* is not specified, sp\_pkeys looks for a table owned by the current user and then for a table owned by the Database Owner.

*table\_qualifier*  
is the name of the database that contains the table. This can be either the current database or NULL.

**Usage**

- The results set for sp\_pkeys is:

| Column          | Datatype    | Description                                                                                                                             |
|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| table_qualifier | varchar(32) | The database name. This field can be NULL.                                                                                              |
| table_owner     | varchar(32) | The table owner. If no value was specified for the <i>table_owner</i> parameter, this value is the current owner or the Database Owner. |
| table_name      | varchar(32) | NOT NULL.                                                                                                                               |
| column_name     | varchar(32) | NOT NULL.                                                                                                                               |
| key_seq         | smallint    | NOT NULL. The sequence number of the column in a multicolumn primary key.                                                               |

- Primary keys must have been declared with the create table or alter table statement, not with sp\_primarykey.
- The term **primary key** refers to a logical primary key for a table. Adaptive Server expects that every logical primary key has a unique index defined on it and that this unique index is also returned in sp\_statistics.

**Permissions** Any user can execute sp\_pkeys.

## sp\_server\_info

**Description** Returns a list of Adaptive Server attribute names and current values.

**Syntax** `sp_server_info [attribute_id]`

**Parameters** `attribute_id`  
is the integer ID of the server attribute.

**Examples** **Example 1**

```
sp_server_info 12
attribute_id attribute_name          attribute_value
-----
12 MAX_OWNER_NAME_LENGTH 0
```

**Example 2** Returns the list of server attributes, described by the mandatory rows, and their values:

```
sp_server_info
```

**Usage** The results set for `sp_server_info` is:

| Column          | Datatype     | Description |
|-----------------|--------------|-------------|
| attribute_id    | int          | NOT NULL.   |
| attribute_name  | varchar(60)  | NOT NULL.   |
| attribute_value | varchar(255) |             |

The mandatory rows in the results set returned by `sp_server_info` are:

| ID | Server attribute name | Description                                                                                   | Value      |
|----|-----------------------|-----------------------------------------------------------------------------------------------|------------|
| 1  | DBMS_NAME             | Name of the DBMS.                                                                             | SQL SERVER |
| 2  | DBMS_VER              | Version of the DBMS.                                                                          | @@version  |
| 6  | DBE_NAME              | Unused                                                                                        |            |
| 10 | OWNER_TERM            | Adaptive Server's term for a table owner (the second part of a three-part name).              | owner      |
| 11 | TABLE_TERM            | Adaptive Server's term for a table (the third part of a three-part name).                     | table      |
| 12 | MAX_OWNER_NAME_LENGTH | Maximum length of the name for a table owner (the second part of a three-part name).          | 30         |
| 13 | TABLE_LENGTH          | The maximum number of characters for a table name.                                            | 30         |
| 14 | MAX_QUAL_LENGTH       | Maximum length of the name for a table qualifier (the first part of a three-part table name). | 30         |

| ID  | Server attribute name  | Description                                                                                                                                                                                      | Value    |
|-----|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 15  | COLUMN_LENGTH          | The maximum number of characters for a column name.                                                                                                                                              | 30       |
| 16  | IDENTIFIER_CASE        | The case sensitivity of user-defined names (table names, column names, and stored procedure names) in the database (the case in which these objects are presented in the system catalogs).       | MIXED    |
| 18  | COLLATION_SEQ          | The assumed ordering of the character set for this server.                                                                                                                                       |          |
| 19  | SAVEPOINT_SUPPORT      | Does the underlying DBMS support named savepoints?                                                                                                                                               | Y        |
| 20  | MULTI_RESULT_SETS      | Does the underlying DBMS or the gateway itself support multiple results sets (can multiple statements be sent through the gateway, with multiple results sets returned to the client)?           | Y        |
| 22  | ACCESSIBLE_TABLES      | In <code>sp_tables</code> , does the gateway return only tables, views, and so on, that are accessible by the current user (that is, the user who has at least select privileges for the table)? | Y        |
| 100 | USERID_LENGTH          | The maximum number of characters for a user name.                                                                                                                                                | 30       |
| 101 | QUALIFIER_TERM         | Adaptive Server's term for a table qualifier (the first part of a three-part name).                                                                                                              | database |
| 102 | NAMED_TRANSACTIONS     | Does the underlying DBMS support named transactions?                                                                                                                                             | Y        |
| 103 | SPROC_AS_LANGUAGE      | Can stored procedures be executed as language events?                                                                                                                                            | Y        |
| 103 | REMOTE_SPROC           | Can stored procedures be executed through the remote stored procedure APIs in DB-Library?                                                                                                        | Y        |
| 104 | ACCESSIBLE_SPROC       | In <code>sp_stored_procedures</code> , does the gateway return only stored procedures that are executable by the current user?                                                                   | Y        |
| 105 | MAX_INDEX_COLS         | Maximum number of columns in an index for the DBMS.                                                                                                                                              | 32       |
| 106 | RENAME_TABLE           | Can tables be renamed?                                                                                                                                                                           | Y        |
| 107 | RENAME_COLUMN          | Can columns be renamed?                                                                                                                                                                          | Y        |
| 108 | DROP_COLUMN            | Can columns be dropped?                                                                                                                                                                          | Y        |
| 109 | INCREASE_COLUMN_LENGTH | Can column size be increased?                                                                                                                                                                    | N        |
| 110 | DDL_IN_TRANSACTION     | Can DDL statements appear in transactions?                                                                                                                                                       | Y        |
| 111 | DESCENDING_INDEXES     | Are descending indexes supported?                                                                                                                                                                | Y        |
| 112 | SP_RENAME              | Can a stored procedure be renamed?                                                                                                                                                               | Y        |



| <b>ID</b> | <b>Server attribute name</b> | <b>Description</b>                                                  | <b>Value</b> |
|-----------|------------------------------|---------------------------------------------------------------------|--------------|
| 500       | SYS_SPROC_VERSION            | The version of the catalog stored procedures currently implemented. | 01.01.2822   |

Permissions                      Any user can execute sp\_server\_info.

## sp\_special\_columns

**Description** Returns the optimal set of columns that uniquely identify a row in a table or view; can also return a list of timestamp columns, whose values are automatically generated when any value in the row is updated by a transaction.

**Syntax** `sp_special_columns table_name [, table_owner] [, table_qualifier] [, col_type]`

**Parameters**

*table\_name*

is the name of the table or view. The use of wildcard characters in pattern matching is not supported.

*table\_owner*

is the name of the table or view owner. The use of wildcard characters in pattern matching is not supported. If you do not specify the table owner, sp\_special\_columns looks for a table owned by the current user and then for a table owned by the Database Owner.

*table\_qualifier*

is the name of the database. This can be either the current database or NULL.

*col\_type*

is "R" to return information about columns with values that uniquely identify any row in the table, or "V" to return information about timestamp columns, whose values are generated by Adaptive Server each time a row is inserted or updated.

**Examples**

**Example 1** Returns the optimal set of columns for systypes:

```
sp_special_columns systypes
scope  column_name  data_type  type_name  precision  length  scale
-----  -
0      name            12        varchar    30         30      NULL
```

**Example 2** Returns the optimal set from the from the authors table with values that uniquely identify any row in the table:

```
sp_special_columns @table_name=authors, @col_type=R
scope  column_name  data_type  type_name  precision  length  scale
-----  -
0      au_id          12        varchar    11         11      NULL
```

**Usage**

- The results set for sp\_special\_columns is:

---

| <b>Column</b> | <b>Datatype</b> | <b>Description</b>                                                                                                                                                                                                 |
|---------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| scope         | int             | NOT NULL. Actual scope of the row ID. Adaptive Server always returns 0.                                                                                                                                            |
| column_name   | varchar(30)     | NOT NULL. Column identifier.                                                                                                                                                                                       |
| data_type     | smallint        | The integer code for an ODBC datatype. If this datatype cannot be mapped to an ANSI/ISO type, the value is NULL. The native datatype name is returned in the type_name column. (See the ODBC datatypes Table 2-2.) |
| type_name     | varchar(13)     | The string representation of the datatype. This is the datatype name as presented by the underlying DBMS.                                                                                                          |
| precision     | int             | The number of significant digits.                                                                                                                                                                                  |
| length        | int             | The length in bytes of the datatype.                                                                                                                                                                               |
| scale         | smallint        | The number of digits to the right of the decimal point.                                                                                                                                                            |

---

Permissions                      Any user can execute sp\_special\_columns.

## sp\_sproc\_columns

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns information about a stored procedure's input and return parameters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | sp_sproc_columns <i>procedure_name</i> [, <i>procedure_owner</i> ]<br>[, <i>procedure_qualifier</i> ] [, <i>column_name</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><i>procedure_name</i><br/>is the name of the stored procedure. The use of wildcard characters in pattern matching is not supported.</p> <p><i>procedure_owner</i><br/>is the owner of the stored procedure. The use of wildcard characters in pattern matching is not supported. If no owner is specified, sp_sproc_columns returns all columns.</p> <p><i>procedure_qualifier</i><br/>is the name of the database. This can be either the current database or NULL.</p> <p><i>column_name</i><br/>is the name of the parameter about which you want information. If you do not supply a parameter name, sp_sproc_columns returns information about all input and return parameters for the stored procedure.</p> |
| Usage       | <ul style="list-style-type: none"> <li>The results set for sp_sproc_columns is:</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Column              | Datatype    | Description                                                                                                                                                                           |
|---------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| procedure_qualifier | varchar(30) | Procedure qualifier name. Can be NULL.                                                                                                                                                |
| procedure_owner     | varchar(30) | Procedure owner name. Always returns a value.                                                                                                                                         |
| procedure_name      | varchar(41) | Procedure name. Always returns a value.                                                                                                                                               |
| column_name         | varchar(30) | Column name for each column of the <i>table_name</i> returned. Always returns a value.                                                                                                |
| column_type         | smallint    |                                                                                                                                                                                       |
| data_type           | smallint    | The integer code for an ODBC datatype. If this datatype cannot be mapped to an ANSI/ISO type, the value is NULL. The native datatype name is returned in the <i>type_name</i> column. |
| type_name           | char(30)    | The string representation of the datatype. This is the datatype name as presented by the underlying DBMS.                                                                             |
| precision           | int         | The number of significant digits.                                                                                                                                                     |
| length              | int         | The length in bytes of the datatype.                                                                                                                                                  |
| scale               | smallint    | The number of digits to the right of the decimal point.                                                                                                                               |
| radix               | smallint    | The base for numeric types.                                                                                                                                                           |

| Column            | Datatype     | Description                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nullable          | smallint     | The value 1 means this datatype can be created allowing null values; 0 means it cannot.                                                                                                                                                                                                                                                                                                                     |
| remarks           | varchar(254) | The description of the procedure column. NULL.                                                                                                                                                                                                                                                                                                                                                              |
| ss_data_type      | tinyint      | An Adaptive Server datatype.                                                                                                                                                                                                                                                                                                                                                                                |
| colid             | tinyint      | The column ID from syscolumns.                                                                                                                                                                                                                                                                                                                                                                              |
| column_def        | varchar(255) | NULL.                                                                                                                                                                                                                                                                                                                                                                                                       |
| sql_data_type     | smallint     | An Adaptive Server datatype.                                                                                                                                                                                                                                                                                                                                                                                |
| sql_datetime_sub  | smallint     | NULL.                                                                                                                                                                                                                                                                                                                                                                                                       |
| char_octet_length | int          | The value of char_octet_length is the same as the value for the precision column if the datatype for char_octet_length is: <ul style="list-style-type: none"> <li>• binary</li> <li>• char</li> <li>• image</li> <li>• nchar</li> <li>• nvarchar</li> <li>• sysname</li> <li>• text</li> <li>• timestamp</li> <li>• varbinary</li> <li>• varchar</li> </ul> Otherwise, the value of char_octet_length is 0. |
| ordinal_position  | int          | The ordinal position of the parameter in the parameter list. The first parameter in the list is 1, and return values have an ordinal.                                                                                                                                                                                                                                                                       |
| is_nullable       | varchar(3)   | Describes whether the column or parameter allows NULL as a value. From syscolumns.                                                                                                                                                                                                                                                                                                                          |
| mode              | varchar(20)  | The parameter mode information stored in syscolumns that contains: <ul style="list-style-type: none"> <li>• <i>For SQL procedures</i> – in, out, or “return value”.</li> <li>• <i>For SQLJ procedures (Java)</i> – in, out, inout, or “return value”.</li> </ul>                                                                                                                                            |
|                   |              | <ul style="list-style-type: none"> <li>• sp_sproc_columns reports the type_name as float, and data_type as 6 for parameters defined as double precision. The Adaptive Server double precision datatype is a float implementation supports the range of values as specified in the ODBC specifications.</li> </ul>                                                                                           |
| Permissions       |              | Any user can execute sp_sproc_columns.                                                                                                                                                                                                                                                                                                                                                                      |

## sp\_statistics

**Description** Returns a list of indexes on a single table.

**Syntax** `sp_statistics table_name [, table_owner] [, table_qualifier] [, index_name] [, is_unique]`

**Parameters**

*table\_name*  
is the name of the table. The use of wildcard character pattern matching is not supported.

*table\_owner*  
is the owner of the table. The use of wildcard character pattern matching is not supported. If *table\_owner* is not specified, sp\_statistics looks for a table owned by the current user and then for a table owned by the Database Owner.

*table\_qualifier*  
is the name of the database. This can be either the current database or NULL.

*index\_name*  
is the index name. The use of wildcard character pattern matching is not supported.

*is\_unique*  
is Y to return only unique indexes; otherwise, is N to return both unique and nonunique indexes.

**Examples** `sp_statistics publishers`

```

table_qualifier          table_owner
table_name              non_unique
index_qualifier         index_name
type    seq_in_index  column_name                collation
cardinality pages
-----
pubs2
publishers              NULL
NULL                   NULL
          0          NULL NULL                NULL
          3          1
pubs2
publishers              0
publishers              pubind
    
```

```

1          1 pub_id          A
          3          1

```

**Usage**

- The results set for `sp_statistics` is:

| Column          | Datatype    | Description                                                                     |
|-----------------|-------------|---------------------------------------------------------------------------------|
| table_qualifier | varchar(32) | The database name. This field can be NULL.                                      |
| table_owner     | varchar(32) |                                                                                 |
| table_name      | varchar(32) | NOT NULL.                                                                       |
| non_unique      | smallint    | NOT NULL. The value 0 means unique, and 1 means not unique.                     |
| index_qualifier | varchar(32) |                                                                                 |
| index_name      | varchar(32) |                                                                                 |
| type            | smallint    | NOT NULL. The value 0 means clustered, 2 means hashed, and 3 means other.       |
| seq_in_index    | smallint    | NOT NULL.                                                                       |
| column_name     | varchar(32) | NOT NULL.                                                                       |
| collation       | char(1)     | The value A means ascending; D means descending; and NULL means not applicable. |
| cardinality     | int         | Number of rows in the table or unique values in the index.                      |
| pages           | int         | Number of pages to store the index or table.                                    |

- The indexes in the results set appear in ascending order, ordered by the non-unique, type, index\_name, and seq\_in\_index columns.
- The index type hashed accepts exact match or range searches, but searches involving pattern matching do not use the index.

**Permissions**

Any user can execute `sp_statistics`.

## sp\_stored\_procedures

**Description** Returns information about one or more stored procedures.

**Syntax** sp\_stored\_procedures [sp\_name [, sp\_owner [, sp\_qualifier]]]

**Parameters**

*sp\_name*  
is the name of the stored procedure. Use wildcard characters to request information about more than one stored procedure.

*sp\_owner*  
is the owner of the stored procedure. Use wildcard characters to request information about procedures that are owned by more than one user.

*sp\_qualifier*  
is the name of the database. This can be the current database or NULL.

**Usage**

- sp\_stored\_procedures returns information about stored procedures in the current database only.
- The results set for sp\_stored\_procedures is:

| Column              | Datatype     | Description                                                                                                      |
|---------------------|--------------|------------------------------------------------------------------------------------------------------------------|
| procedure_qualifier | varchar(30)  | The name of the database.                                                                                        |
| procedure_owner     | varchar(30)  |                                                                                                                  |
| procedure_name      | varchar(41)  | NOT NULL.                                                                                                        |
| num_input_params    | int          | NOT NULL. Always returns -1.                                                                                     |
| num_output_params   | int          | NOT NULL. The value $\geq 0$ shows the number of parameters; -1 means the number of parameters is indeterminate. |
| num_result_sets     | int          | NOT NULL. Always returns -1.                                                                                     |
| remarks             | varchar(254) | NULL.                                                                                                            |

- sp\_stored\_procedures can return the name of stored procedures for which the current user does not have execute permission. However, if the server attribute accessible\_sproc is “Y” in the results set for sp\_server\_info, only stored procedures that are executable by the current user are returned.

**Permissions** Any user can execute sp\_stored\_procedures.



## sp\_table\_privileges

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns privilege information for all columns in a table or view.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <code>sp_table_privileges table_name [, table_owner[, table_qualifier]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <p><i>table_name</i><br/>is the name of the table. The use of wildcard characters in pattern matching is not supported.</p> <p><i>table_owner</i><br/>is the name of the table owner. The use of wildcard characters in pattern matching is not supported. If you do not specify the table owner, <code>sp_table_privileges</code> looks for a table owned by the current user and then for a table owned by the Database Owner.</p> <p><i>table_qualifier</i><br/>is the name of the database. This can be either the current database or NULL.</p> |
| Usage       | <ul style="list-style-type: none"> <li>The results set for <code>sp_table_privileges</code> is:</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Column                       | Datatype                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>table_qualifier</code> | <code>varchar(32)</code> | The name of the database. This field can be NULL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <code>table_owner</code>     | <code>varchar(32)</code> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <code>table_name</code>      | <code>varchar(32)</code> | NOT NULL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <code>grantor</code>         | <code>varchar(32)</code> | NOT NULL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <code>grantee</code>         | <code>varchar(32)</code> | NOT NULL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <code>privilege</code>       | <code>varchar(32)</code> | Identifies the table privilege. May be one of the following: <ul style="list-style-type: none"> <li>SELECT – The grantee is permitted to retrieve data for one or more columns of the table.</li> <li>INSERT – The grantee is permitted to insert rows containing data.</li> <li>UPDATE – The grantee is permitted to update the data in one or more columns of the table.</li> <li>DELETE – The grantee is permitted to delete rows of data from the table.</li> <li>REFERENCE – The grantee is permitted to refer to one or more columns of the table within a constraint.</li> </ul> |
| <code>is_grantable</code>    | <code>varchar(3)</code>  | Indicates whether the grantee is permitted to grant the privilege to other users. The values are YES, NO, and NULL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|             |                                                         |
|-------------|---------------------------------------------------------|
| Permissions | Any user can execute <code>sp_table_privileges</code> . |
|-------------|---------------------------------------------------------|

## sp\_tables

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns a list of objects that can appear in a from clause.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Syntax      | sp_tables [ <i>table_name</i> ] [, <i>table_owner</i> ][, <i>table_qualifier</i> ][, <i>table_type</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Parameters  | <p><i>table_name</i><br/>is the name of the table. Use wildcard characters to request information about more than one table.</p> <p><i>table_owner</i><br/>is the table owner. Use wildcard characters to request information about more than one table.</p> <p><i>table_qualifier</i><br/>is the name of the database. Acceptable values are the name of the current database and NULL.</p> <p><i>table_type</i><br/>is a list of values, separated by commas, giving information about all tables of the table type(s) specified, including the following:</p> <pre>' 'TABLE', 'SYSTEM TABLE', 'VIEW'</pre> |

---

**Note** Enclose each table type with single quotation marks, and enclose the entire parameter with double quotation marks. Enter table types in uppercase.

---

|          |                                                    |
|----------|----------------------------------------------------|
| Examples | <pre>sp_tables @table_type = 'TABLE', 'VIEW'</pre> |
|----------|----------------------------------------------------|

This procedure returns information about all tables in the current database of the type TABLE and VIEW and excludes information about system tables.

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage | <ul style="list-style-type: none"><li>• Adaptive Server does not necessarily check the read and write permissions on <i>table_name</i>. Access to the table is not guaranteed, even if you can display information about it.</li><li>• The results set includes tables, views, and synonyms and aliases for gateways to DBMS products.</li><li>• If the server attribute <code>accessible_tables</code> is “Y” in the results set for <code>sp_server_info</code>, only tables that are accessible by the current user are returned.</li><li>• The results set for <code>sp_tables</code> is:</li></ul> |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

---

| <b>Column</b>   | <b>Datatype</b> | <b>Description</b>                                               |
|-----------------|-----------------|------------------------------------------------------------------|
| table_qualifier | varchar(30)     | The database name. This field can be NULL.                       |
| table_owner     | varchar(30)     |                                                                  |
| table_name      | varchar(30)     | NOT NULL. The table name.                                        |
| table_type      | varchar(32)     | NOT NULL. One of the following: 'TABLE', 'VIEW', 'SYSTEM TABLE'. |
| remarks         | varchar(254)    | NULL                                                             |

---

Permissions

Any user can execute sp\_tables.

Tables used

master.dbo.sysattributes, master.dbo.sysloginroles, master.dbo.sysssrvroles, sysroles



# System Extended Stored Procedures

This chapter describes the system extended stored procedures (ESPs), which are supplied by Sybase. ESPs are created by installmaster at installation. They are located in the sybsystemprocs database and owned by the System Administrator. They can be run from any database.

Topics covered are:

| Topics                           | Page |
|----------------------------------|------|
| Overview                         | 761  |
| Permissions on system ESPs       | 762  |
| DLLs associated with system ESPs | 762  |
| Using system ESPs                | 762  |

## Overview

Table 3-1 lists the system extended stored procedures discussed in this chapter.

**Table 3-1: System extended stored procedures**

| Procedure      | Description                                                                                | Platform            |
|----------------|--------------------------------------------------------------------------------------------|---------------------|
| xp_cmdshell    | Executes a native operating system command on the host system running Adaptive Server.     | All Supporting DLLs |
| xp_deletemail  | Deletes a message from the Adaptive Server message inbox.                                  | NT Only             |
| xp_enumgroups  | Displays groups for a specific Windows NT domain.                                          | NT Only             |
| xp_findnextmsg | Retrieves the message identifier of the next message in the Adaptive Server message inbox. | NT Only             |
| xp_logevent    | Provides for logging a user-defined event in the Windows NT Event Log.                     | NT Only             |
| xp_readmail    | Reads a message from the Adaptive Server message inbox.                                    | NT Only             |
| xp_sendmail    | Sends a message to the specified recipients using the MAPI interface.                      | NT Only             |
| xp_startmail   | Starts an Adaptive Server mail session.                                                    | NT Only             |
| xp_stopmail    | Stops an Adaptive Server mail session.                                                     | NT Only             |

## Permissions on system ESPs

Permissions are set in the sybssystemprocs database.

Users with the sa\_role have default execution permissions on the system ESPs. These System Administrators can grant execution permissions to other users.

## DLLs associated with system ESPs

You can get the names of the DLLs associated with the system ESPs by running sp\_helpextendedproc in the sybssystemprocs database.

## Using system ESPs

The system ESPs follow the same calling conventions as the regular system procedures. The only additional requirement for system ESPs is that the Open Server application, XP Server, must be running. Adaptive Server starts XP Server the first time an ESP is invoked. XP Server continues to run until you shut down Adaptive Server.

## xp\_cmdshell

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Executes a native operating system command on the host system running Adaptive Server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Syntax      | <code>xp_cmdshell <i>command</i>, no_output] [return_status   no_wait]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>command</i><br/>is the operating system command string; maximum length is 8192 bytes.</p> <p><code>no_output</code><br/>if specified, suppresses any output from the command.</p> <p><code>return_status</code><br/>if specified, returns the completion status of the operating system command specified in the <i>command</i> parameter. If you do not use this parameter, the returned value is either 0 for success, or 1 for failure, respectively.</p> <p><code>no_wait</code><br/>if specified, the <code>xp_cmdshell</code> operation immediately returns to the caller and the specified command executes as a background process. You see no output, and the returned result reflects only the success or failure of starting the command as a background process, not the success or failure of the process itself.</p> |
| Examples    | <p><b>Example 1</b> <i>On Windows</i> – silently copies the file named <code>log</code> on the C drive to a file named <code>log.0102</code> on the A drive:</p> <pre>xp_cmdshell 'copy C:\log A:\log.0102', no_output</pre> <p><b>Example 2</b> <i>On UNIX</i> – executes the operating system's <code>ls</code> command and returns the list directory contents as a row of data:</p> <pre>xp_cmdshell 'ls'</pre>                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Usage       | <ul style="list-style-type: none"> <li>• <code>xp_cmdshell</code> returns any output, including operating system errors, as rows of text in a single column.</li> <li>• <code>xp_cmdshell</code> is run from the current directory of the XP Server.</li> <li>• The width of the column of returned output is 80 characters. The output is not formatted.</li> <li>• <code>xp_cmdshell</code> cannot perform commands that require interaction with the user, such as “login”.</li> </ul>                                                                                                                                                                                                                                                                                                                                                |

- The user context in which an operating system command is executed via xp\_cmdshell is controlled by the value of the xp\_cmdshell context configuration parameter. If this parameter is set to 1 (the default), xp\_cmdshell restricts permission to users with System Administration privileges at the operating system level. If this parameter is set to 0, xp\_cmdshell uses the security context of the operating system account under which Adaptive Server is running. Therefore, using xp\_cmdshell with the xp\_cmdshell context configuration parameter set to 0, any user can execute operating system commands using the permissions of the account running Adaptive Server. This account may have fewer restrictions than the user's own account.
- Regardless of the value of xp\_cmdshell context, if the user who is executing xp\_cmdshell is not a System Administrator (does not have the sa\_role), a System Administrator must have granted that user explicit permission to execute xp\_cmdshell. For example, the following statement grants "joe" permission to execute xp\_cmdshell:

```
grant execute on xp_cmdshell to joe
```

To find out if xp\_cmdshell was successful in spawning an external command XP Server, enter the following, where *command* is the name of the command you ran with xp\_cmdshell:

```
exec @ret = xp_cmdshell command
```

If xp\_cmdshell was successful, exec @ret = xp\_cmdshell *command* returns a value of 0. If xp\_cmdshell failed, exec @ret = xp\_cmdshell *command* returns a value of 1.

- To find out if the command you ran using xp\_cmdshell was itself successful, enter the following, where *command* is the name of the command you ran with xp\_cmdshell:

```
exec @ret = xp_cmdshell command, return_status
```

exec @ret = xp\_cmdshell *command*, return\_status causes xp\_cmdshell to return the actual exit status code of the command. If a failure occurs and XP Server cannot run the command, xp\_cmdshell returns a value of 1. If the command runs successfully, xp\_cmdshell returns a value of 0.



If the command was successful, `exec @ret = xp_cmdshell command` returns a value of 0. If the command failed, `exec @ret = xp_cmdshell command` returns a value of 1.

---

**Note** Both `exec @ret = xp_cmdshell command` and `exec @ret = xp_cmdshell command, return_status` are backward-compatible. Old stored procedures that do not use the `return_status` parameter treat `exec @ret = xp_cmdshell command, return_status` as if it were `exec @ret = xp_cmdshell command`.

---

Also, the `no_output` parameter can still be used in combination with `return_status`, in any order.

- You must use the `cmdstr` column name when you create a proxy table with the `xp_cmdshell` remote procedure:

```
create existing table xpoutput
(
    cmdstr varchar(255) null
)
external procedure at "THIS...xp_cmdshell"

select cmdstr from xpoutput where cmdstr = "date"
```

If you do not use `cmdstr`, you see an error message.

See the section, “Remote procedures as proxy tables” in the *Component Integration Services User’s Guide* for more information about results returned from the proxy table.

#### Permissions

By default, only a System Administrator can execute `xp_cmdshell`. A System Administrator can grant execute permission to other users.

#### See also

See the *System Administration Guide* for more information about `xp_cmdshell` context.

## **xp\_deletemail**

|             |                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Deletes a message from the Adaptive Server message inbox.                                                                                                                                                                                                                                                                                             |
| Syntax      | <code>xp_deletemail [msg_id]</code>                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <i>msg_id</i><br>is the message identifier of the mail message to be deleted.                                                                                                                                                                                                                                                                                                |
| Examples    | <b>Example 1</b> Deletes from the Adaptive Server message inbox the message with the message identifier specified in the <code>cur_msg_id</code> variable:<br><pre>1&gt; declare @cur_msg_id binary(255) 2&gt; exec xp_deletemail @msg_id = @cur_msg_id</pre> <b>Example 2</b> Deletes the first message from the Adaptive Server message inbox:<br><pre>xp_deletemail</pre> |
| Usage       | <ul style="list-style-type: none"><li>• Obtain the <i>msg_id</i> using <code>xp_findnextmsg</code>.</li><li>• If the <i>msg_id</i> parameter is not used, the message to be deleted defaults to the first message in the message inbox.</li></ul>                                                                                                                            |
| Permissions | By default, only a System Administrator can execute <code>xp_deletemail</code> . A System Administrator can grant this permission to other users.                                                                                                                                                                                                                            |

## xp\_enumgroups

|             |                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Displays groups for a specified Windows NT domain.                                                                                                                                                                                                                                                    |
| Syntax      | xp_enumgroups [ <i>domain_name</i> ]                                                                                                                                                                                                                                                                                         |
| Parameters  | <i>domain_name</i><br>is the Windows NT domain for which you are listing user groups.                                                                                                                                                                                                                                        |
| Examples    | <b>Example 1</b> Lists all user groups on the Windows NT computer running XP Server:<br><pre>xp_enumgroups</pre> <b>Example 2</b> Lists all user groups in the PCS domain:<br><pre>xp_enumgroups 'PCS'</pre>                                                                                                                 |
| Usage       | <ul style="list-style-type: none"><li>• xp_enumgroups displays all local user groups if no parameter is passed.</li><li>• A <i>domain</i> is a named collection of computers that share a common user account database and security policy.</li><li>• A return status of 0 indicates success; 1 indicates failure.</li></ul> |
| Permissions | By default, only a System Administrator can execute xp_enumgroups. A System Administrator can grant this permission to other users.                                                                                                                                                                                          |

## xp\_findnextmsg

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Retrieves the next message identifier from the Adaptive Server message inbox.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>xp_findnextmsg @msg_id = @msg_id output[, type]<br/>[, unread_only = {true   false}]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Parameters  | <p><i>msg_id</i><br/>on input, specifies the message identifier that immediately precedes the one you are trying to retrieve. Places the retrieved message identifier in the <i>msg_id</i> output parameter, which must be of type binary.</p> <p><i>type</i><br/>is the input message type based on the MAPI mail definition. The only supported message type is CMC:IPM. A NULL value or no value defaults to CMC:IPM.</p> <p><i>unread_only</i><br/>if this parameter is set to true, xp_findnextmsg considers only unread messages. If this parameter is set to false, xp_findnextmsg considers all messages, both read and unread, when retrieving the next message identifier. The default is true.</p> |
| Examples    | <p><b>Example 1</b> Returns, in the <i>@out_msg_id</i> output variable, the message identifier of the next unread message after the message specified by the <i>@out_msg_id</i>:</p> <pre>xp_findnextmsg @msg_id = @out_msg_id output</pre> <p><b>Example 2</b> Returns, in the <i>@out_msg_id</i> output variable, the message identifier of the next message after the message specified by the <i>@out_msg_id</i>. The message may be read or unread:</p> <pre>xp_findnextmsg @msg_id = @out_msg_id output, NULL,<br/>@unread_only = false</pre>                                                                                                                                                           |
| Usage       | <ul style="list-style-type: none"><li>• When xp_findnextmsg can find no more messages in the inbox, it returns a status of 1.</li><li>• xp_deletemail and xp_readmail use the message identifier returned by xp_findnextmsg.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Permissions | By default, only a System Administrator can execute xp_findnextmsg. A System Administrator can grant this permission to other users.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## xp\_logevent

| Description | <b>Windows NT only</b> Provides for logging a user-defined event in the Windows NT Event Log from within Adaptive Server.                                                                                                                                                                                                                                                                                                                                                                                                           |        |       |      |     |          |                                   |          |    |        |                         |          |      |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|------|-----|----------|-----------------------------------|----------|----|--------|-------------------------|----------|------|
| Syntax      | <code>xp_logevent error_number, message[, type]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Parameters  | <p><i>error_number</i><br/>is the user-assigned error number. It must be equal to or greater than 50000.</p> <p><i>message</i><br/>is the text of the message that is displayed in the description field of the event viewer. The maximum length of the message is 255 bytes. Enclose the message in quotes.</p> <p><i>type</i><br/>describes the urgency of the event. Values are informational, warning, and error. The default is informational. Enclose the value in quotes.</p>                                                |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Examples    | <p><b>Example 1</b> An informational event, number 55555, will be logged in the Windows NT Event Log. The text of the description in the event detail window is “Email message deleted”:</p> <pre>xp_logevent 55555, 'Email message deleted.'</pre> <p><b>Example 2</b> An error event, number 66666, will be logged in the Windows NT Event Log. The text of the description in the event detail window is “DLL not found”:</p> <pre>xp_logevent 66666, 'DLL not found.', 'error'</pre>                                            |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Usage       | <ul style="list-style-type: none"> <li>The following table describes the default event details for events generated with <code>xp_logevent</code>:</li> </ul> <table border="1"> <thead> <tr> <th>Detail</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>User</td> <td>N/A</td> </tr> <tr> <td>Computer</td> <td>Name of machine running XP Server</td> </tr> <tr> <td>Event ID</td> <td>12</td> </tr> <tr> <td>Source</td> <td>Name of Adaptive Server</td> </tr> <tr> <td>Category</td> <td>User</td> </tr> </tbody> </table> | Detail | Value | User | N/A | Computer | Name of machine running XP Server | Event ID | 12 | Source | Name of Adaptive Server | Category | User |
| Detail      | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| User        | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Computer    | Name of machine running XP Server                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Event ID    | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Source      | Name of Adaptive Server                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Category    | User                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |       |      |     |          |                                   |          |    |        |                         |          |      |
| Permissions | Only a System Administrator can execute <code>xp_logevent</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |       |      |     |          |                                   |          |    |        |                         |          |      |

## xp\_readmail

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Reads a message from the Adaptive Server message inbox.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | <pre>xp_readmail [msg_id]             [, recipients output]             [, sender output]             [, date_received output]             [, subject output]             [, cc output]             [, message output]             [, attachments output]             [, suppress_attach = {true   false}]             [, peek = {true   false}]             [, unread = {true   false}]             [, msg_length output]             [, bytes_to_skip [output]]             [, type [output]]</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Parameters  | <p><i>msg_id</i><br/>specifies the message identifier of the message to be read by xp_readmail. If the <i>msg_id</i> parameter is not used, the message defaults to the first unread message in the message box, if <i>unread</i> is true, or to the first message in the message box, if <i>unread</i> is false.</p> <p><i>recipients</i><br/>is a semicolon-separated list of the recipients of the message.</p> <p><i>sender</i><br/>is the originator of the message.</p> <p><i>date_received</i><br/>is the date the message was received.</p> <p><i>subject</i><br/>is the subject header of the message.</p> <p><i>cc</i><br/>is a list of the message's copied (cc'd) recipients (separated by semicolons).</p> <p><i>message</i><br/>is the text of the message body. If the length of the message body, obtained from the <i>msg_length</i> output parameter, is greater than 255, use the <i>byte_to_skip</i> and <i>msg_length</i> parameters to read the message in 255-byte increments.</p> |

**attachments**

is a list of the temporary paths of the attachments (separated by semicolons). *attachments* is ignored if *suppress\_attach* is true.

**suppress\_attach**

if set to true, prevents the creation of temporary files for attachments. The default is true.

**peek**

if set to false, flags the message as unread after it has been read. If set to true, flags the message as an unread message, even after it has been read. The default is false.

**unread\_only**

if set to true, *xp\_readmail* considers only unread messages. If set to false, *xp\_readmail* considers all messages, whether they are flagged as read or unread. The default is true.

**msg\_length**

is the total length of the message, in bytes. Used with the *bytes\_to\_skip* parameter, allows *xp\_readmail* to read messages in 255-byte increments.

**bytes\_to\_skip**

on input, if not 0, specifies the number of bytes to skip before reading the next 255 bytes of the message into the message output parameter. On output, contains the offset in the message (the previous value of *bytes\_to\_skip* plus the *msg\_length* that is output with the call) from which to start reading the next 255-byte increment.

**type**

is the message type based on the MAPI mail definition. The only supported message type is CMC:IPM. A NULL value or no value defaults to CMC:IPM.

**Examples**

**Example 1** *xp\_readmail* reads the first unread message in the message inbox. It gets the message identifier for this message from the *@msgid* variable, where it has been stored by the *xp\_findnextmsg* ESP. *xp\_readmail* stores the sender's name in the *@originator* variable and the message body in the *@mess* variable:

```
declare @msgid binary(255)
declare @originator varchar(20)
declare @mess varchar(255)
exec xp_findnextmsg @msgid = @msgid output
exec xp_readmail @msgid = @msgid,
@sender = @originator output,
```

```
@message = @mess output
```

**Example 2** Reads the first 255 bytes of the message for which the message identifier is output by xp\_findnextmsg. If the total length of the message exceeds 255 bytes, reads the next 255 bytes and continues until there are no more bytes to read:

```
declare @msgid binary(255)
declare @mess varchar(255)
declare @msg_length char(255)
declare @len int
declare @skip int
exec xp_findnextmsg @msgid output
exec xp_readmail @msg_id = @msgid,
@message = @mess output,
@msg_length = @len output,
@bytes_to_skip = @skip output
print @mess
if (@len > 255)
begin
    while (@skip < @len)
    begin
        xp_readmail @msg_id = @msgid,
        @message = @mess output,
        @bytes_to_skip = @skip output
        print @mess
    end
end
end
```

**Usage**

- xp\_readmail reads a message from the Adaptive Server message inbox.
- To get the message identifier of the next message in the message inbox, use xp\_findnextmsg.

**Permissions**

By default, only a System Administrator can execute xp\_readmail. A System Administrator can grant this permission to other users.



## xp\_sendmail

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Sends a message to the specified recipients. The message is either text or the results of a Transact-SQL query.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Syntax      | <pre> xp_sendmail <i>recipient</i> [; <i>recipient</i>] . . .     [, <i>subject</i>]     [, <i>cc_recipient</i>] . . .     [, <i>bcc_recipient</i>] . . .     [, {<i>query</i>   <i>message</i>}]     [, <i>attachname</i>]     [, <i>attach_result</i> = {true   false}]     [, <i>echo_error</i> = {true   false}]     [, <i>include_file</i> [, <i>include_file</i>] . . .]     [, <i>no_column_header</i> = {true   false}]     [, <i>no_output</i> = {true   false}]     [, <i>width</i>]     [, <i>separator</i>]     [, <i>dbuser</i>]     [, <i>dbname</i>]     [, <i>type</i>]     [, <i>include_query</i> = {true   false}] </pre>                                                                                                                                                                                                                                                                                                         |
| Parameters  | <p><i>recipient</i><br/>is the email address of the user who will receive the message. At least one recipient is required. Separate multiple recipients with semicolons.</p> <p><i>subject</i><br/>is the optional message subject header. If not used, defaults to “Sybase SQL Server Message”.</p> <p><i>cc_recipient</i><br/>is a list of the message’s copied (cc’d) recipients (separated by semicolons).</p> <p><i>bcc_recipient</i><br/>is the list of the message’s blind- copied (bcc’d) recipients (separated by semicolons).</p> <p><i>query</i><br/>is one or more Transact-SQL statements. The results are sent to the recipients of the message. If <i>query</i> is used, <i>message</i> cannot be used.</p> <p><i>message</i><br/>is the text of the message being sent. If <i>message</i> is used, <i>query</i> cannot be used. For the complete list of options that are ignored when you use message, see the “Usage” section.</p> |

*attachname*

is the name of the file containing the results of a query, which is included as an attachment to the message, when the query parameter is used. If *attachname* is used, *attach\_result* must be set to true. If *attach\_result* is true and *attachname* is not specified, the prefix of the attached file's generated file name is "syb" followed by 5 random digits followed by the ".txt" extension, for example, *syb84840.txt*. This parameter is ignored if the *message* parameter is used.

*attach\_result*

if set to true, sends the results of a query as an attachment to the message. If set to false, sends the results directly in the message body. The default is false. This parameter is ignored if the *message* parameter is used.

*echo\_error*

if set to true, sends Adaptive Server messages, including the count of rows affected message, along with the query results. If set to false, does not send Adaptive Server messages. The default is true. This parameter is ignored if the *message* parameter is used.

*include\_file*

is a list of files to be included as attachments to the message, separated by semicolons. The files can be specified as file names, path names, or relative path names and can be either text or binary files.

*no\_column\_header*

if set to true, column headers are sent with query results. If set to false, column headers are not sent. The default is false. This parameter is ignored if the *message* parameter is used.

*no\_output*

if set to true, no output is sent to the session that sent the mail. If set to false, the session sending the mail receives output. The default is false. This parameter is ignored if the *message* parameter is used.

*width*

specifies, in characters, the width of the results sets when query results are sent in a message. *width* is the same as the */w* option in *isql*. Result rows are broken by the newline character when the specified *width* is reached. The default is 80 characters. This parameter is ignored if the *message* parameter is used.

**separator**

specifies the character to be used as a column separator when query results are sent in a message. *separator* is the same as the */s* option in *isql*. The default is the tab character. This parameter is ignored if the *message* parameter is used.

**dbuser**

specifies the database user name to be assumed for the user context for executing queries when the *query* parameter is used. The default is "guest." This parameter is ignored if the *message* parameter is used.

**dname**

specifies the database name to be assumed for the database context for executing queries when the *query* parameter is used. The default is "master." This parameter is ignored if the *message* parameter is used.

**type**

is the input message type based on the MAPI mail definition. The only supported message type is CMC:IPM. A NULL value or no value defaults to CMC:IPM.

**include\_query**

if set to true, the query or queries used in the *query* parameter are appended to the results set. If set to false, the query is not appended. The default is false. *include\_query* is ignored if the *message* parameter is used.

**Examples**

**Example 1** *xp\_sendmail* sends a text message on the backup status of an Adaptive Server to "sally" and "ramon" with a copy to the "admin" group:

```
xp_sendmail @recipient = "sally;ramon",
@subject = "Adaptive Server Backup Status",
@message = "Adaptive Server Backup for SERVER2 is
complete.",
@copy_recipient="admin"
```

**Example 2** Sends "peter" the results of a query on the *authors* table. The results are in an attachment to the message, which consists of a file named *au\_lis.res*, which is in the directory from which the server is being executed:

```
xp_sendmail "peter",
@query = "select * from authors",
@attachname = "au_list.res",
@attach_result= true
```

Usage

- The following parameters are related to the results of queries sent in a message when the query parameter is used. They are ignored if the message parameter is used instead: `attachname`, `attach_result`, `echo_error`, `no_column_header`, `no_output`, `width`, `separator`, `dbuser`, `dname`, `include_query`.

Permissions

By default, only a System Administrator can execute `xp_sendmail`. A System Administrator can grant this permission to other users.

## xp\_startmail

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Starts an Adaptive Server mail session.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <code>xp_startmail [mail_user] [, mail_password]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Parameters  | <p><i>mail_user</i><br/>is a mail profile name used by Adaptive Server to log into the Windows NT mail system. If <i>mail_user</i> is not used, <code>xp_startmail</code> uses the mail user name that was used to set up Sybmail's Adaptive Server account.</p> <p><i>mail_password</i><br/>is the mail password used by Adaptive Server to log into the Windows NT mail system. If <i>mail_password</i> is not used, <code>xp_startmail</code> uses the mail password that was used to set up Sybmail's Adaptive Server account.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Examples    | <p><b>Example 1</b> Starts an Adaptive Server mail session using the mail user name and password for Sybmail's user account:</p> <pre>xp_startmail</pre> <p><b>Example 2</b> Starts an Adaptive Server mail session with "mailuser" as the profile name and the password associated with that profile name:</p> <pre>xp_startmail "mailuser", "tre55uu"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"> <li>• <code>xp_startmail</code> does not start an Adaptive Server mail session if one is already running.</li> <li>• An Adaptive Server mail session must be started, either by an explicit call to <code>xp_startmail</code> or by configuring Adaptive Server to start an Adaptive Server mail session automatically at start-up, before any Sybmail-related system ESPs or the <code>sp_processmail</code> stored procedure can be executed. See start mail session in the <i>System Administration Guide</i> for information about initiating an Adaptive Server mail session automatically at start-up.</li> <li>• When the Windows NT automail session is not on, you must use the <i>mail_user</i> and <i>mail_password</i> parameters with <code>xp_startmail</code>.</li> <li>• To see the default <i>mail_user</i> value from the <i>fullname</i> field for the "sybmail" user account, use the <code>sp_displaylogin</code> system procedure as follows:</li> </ul> <pre>sp_displaylogin sybmail</pre> |
| Permissions | By default, only a System Administrator can execute <code>xp_startmail</code> . A System Administrator can grant this permission to other users.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## **xp\_stopmail**

|             |                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Windows NT only</b> Stops an Adaptive Server mail session.                                                                                                                                                        |
| Syntax      | xp_stopmail                                                                                                                                                                                                          |
| Parameters  | None                                                                                                                                                                                                                 |
| Examples    | Stops an Adaptive Server mail session:<br><pre>xp_stopmail</pre>                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"><li>• Sybmail-related system ESPs and the sp_processmail stored procedure cannot be executed after an Adaptive Server mail session has been terminated with xp_stopmail.</li></ul> |
| Permissions | By default, only a System Administrator can execute xp_stopmail. A System Administrator can grant this permission to other users.                                                                                    |

This chapter describes the dbcc stored procedures.

Topics covered are:

| Topics                              | Page |
|-------------------------------------|------|
| Overview                            | 779  |
| Specifying the object name and date | 780  |

## Overview

These procedures access the tables only in the dbccdb database or in the alternate database, dbccalt. See the *System Administration Guide* for details on setting up dbccdb or dbccalt. See Chapter 2, “dbccdb Tables” in *Reference Manual: Tables* for information on the tables used in these databases.

Table 4-1 lists the dbcc stored procedures described in this chapter. For details on the dbcc system procedure sp\_plan\_dbccdb, see sp\_plan\_dbccdb. See the *System Administration Guide* for more information on this system procedure and the dbcc stored procedures.

**Table 4-1: dbcc stored procedures**

| Procedure name             | Description                                                                                                                         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| sp_dbcc_alterws            | Changes the size of the specified workspace to a specified value, and initializes the workspace.                                    |
| sp_dbcc_configreport       | Generates a report that describes the configuration information used by the dbcc checkstorage operation for the specified database. |
| sp_dbcc_createws           | Creates a workspace of the specified type and size on the specified segment and database.                                           |
| sp_dbcc_deletedb           | Deletes from dbccdb all the information related to the specified target database.                                                   |
| sp_dbcc_deletehistory      | Deletes the results of dbcc checkstorage operations performed on the target database before the specified date and time.            |
| sp_dbcc_differentialreport | Generates a report that highlights the changes in I/O statistics and faults that took place between two dbcc operations             |

| <b>Procedure name</b>    | <b>Description</b>                                                                                                                                                                                     |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sp_dbcc_evaluatedb       | Recomputes configuration information for the target database and compares it to the current configuration information.                                                                                 |
| sp_dbcc_exclusions       | Allows the user to create and manage persistent exclusion lists for use by checkverify and sp_dbcc_faultreport.                                                                                        |
| sp_dbcc_faultreport      | Generates a report covering fault statistics for the dbcc checkstorage operations performed for the specified object in the target database on the specified date, listed in order by table and index. |
| sp_dbcc_fullreport       | Runs sp_dbcc_summaryreport, sp_dbcc_configreport, sp_dbcc_statisticsreport, and sp_dbcc_faultreport.                                                                                                   |
| sp_dbcc_help_fault       | Provides a description of the specified fault type and the recommended fix.                                                                                                                            |
| sp_dbcc_patch_finishtime | Facilitates reporting on aborted checkverify and checkstorage operations.                                                                                                                              |
| sp_dbcc_recommendations  | Prints recommendations for a database based on a checkstorage run and groups the recommendations by table and index.                                                                                   |
| sp_dbcc_runcheck         | Runs dbcc checkstorage on the specified database, then runs sp_dbcc_summaryreport or a report you specify.                                                                                             |
| sp_dbcc_statisticsreport | Generates an allocation statistics report on the specified object in the target database.                                                                                                              |
| sp_dbcc_summaryreport    | Generates a summary report on the specified database.                                                                                                                                                  |
| sp_dbcc_updateconfig     | Updates the dbcc_config table in dbccdb with the configuration information of the target database.                                                                                                     |

## Specifying the object name and date

Several dbcc stored procedures use parameters for the object name and date. This section provides important information on specifying the object name and date.

### Specifying the object name

The object name specifies only the name of the table or index for which to generate a report. When you specify an object name, you must also specify a database name (*dbname*). You cannot specify an owner for the object. If the specified object name is not unique in the target database, the system procedure generates a report on all objects with the specified name.



## Specifying the date

Use the following syntax to specify the date and time (optional):

`mm/dd/yy[:hh:mm:ss]`

A 24-hour clock is assumed.

When you specify the date, the system procedures interpret it as follows:

- If both the date and the time are specified, the dbcc operation that completed at the specified date and time is selected for the report.
- If the specified date is the current date, and no time is specified, the time is automatically set to the current time. The dbcc operation that completed within the previous 24 hours with a finish time closest to the current time is selected for the report.
- If the specified date is not the current date, and no time is specified, the time is automatically set to “23:59:59”. The dbcc checkstorage operation that completed with a finish date and time closest to the specified date and system-supplied time is selected for the report.

For example, suppose the most recent dbcc checkstorage operation completed on March 4, 1997 at 10:20:45.

If you specify the date as “03/04/97”, the system procedure interprets the date as 03/04/97:23:59:59. This date and time are compared to the actual finish date and time of 03/04/97:10:20:45.

If you specify the date as “03/04/97:10:00:00”, the operation that completes at 10:20:45 is not selected for the report because only the operations that complete on or before the specified time meet the criteria.

If you specify the date as “03/06/97”, no report is generated because the most recent operation completed more than 24 hours earlier.

## sp\_dbcc\_alterws

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Changes the size of the specified workspace to a specified value, and initializes the workspace.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Syntax      | sp_dbcc_alterws <i>dbname</i> , <i>wsname</i> , " <i>wssize</i> [K M]"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Parameters  | <p><i>dbname</i><br/>is the name of the database in which the workspace resides. Specify either dbccdb and dbccalt.</p> <p><i>wsname</i><br/>specifies the name of the workspace to alter.</p> <p><i>wssize</i><br/>is the new size of the workspace, specified by K (kilobytes) or M (megabytes). If you do not specify K or M, <i>wssize</i> specifies the number of pages. Page size is platform-dependent. The minimum size for a workspace is 24 pages.</p>                                                                                                                                                 |
| Examples    | <p>Changes the size of the scan_ws_000001 workspace on dbccdb to 30MB:</p> <pre>sp_dbcc_alterws dbccdb, scan_ws_000001, "30M"</pre> <p>Workspace scan_ws_000001 has been altered successfully to size 30MB</p>                                                                                                                                                                                                                                                                                                                                                                                                   |
| Usage       | <ul style="list-style-type: none"><li>• sp_dbcc_alterws changes the size of the specified workspace to the specified value and initializes the workspace.</li><li>• To achieve maximum performance, make sure you have configured a buffer pool of at least 16K before you alter a workspace.</li><li>• Use sp_plan_dbccdb to determine size estimates before altering the workspace.</li><li>• The workspace must exist before it can be altered. For information on creating workspaces, see sp_dbcc_createws.</li><li>• To delete a workspace, in dbccdb issue:<pre>drop table workspace_name</pre></li></ul> |
| Permissions | Only a System Administrator or the Database Owner can run sp_dbcc_alterws.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| See also    | See the <i>System Administration Guide</i> for more information on the scan and text workspaces, and the dbccalt database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|             | <b>Commands</b> dbcc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|             | <b>dbcc stored procedures</b> sp_dbcc_createws, sp_dbcc_evaluatedb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|             | <b>System procedures</b> sp_plan_dbccdb, sp_helpdb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## sp\_dbcc\_configreport

**Description** Generates a report that describes the configuration information used by the dbcc checkstorage operation for the specified database.

**Syntax** sp\_dbcc\_configreport [*dbname*]

**Parameters** *dbname*  
specifies the name of the database. If *dbname* is not specified, the report contains information on all databases in dbccdb..dbcc\_operation\_log.

**Examples** Generates a report on the configuration information related to dbcc for the sybssystemprocs database. The “Value” column lists the object name, where applicable, and the size:

```
sp_dbcc_configreport
```

```
Reporting configuration information of database sybssystemprocs.
```

| Parameter Name            | Value                       | Size   |
|---------------------------|-----------------------------|--------|
| database name             | sybssystemprocs             | 51200K |
| dbcc named cache          | default data cache          | 1024K  |
| text workspace            | textws_001 (id = 544004969) | 128K   |
| scan workspace            | scanws_001 (id = 512004855) | 1024K  |
| max worker processes      | 1                           |        |
| operation sequence number | 2                           |        |

**Usage**

- sp\_dbcc\_configreport generates a report that describes the configuration information used by dbcc operations for the specified database. This information is stored in the dbcc\_config table.
- To evaluate the most current configuration parameters, run sp\_dbcc\_updateconfig before running sp\_dbcc\_configreport.
- To change the configuration values for a workspace, use sp\_dbcc\_alterws.

**Permissions** Any valid user for the database name specified can run sp\_dbcc\_configreport.  
database name specified.

**See also** **Commands** dbcc

**dbcc stored procedures** sp\_dbcc\_alterws, sp\_dbcc\_fullreport, sp\_dbcc\_statisticsreport, sp\_dbcc\_summaryreport, sp\_dbcc\_updateconfig

## sp\_dbcc\_createws

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Creates a workspace of the specified type and size on the specified segment and database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Syntax      | sp_dbcc_createws <i>dbname</i> , <i>segname</i> , [ <i>wsname</i> ], <i>wstype</i> , "wssize[K M]"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>dbname</i><br/>is the name of the database in which the workspace is to be created. Values are dbccdb and dbccalt.</p> <p><i>segname</i><br/>is the name of the segment for the workspace.</p> <p><i>wsname</i><br/>is the name of the workspace. If the value is null, sp_dbcc_createws generates the name scan_wsnnnnnn for the scan workspace and text_wsnnnnnn for the text workspace, where <i>nnnnnn</i> is a unique 6-digit number.</p> <p><i>wstype</i><br/>specifies the type of workspace to be create. Values are scan and text.</p> <p><i>wssize</i><br/>is the workspace size, specified with K (kilobytes) or M (megabytes). If you do not specify K or M, <i>wssize</i> specifies the number of pages. The minimum size for a workspace is 24 pages.</p> |
| Examples    | <p><b>Example 1</b> Creates a 10MB scan workspace named scan_wspubs2 on the scanseg segment in dbccdb:</p> <pre>sp_dbcc_createws dbccdb, scanseg, scan_wspubs2, scan, "10M"</pre> <p><b>Example 2</b> Creates a 14MB scan workspace named text_ws000001 on the textseg segment in dbccdb:</p> <pre>sp_dbcc_createws dbccdb, textseg, text, "14M"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"><li>• sp_dbcc_createws creates a workspace with the specified name and size and initializes it.</li><li>• Before you create a workspace, create the segment with sp_addsegment.</li><li>• Before you create a workspace, make sure you have configured a buffer pool of at least 16K, to achieve maximum performance.</li><li>• When you create a workspace, make sure to add a 5% overhead on the space needed on the device because of large page allocation scheme used when creating the workspace.</li><li>• Use sp_plan_dbccdb to determine size estimates.</li></ul>                                                                                                                                                                 |

- After creating a workspace, run `sp_dbcc_updateconfig` to record the new configuration information in `dbcc_config`.
- Each workspace must have a unique name.
- To delete a workspace, in `dbccdb` issue:

```
drop table workspace_name
```

**Permissions**

Only a System Administrator or the Database Owner can run `sp_dbcc_createws`.

**See also**

See the *System Administration Guide* for more information on the scan and text workspaces, and the `dbccalt` database.

**Commands** dbcc

**dbcc stored procedures** sp\_dbcc\_alterws, sp\_dbcc\_evaluatedb

**System procedures** sp\_addsegment, sp\_plan\_dbccdb, sp\_helpsegment

## sp\_dbcc\_deletedb

**Description** Deletes from dbccdb all the information related to the specified target database.

**Syntax** sp\_dbcc\_deletedb [*dbname* | *dbid*]

**Parameters** *dbname*  
specifies the name of the target database for which you want the configuration information deleted. If you do not specify a value for *dbname*, Adaptive Server deletes data from all databases in dbccdb..dbcc\_config. If the target database is dbccdb, and dbccalt exists, Adaptive Server deletes the data from dbccalt.

*dbid*  
specifies the database ID number of the target database for which you want the configuration information deleted.

**Examples** Deletes all information for the database named engdb from dbccdb:

```
sp_dbcc_deletedb "engdb"
```

```
All information for database engdb has been deleted from dbccdb.
```

**Usage**

- sp\_dbcc\_deletedb deletes from dbccdb all the information related to the specified target database, including configuration information and the results of previous dbcc checkstorage operations.
- If the deleted database is dbccdb, and the dbccalt database exists, sp\_dbcc\_deletedb deletes the configuration information and results of dbccdb from dbccalt.
- To remove the results of dbcc checkstorage operations created before a specific date, use sp\_dbcc\_deletehistory.
- Using the *dbid* option is the only way to delete the contents of the dbccdb database for a database that has already been dropped.

**Permissions** Only a System Administrator or the Database Owner can run sp\_dbcc\_deletedb.

**See also** See the *System Administration Guide* for information about the dbccalt database.

**Commands** dbcc

**dbcc stored procedures** sp\_dbcc\_deletehistory, sp\_dbcc\_evaluatedb

**System procedures** sp\_plan\_dbccdb

## sp\_dbcc\_deletehistory

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Deletes the results of dbcc checkstorage operations performed on the target database before the specified date and time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|             | <hr/> <p><b>Note</b> <code>sp_dbcc_deletehistory</code> does not free any space associated with the deleted historical data, as workspaces are pre-allocated and of a fixed size.</p> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Syntax      | <code>sp_dbcc_deletehistory [cutoffdate [, dbname   dbid]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <p><i>cutoffdate</i><br/>deletes all entries made on or before this date. This parameter is of type <code>datetime</code>. If a date is not specified, only the results of the last operation are retained. For more information, see “Specifying the date” on page 781.</p> <p><i>dbname</i><br/>specifies the name of the database for which the data must be deleted. If not specified, <code>sp_dbcc_deletehistory</code> deletes the history information for all databases in <code>dbccdb..dbcc_config</code>.</p> <p><i>dbid</i><br/>specifies the database ID number of the target database for which you want the history information deleted.</p>                                                                                                                                                                                                                                                                                                                                                                                |
| Examples    | Deletes results of all operations performed on the database <code>pubs2</code> on or before March 4, 1997:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|             | <pre>sp_dbcc_deletehistory "03/04/1997", "pubs2"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"> <li>• <code>sp_dbcc_deletehistory</code> deletes the results of dbcc checkstorage operations performed on the target database before the specified date and time.</li> <li>• If the target database is <code>dbccdb</code>, and the <code>dbccalt</code> database exists, <code>sp_dbcc_deletehistory</code> deletes historical data for <code>dbccdb</code> from <code>dbccalt</code>.</li> <li>• The value specified for <i>cutoffdate</i> is compared to the finish time of each dbcc operation.</li> <li>• Use the <i>dbid</i> option to delete the historical data of the <code>dbccdb</code> database for a database that has already been dropped.</li> <li>• Using the <i>dbid</i> option is the only way to delete the historical data of the <code>dbccdb</code> database for a database that has already been dropped.</li> <li>• To see the dates when dbcc checkstorage was run so that you can choose the value for <i>cutoffdate</i>, run <code>sp_dbcc_summaryreport</code>.</li> </ul> |

Permissions

- Only a System Administrator or the Database Owner can run `sp_dbcc_deletehistory` on a specific database.
- Only a System Administrator can run `sp_dbcc_deletehistory` without specifying a database name.

See also

See the *System Administration Guide* for information on the `dbccalt` database.

**Commands** `dbcc`

**dbcc stored procedures** `sp_dbcc_deletedb`, `sp_dbcc_evaluatedb`

**System procedures** `sp_plan_dbccdb`



## sp\_dbcc\_differentialreport

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Generates a report that highlights the changes in I/O statistics and faults that took place between two dbcc operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | <code>sp_dbcc_differentialreport [dbname [, objectname]],<br/>[db_op] [, "date1" [, "date2"]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters  | <p><i>dbname</i><br/>specifies the name of the database. If you do not specify a <i>dbname</i>, the report contains information on all databases in dbccdb..dbcc_operation_log.</p> <p><i>objectname</i><br/>specifies the name of the table or index for which you want the report generated. If <i>object_name</i> is not specified, statistics on all objects in the target database are reported.</p> <p><i>db_op</i><br/>specifies the source of the data to be used for the report. The only value is checkstorage. The report is generated on the data specified by <i>db_op</i> on <i>date1</i> and <i>date2</i> for the specified object in the target database. If dates are not specified, the last two operations of the type <i>db_op</i> are compared.</p> <p><i>date1</i><br/>specifies the first date of a dbcc checkstorage operation to be compared.</p> <p><i>date2</i><br/>specifies the last date of a dbcc checkstorage operation to be compared.</p> |
| Examples    | <p>Generates a report that shows the changes in I/O statistics and faults that occurred in the sysprocedures table between May 1, 1997 and May 4, 1997:</p> <pre>sp_dbcc_differentialreport master, sysprocedures,<br/>checkstorage, "05/01/97", "05/04/97"</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Usage       | <ul style="list-style-type: none"> <li>• sp_dbcc_differentialreport generates a report that highlights the changes in I/O statistics and faults that occurred between two dbcc operations. It compares counter values reported from two instances of dbcc checkstorage. Only the values that have been changed are reported.</li> <li>• If only one date is specified, the results of the dbcc checkstorage operation selected by the specified date are compared to the results of the dbcc checkstorage operation immediately preceding the selected operation.</li> <li>• If no dates are specified, the results of last two dbcc checkstorage operations are compared.</li> <li>• If sp_dbcc_differentialreport returns a number for <i>object_name</i>, it means the object was dropped after the dbcc checkstorage operation completed.</li> </ul>                                                                                                                    |

- If no changes occurred between the specified operations, `sp_dbcc_differentialreport` does not generate a report.

Permissions

Any valid user for the database name specified can run `sp_dbcc_differentialreport`.

See also

**Commands** `dbcc`

**dbcc stored procedures** `sp_dbcc_fullreport`, `sp_dbcc_statisticsreport`, `sp_dbcc_summaryreport`, `sp_dbcc_updateconfig`

## sp\_dbcc\_evaluatedb

**Description**                   Recomputes configuration information for the target database and compares it to the current configuration information.

**Syntax**                        sp\_dbcc\_evaluatedb [*dbname*]

**Parameters**                 *dbname*  
                                   specifies the name of the target database. If you do not specify *dbname*, sp\_dbcc\_evaluatedb compares all databases listed in the dbcc\_config table.

**Examples**                   Recomputes configuration information for the current database, sybsystemprocs, and suggests new values for some parameters:

```
1> sp_dbcc_evaluatedb
2> go
```

Recommended values for workspace size, cache size and process count are:

```
Database name : one_G

                current          suggested
scan workspace size :           750M           16M
text workspace size :              2K           48K
cache size       :           10240K           1280K
process count    :                3             2
compression mem size:           2048K           12M
```

```
Each of the reported quantities is reported in a scaled unit according to
G if size > 10G
M if 10M < size <=10 G
K otherwise
```

- Usage**
- When there is an archive database with a compressed data or log device, the output includes a line with the recommendation of the compression memory size.
  - sp\_dbcc\_evaluatedb recomputes configuration information for the target database and compares the data to the current configuration information. It uses counter values recorded for the target database in the dbcc\_counters table.
  - The cache size is the size of the 16K buffer pool in the cache. For a 2K buffer pool, the minimum size of this cache must be the recommended value, plus 512.
  - When the size and data distribution pattern of the target database changes, run sp\_dbcc\_evaluatedb to optimize the configuration information.

- To gather configuration information for the target database the first time, use `sp_plan_dbccdb`.
- To make sure you are evaluating the most current configuration parameters, run `sp_dbcc_updateconfig` before running `sp_dbcc_evaluatedb`.

Permissions

- Only System Administrator or the Database Owner can run `sp_dbcc_evaluatedb`.
- Only a System Administrator can run `sp_dbcc_evaluatedb` without specifying a database name.

See also

**Commands** `dbcc`

**dbcc stored procedures** `sp_dbcc_updateconfig`

**System procedures** `sp_plan_dbccdb`

## sp\_dbcc\_exclusions

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Allows the user to create and manage persistent exclusion lists for use by <code>checkverify</code> and <code>sp_dbcc_faultreport</code> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax      | <code>sp_dbcc_exclusions dbname, op, type, exclusion_list</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>dbname</i><br/>is the name of the database for which the exclusions apply, or null if it applies to all databases.</p> <p><i>op</i><br/>is the operation you want to perform. Valid values are:</p> <ul style="list-style-type: none"> <li>• <code>add</code> – registers new exclusions (duplicates are ignored).</li> <li>• <code>drop</code> – drops the specified exclusions if they were previously registered</li> <li>• <code>listall</code> – lists the recorded exclusions for all databases.</li> </ul> <p><i>type</i><br/>is the type of item to be excluded. Accepted values are <code>faults</code>, <code>tables</code>, <code>combo</code>, or null (when <i>op</i> is either null or <code>listall</code>). Type, <code>varchar</code>.</p> <p><i>exclusion_list</i><br/>is a comma-separated list of faults, tables, table and fault entries, or nulls. Type, <code>varchar</code>.</p>                                                                                              |
| Examples    | <p><b>Example 1</b> Excludes the tables <code>syslogs</code> and <code>syscomments</code> from <code>sp_dbcc_faultreport</code> processing on all databases:</p> <pre>sp_dbcc_exclusions null, 'add', 'tables', 'syslogs, syscomments'</pre> <p><b>Example 2</b> Excludes fault type 100036 from processing of the database <code>my_db</code>:</p> <pre>sp_dbcc_exclusions my_db, 'add', 'faults', '100036'</pre> <p><b>Example 3</b> Adds the following to the exclusion list corresponding to <code>my_db</code>: fault type 100002 pertaining to table <code>mytable</code> and fault type 100035 pertaining to <code>syslogs</code>:</p> <pre>sp_dbcc_exclusions my_db, 'add', 'combo', 'mytable:100002, syslogs:100035'</pre> <p><b>Example 4</b> Removes fault type 100036 from the exclusion list corresponding to <code>my_db</code>:</p> <pre>sp_dbcc_exclusions my_db, 'drop', 'faults', '100036'</pre> <p><b>Example 5</b> Displays the exclusion list corresponding to <code>my_db</code>:</p> |

```
sp_dbcc_exclusions my_db
```

**Example 6** Displays the recorded exclusions for all databases:

```
sp_dbcc_exclusions null, 'listall'
```

Usage

- *dbname* must be null when *listall* is specified. If *op* is null, `sp_dbcc_exclusions` lists the recorded exclusions for the specified database.
- Only a System Administrator or the Database Owner can run `sp_dbcc_exclusions` with a *dbname* parameter that is not null.
- If the *dbname* and *op* parameters are null, the user must either be a System Administrator or own at least one of the databases for which exclusions have been recorded.
- If the *dbname* parameter is null and the *op* parameter is *listall*, the user must either be a System Administrator or own at least one of the databases for which exclusions have been recorded. If the user is not a System Administrator, only the recorded exclusions for databases owned by the user will be reported.

Permissions

Only a System Administrator can run `sp_dbcc_exclusions` without restriction.



*display\_recommendations*

enables reporting the recommendations generated by `sp_dbcc_recommendations`, and the parameters `exclusion_mode`, `exclusion_faults`, `exclusion_tables`, `display_recommendations`, and `exclusion_combo` refer to exclusion support and are optional.

*exclusion\_mode*

is a varchar and is on by default. To disable this, you must provide an “ignore” each time the `sp_dbcc_faultreport` is run. Use either of the following:

- ignore – ignores the persistent exclusion list and uses the temporary exclusion list, if one is provided (type, varchar).
- extend – applies the temporary exclusion list as well as the persistent exclusion list (type, varchar).

*exclusion\_faults*

is a comma-separated list of fault types to be excluded from reporting (type, varchar).

*exclusion\_tables*

is a comma-separated list of tables to be excluded from reporting (type is varchar).

*exclusion\_combo*

is a comma-separated list of fault/table combinations to be excluded from reporting (type is varchar).

*opid*

enables fault reporting for a specific—instead of latest—operation ID for a specific date. No operation ID is specified by default.

*fault\_type\_in*

enables fault reporting for a specific fault type. The default is NULL.

Examples

**Example 1** Generates a short report of the faults found in tables in the `sybssystemprocs` database. The report includes the table name, the index number in which the fault occurred, the type code of the fault, a brief description of the fault, and the page number on which the fault occurred:

```
sp_dbcc_faultreport "short"
```

```
Database Name : sybssystemprocs
```

| Table Name    | Index | Type Code | Description        | Page Number |
|---------------|-------|-----------|--------------------|-------------|
| sysprocedures | 0     | 100031    | page not allocated | 5702        |
| sysprocedures | 1     | 100031    | page not allocated | 14151       |



|         |   |                           |       |
|---------|---|---------------------------|-------|
| syslogs | 0 | 100022 chain start error  | 24315 |
| syslogs | 0 | 100031 page not allocated | 24315 |

**Example 2** Generates a long report of the faults found in tables in the `sysystemprocs` database. This example shows the first part of the output of a long report. The complete report repeats the information for each object in the **target database** in which `dbcc checkstorage` found a fault. The data following the long string of numbers shown under the "page header" field ("Header for 14151, next 14216, previous 14150 ...") describes the components of the "page header" string:

```
sp_dbcc_faultreport "long"
```

```
Generating 'Fault Report' for object sysprocedures in database
sysystemprocs.
```

```
Type Code: 100031; Soft fault, possibly spurious
```

```
Page reached by the chain is not allocated.
```

```
page id: 14151
```

```
page header:
```

```
0x00003747000037880000374600000005000648B803EF0001000103FE0080000F
```

```
Header for 14151, next 14216, previous 14150, id = 5:1
```

```
time stamp = 0x0001000648B8, next row = 1007, level = 0
```

```
free offset = 1022, minlen = 15, status = 128(0x0080)
```

```
.
.
.
```

**Example 3** Generates a short report of faults from all tables on all databases, for an operation finished at a date and time found as an End Time, from the output of `sp_dbcc_summaryreport`. It is important that you use accurate end times in the *date* parameter; for instance, if you enter:

```
7/25/2000 9:58
```

instead of

```
7/25/2000 9:58:0:190
```

the report generates faults only up to 9:58, not after it. You could use 9:59 if you do not want to enter the exact time the operation ends:

```
sp_dbcc_faultreport "short", NULL, NULL,
"07/25/00 9:59"
```

In this case, the report generates faults up to 9:59.

**Example 4** Generates a short form report only for hard faults reported by the latest checkstorage run for a database called `mydb`:

```
sp_dbcc_faultreport short, mydb, @hard_only = 1
```

**Example 5** Adds recommended fixes to the fault report of database my\_db:

```
sp_dbcc_faultreport @dbname = my_db,  
@display_recommendations = 1
```

**Example 6** Generates a fault report that does not contain fix recommendations:

```
sp_dbcc_faultreport @dbname = my_db
```

**Example 7** Runs sp\_dbcc\_faultreport on database my\_db with the persistent exclusion list disabled:

```
sp_dbcc_faultreport @dbname = 'my_db', @exclusion_mode = 'ignore'
```

**Example 8** Runs sp\_dbcc\_faultreport on database my\_db with the persistent exclusion list enabled and extended to exclude from processing fault type 100036:

```
sp_dbcc_faultreport @dbname = 'my_db', @exclusion_mode = 'extend',  
@exclusion_faults = '100036'
```

**Example 9** Runs sp\_dbcc\_faultreport on database my\_db with the persistent exclusion list enabled and extended to exclude from processing and the table tab:

```
sp_dbcc_faultreport @dbname = 'my_db', @exclusion_mode = 'extend',  
@exclusion_tables = 'tab'
```

**Example 10** Runs sp\_dbcc\_faultreport on database my\_db with the persistent exclusion list disabled and an enabled temporary exclusion list that excludes from processing the table tab and fault type 100036:

```
sp_dbcc_faultreport @dbname = 'my_db', @exclusion_mode = 'ignore',  
@exclusion_faults = '100036', @exclusion_tables = 'tab'
```

**Example 11** Runs sp\_dbcc\_faultreport on database my\_db with the persistent exclusion list disabled and an enabled temporary exclusion list that excludes from processing fault type '100002' pertaining to the table mytable and fault type 100035 pertaining to the table tab:

```
sp_dbcc_faultreport @dbname = 'my_db', @exclusion_mode = 'ignore',  
@exclusion_combo = 'mytable:100002, tab:100035'
```

**Example 12** Generates a long form report for the 100029 faults reported by the latest checkstorage run for the mydb database (100029 is the fault type for page header errors):

```
sp_dbcc_faultreport long, mydb, @fault_type_in = 100029
```

**Example 13** Generates a short form report for faults reported by the checkstorage run with operation ID 5 for the mydb database:

```
sp_dbcc_faultreport short, mydb, @opid = 5
```

Usage

- `sp_dbcc_faultreport` generates a report that shows all faults for the specified object in the target database.
- `sp_dbcc_faultreport` issues numerous error message number 10028 if you use:
  - `sp_placeobject` to make an object that has existing allocations put new allocations on a new segment.
  - `sp_dropsegment` to remove a segment from a fragment that contains allocations of an object assigned to that segment.

Error message number 10028 is an informational message rather than an indication of a serious error. If you prefer not to receive such messages, you can create your own reporting procedure that does not report this (or any other) error. One way to do this is to add the following to the very beginning of the standard `sp_dbcc_faultreport` stored procedure in the *installdbccdb* script:

```
print "removing 10028 errors from dbcc_faults table"
delete dbcc_faults where type_code = 10028
```

- If `sp_dbcc_faultreport` returns a number for *object\_name*, it means the object was dropped after the `dbcc checkstorage` operation completed.

Permissions

Any valid user for the database name specified can run `sp_dbcc_faultreport`.

See also

See the `type_code` column described in the *System Administration Guide* for information on the fault ID and on the fault status.

**Commands** `dbcc`

**dbcc stored procedures** `sp_dbcc_fullreport`, `sp_dbcc_statisticsreport`, `sp_dbcc_summaryreport`, `sp_dbcc_updateconfig`

## sp\_dbcc\_fullreport

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Runs sp_dbcc_summaryreport, sp_dbcc_configreport, sp_dbcc_statisticsreport, and sp_dbcc_faultreport short for <i>database..object_name</i> on or before the specified <i>date</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Syntax      | sp_dbcc_fullreport [ <i>dbname</i> [, <i>objectname</i> [, <i>date</i> ]]]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <p><i>dbname</i></p> <p>specifies the name of the database. For example, master..sysdatabases. If you do not specify <i>dbname</i>, the report contains information on all databases in dbccdb..dbcc_operation_log.</p> <p><i>object_name</i></p> <p>specifies the name of the table or index for which you want the report generated. If you do not specify <i>object_name</i>, statistics on all objects in the target database are reported.</p> <p><i>date</i></p> <p>specifies the date on which the dbcc checkstorage operation was performed. If you do not specify a <i>date</i>, the date of the last operation is used.</p> |
| Examples    | Runs sp_dbcc_summaryreport, sp_dbcc_configreport, sp_dbcc_statisticsreport, and sp_dbcc_faultreport short for the most recent dbcc checkstorage operation run on the sysprocedures table in the master database:                                                                                                                                                                                                                                                                                                                                                                                                                      |
|             | <pre>sp_dbcc_fullreport master, sysprocedures</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Usage       | <ul style="list-style-type: none"><li>• sp_dbcc_fullreport runs sp_dbcc_summaryreport, sp_dbcc_configreport, sp_dbcc_statisticsreport, and sp_dbcc_faultreport short for <i>database..object_name</i> on or before the specified date</li></ul>                                                                                                                                                                                                                                                                                                                                                                                       |
| Permissions | Any valid user for the database name specified can run sp_dbcc_fullreport.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| See also    | <p><b>Commands</b> dbcc</p> <p><b>dbcc stored procedures</b> sp_dbcc_statisticsreport, sp_dbcc_summaryreport, sp_dbcc_updateconfig</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## sp\_dbcc\_help\_fault

|             |                                                                                                                                                                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Provides a description of the specified fault type and the recommended fix.                                                                                                                                                                                         |
| Syntax      | <code>sp_dbcc_help_fault [fault_type]</code>                                                                                                                                                                                                                        |
| Parameters  | <i>fault_type</i><br>is the fault type for which a description and recommended fix should be reported. This parameter is type int. If <i>fault_type</i> is not provided, <code>sp_dbcc_help_fault</code> reports on all fault types.                                |
| Examples    | <b>Example 1</b> To view a description of fault type 100038, and its recommended fix, enter:<br><pre>sp_dbcc_help_fault 100038</pre> <b>Example 2</b> To view a description of all fault types and their recommended fixes, enter:<br><pre>sp_dbcc_help_fault</pre> |
| Usage       | <code>sp_dbcc_help_fault</code> provides a description of the specified fault type and the recommended fix.                                                                                                                                                         |
| Permissions | Any user can run <code>sp_dbcc_help_fault</code> .                                                                                                                                                                                                                  |

## sp\_dbcc\_patch\_finishtime

Description Facilitates reporting on aborted checkverify and checkstorage operations.

Syntax `sp_dbcc_patch_finishtime dbname, opid [,optype [,seq [,finishtime]]]`

Parameters

*dbname*

is the name of the database checkstorage or checkverify was operating on when it aborted. This parameter's type is varchar.

*opid*

is the operation ID corresponding to the aborted operation. This parameter's type is smallint.

*optype*

is the type of operation you are investigating. Accepted values are either 'checkstorage' or 'checkverify'. This parameter's type is varchar.

*seq*

is the checkverify sequence number (not used for checkstorage but required for checkverify). This parameter's type is smallint.

*finishtime*

A datetime value representing the time the checkstorage or checkverify operation aborted. The default value is the current time.

Examples

**Example 1** Enables reporting on checkstorage and checkverify for database my\_db when the following errors occur:

```
dbcc checkstorage (my_db)
```

```
Checking my_db: Logical pagesize is 2048 bytes
00:00000:00014:2003/01/20 11:50:05.01 server Error: 9960, Severity: 20,
State: 1
```

```
A non-recoverable error has occurred in the CHECKSTORAGE operation. The
operation has been aborted.
```

```
Msg 9970, Level 20, State 1:
```

```
Line 2:
```

```
DBCC cannot update the finish time in dbcc_operation_log table for this
operation(opid = '1') of database 'my_db'. This can be patched by executing
sp_dbcc_patch_finishtime.
```

**Example 2** Enables reporting on checkstorage and checkverify for database my\_db when the following errors occur:

```
dbcc checkstorage (my_db)
```

```
Checking my_db: Logical pagesize is 2048 bytes
```

```
00:00000:00014:2003/01/20 11:50:05.01 server Error: 9960, Severity: 20,  
State: 1
```

```
A non-recoverable error has occurred in the CHECKSTORAGE operation. The  
operation has been aborted.
```

```
Msg 9970, Level 20, State 1:
```

```
Line 2:
```

```
DBCC cannot update the finish time in dbcc_operation_log table for this  
operation(opid = '1') of database 'my_db'. This can be patched by executing  
sp_dbcc_patch_finishtime.
```

Execute `sp_dbcc_patch_finishtime` with the information included in the error message:

```
sp_dbcc_patch_finishtime my_db, 1
```

**Usage**

When a checkstorage or checkverify operation aborts, it prints a message that contains the operation's ID and the name of the database that was being examined when the operation aborted. An aborted checkverify operation also provides a sequence number in the message. The message instructs the user to run `sp_dbcc_patch_finishtime`, and provides the *dbname*, *opid*, and if it was a checkverify operation, the sequence number, *seq*. After executing `sp_dbcc_patch_finishtime`, you can create fault reports on the aborted operation.

**Permissions**

Only a System Administrator or the Database Owner can run `sp_dbcc_patch_finishtime`.

## sp\_dbcc\_recommendations

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Analyzes faults reported by the checkstorage operation corresponding to the specified operation ID, or date, and generates a list of recommended corrective actions for the specified object in the target database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax      | <code>sp_dbcc_recommendations dbname [,"date"[, <i>opid</i> [, "<i>objectname</i>"]]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Parameters  | <p><i>dbname</i></p> <p>is the name of the database for which recommendations are generated. Type is varchar, and this parameter is required.</p> <p><i>date</i></p> <p>is a datetime value representing the date and time the dbcc checkstorage operation (for which the reported faults will be analyzed) finished. If you do not specify <i>date</i> or <i>opid</i>, Adaptive Server uses the date of the most recent operation. If you specify both <i>date</i> and <i>opid</i>, Adaptive Server ignores the date. <i>date</i> is optional.</p> <p><i>opid</i></p> <p>is the operation ID of the checkstorage operation, for which the reported faults will be analyzed. If an <i>opid</i> or <i>date</i> is not specified, Adaptive Server uses the date of the most recent operation. If both <i>date</i> and <i>opid</i> are specified, Adaptive Server ignores the <i>date</i>. The type for this parameter is int.</p> <p><i>objectname</i></p> <p>is the name of the object for which sp_dbcc_recommendations generates the recommendations. If an <i>objectname</i> is not specified, recommendations for all objects in the database are generated. The type for this parameter is varchar.</p> |
| Examples    | <p><b>Example 1</b> Generates a list of recommended fixes for the object t1, in database my_db, based on the faults reported by the checkstorage operation corresponding to operation id 2:</p> <pre>sp_dbcc_recommendations my_db, null, 2, 't1'</pre> <p><b>Example 2</b> Generates a list of recommended fixes for all objects in database my_db, based on the faults reported by the checkstorage operation that finished on Sep 15 2002 at 7:10:18:463PM:</p> <pre>sp_dbcc_recommendations my_db, 'Sep 15 2002 7:10:18:463PM'</pre> <p><b>Example 3</b> Generates a list of recommended fixes for all objects in database my_db, based on the most recent checkstorage operation:</p> <pre>sp_dbcc_recommendations my_db</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



|             |                                                                                                                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage       | <code>sp_dbcc_recomendations</code> analyzes faults reported by the checkstorage operation corresponding to the specified operation ID, or date, and generates a list of recommended corrective actions for the specified object in the target database |
| Permissions | Any valid user of the target database can run <code>sp_dbcc_recomendations</code> .                                                                                                                                                                     |

## sp\_dbcc\_runcheck

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Runs dbcc checkstorage on the specified database, then runs sp_dbcc_summaryreport or a report you specify.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Syntax      | sp_dbcc_runcheck <i>dbname</i> [, <i>user_proc</i> ]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters  | <i>dbname</i><br>specifies the name of the database on which the check is to be performed.<br><i>user_proc</i><br>specifies the name of the dbcc stored procedure or a user-created stored procedure that is to be run instead of sp_dbcc_summaryreport.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Examples    | <b>Example 1</b> Checks the database engdb and generates a summary report on the information found:<br><pre>sp_dbcc_runcheck "engdb"</pre> <b>Example 2</b> Checks the database pubs2 and generates a full report:<br><pre>sp_dbcc_runcheck "pubs2", sp_dbcc_fullreport</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Usage       | <ul style="list-style-type: none"><li>• sp_dbcc_runcheck runs dbcc checkstorage on the specified database.</li><li>• After the dbcc checkstorage operation is complete, sp_dbcc_runcheck runs sp_dbcc_summaryreport to generate a summary report. If you specify one of the other report-generating dbcc stored procedures for <i>dbcc_report</i>, sp_dbcc_runcheck runs that procedure instead of sp_dbcc_summaryreport. See the <i>System Administration Guide</i> for a brief description and examples of all the report-generating stored procedures provided with dbccdb.</li><li>• You can write your own report-generating stored procedure and specify its name for user_proc. The stored procedure must be self-contained. sp_dbcc_runcheck cannot pass any parameters to Adaptive Server.</li></ul> |
| Permissions | Only a System Administrator or the Database Owner can run sp_dbcc_runcheck.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| See also    | <b>Commands</b> dbcc<br><b>dbcc stored procedures</b> sp_dbcc_summaryreport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## sp\_dbcc\_statisticsreport

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Generates an allocation statistics report on the specified object in the target database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Syntax      | <code>sp_dbcc_statisticsreport [dbname [, objectname [, date]]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Parameters  | <p><i>dbname</i><br/>specifies the <b>target database</b>. If <i>dbname</i> is not specified, the report contains information on all databases in dbccdb..dbcc_operation_log.</p> <p><i>objectname</i><br/>specifies the name of the table or index for which you want the report generated. If you do not specify <i>objectname</i>, Adaptive Server reports statistics on all objects in the target database.</p> <p><i>date</i><br/>specifies the date on which the dbcc checkstorage operation was performed. If you do not specify <i>date</i>, Adaptive Server uses the date of the most recent operation.</p> |
| Examples    | <p>Generates a statistics report on the sysobjects table in the sybsystemprocs database:</p> <pre>sp_dbcc_statisticsreport 'sybsystemprocs',     'sysobjects'</pre> <p>Statistics Report on object sysobjects in database sybsystemprocs</p>                                                                                                                                                                                                                                                                                                                                                                         |

| Parameter Name | Index Id | Value   |
|----------------|----------|---------|
| count          | 0        | 241.0   |
| max size       | 0        | 99.0    |
| max count      | 0        | 22.0    |
| bytes data     | 0        | 19180.0 |
| bytes used     | 0        | 22113.0 |
| count          | 1        | 14.0    |
| max size       | 1        | 9.0     |
| max level      | 1        | 0.0     |
| max count      | 1        | 14.0    |
| bytes data     | 1        | 56.0    |
| bytes used     | 1        | 158.0   |
| count          | 2        | 245.0   |
| max level      | 2        | 1.0     |
| max size       | 2        | 39.0    |
| max count      | 2        | 71.0    |
| bytes data     | 2        | 4377.0  |

| bytes used          | 2        | 6995.0    |       |          |
|---------------------|----------|-----------|-------|----------|
| Parameter Name      | Index Id | Partition | Value | Dev_name |
| -----               |          |           |       |          |
| page gaps           | 0        | 1         | 13.0  | master   |
| pages used          | 0        | 1         | 15.0  | master   |
| extents used        | 0        | 1         | 3.0   | master   |
| overflow pages      | 0        | 1         | 0.0   | master   |
| pages overhead      | 0        | 1         | 1.0   | master   |
| pages reserved      | 0        | 1         | 7.0   | master   |
| page extent gaps    | 0        | 1         | 11.0  | master   |
| ws buffer crosses   | 0        | 1         | 2.0   | master   |
| page extent crosses | 0        | 1         | 11.0  | master   |
| pages used          | 1        | 1         | 2.0   | master   |
| extents used        | 1        | 1         | 1.0   | master   |
| overflow pages      | 1        | 1         | 0.0   | master   |
| pages overhead      | 1        | 1         | 1.0   | master   |
| pages reserved      | 1        | 1         | 6.0   | master   |
| page extent gaps    | 1        | 1         | 0.0   | master   |
| ws buffer crosses   | 1        | 1         | 0.0   | master   |
| page extent crosses | 1        | 1         | 0.0   | master   |
| page gaps           | 2        | 1         | 4.0   | master   |
| pages used          | 2        | 1         | 6.0   | master   |
| extents used        | 2        | 1         | 1.0   | master   |
| overflow pages      | 2        | 1         | 0.0   | master   |
| pages overhead      | 2        | 1         | 1.0   | master   |
| pages reserved      | 2        | 1         | 2.0   | master   |
| page extent gaps    | 2        | 1         | 0.0   | master   |
| ws buffer crosses   | 2        | 1         | 0.0   | master   |
| page extent crosses | 2        | 1         | 0.0   | master   |

Usage

- sp\_dbcc\_statisticsreport generates an allocation statistics report on the specified object in the target database. It uses data from the dbcc\_counters table, which stores information about page utilization and error statistics for every object in the target database.
- If sp\_dbcc\_statisticsreport returns a number for *object\_name*, it means the object was dropped after the dbcc checkstorage operation completed.
- sp\_dbcc\_statisticsreport reports values recorded in the dbcc\_counters table for the datatypes 5000–5024. See dbcc\_counters in *Reference Manual: Tables* for more information.

For bytes data, bytes used, and overflow pages, `sp_dbcc_statisticsreport` reports the sum of the values reported for all partitions and devices.

For count, max count, max size and max level, `sp_dbcc_statisticsreport` reports the largest of the values reported for all partitions and devices.

`sp_dbcc_statisticsreport` reports information for each device and partition used by objects in the target database for the following rows:

- extents used
- io errors
- page gaps
- page extent crosses
- page extent gaps
- page format errors
- pages reserved
- pages overhead
- pages misallocated
- pages not allocated
- pages not referenced
- pages used

The page gaps, page extent crosses, and page extent gaps indicate how the data pages for the objects are distributed on the database devices. Large values indicate less effectiveness in using larger buffer sizes and in data prefetch.

- If multiple `dbcc checkstorage` operations were run on a target database on the same day, `sp_dbcc_statisticsreport` generates a report based on the results of the last `dbcc checkstorage` operation that finished before the specified time.

Permissions

Any valid user for the database name specified can run `sp_dbcc_statisticsreport`.

See also

**Commands** `dbcc`

**dbcc stored procedures** `sp_dbcc_fullreport`, `sp_dbcc_summaryreport`, `sp_dbcc_updateconfig`

## sp\_dbcc\_summaryreport

- Description** Generates a summary report on the specified database.
- Syntax** sp\_dbcc\_summaryreport [dbname [, date [, op\_name [, display\_recommendations]]]]
- Parameters**
- dbname*  
specifies the name of the database for which you want the report generated. If you do not specify *dbname*, sp\_dbcc\_summaryreport generates reports on all databases in dbccdb..dbcc\_operation\_log for which the date is on or before the date and time specified by the *date* option.
  - date*  
specifies the date on which dbcc checkstorage was performed. If you do not specify a date, sp\_dbcc\_summaryreport uses the date of last dbcc checkstorage operation performed on the **target database**. This parameter is of the datatype datetime. If both the date and the time are specified for *date*, summary results of all the operations performed on or before the specified time are reported. If no date is specified, all operations are reported.
  - opname*  
specifies the operation. *opname* may be either checkstorage, which is the default, or checkverify, or both. If *opname* is not specified, reports are generated for all operations.
  - display\_recommendations*  
enables reporting the recommendations generated by sp\_dbcc\_recommendations

**Examples** **Example 1** Generates a summary report on the sybssystemprocs database, providing information on all dbcc checkstorage and dbcc checkverify operations performed:

```
sp_dbcc_summaryreport
DBCC Operation : checkstorage

Database Name      Start time          End Time           Operation ID
  Hard Faults Soft Faults Text Columns Abort Count
  User Name
-----
-----
-----
sybssystemprocs    05/11/1999 14:53:11  14:53:32:163      1
                0              0              0              0
                sa
```

```

sybssystemprocs      05/11/1999 14:55:06 14:55:29:200      2
                    0          0          0          0
                    sa
sybssystemprocs      05/11/1999 14:56:10 14:56:27:750      3
                    0          0          0          0
                    sa

```

DBCC Operation : checkverify

| Database Name   | Start time          | End Time     | Operation ID |
|-----------------|---------------------|--------------|--------------|
| Hard Faults     | Soft Faults         | User Name    |              |
| -----           | -----               | -----        | -----        |
| -----           | -----               | -----        | -----        |
| sybssystemprocs | 05/11/1999 14:55:29 | 14:55:29:310 | 2            |
| 0               | 0                   | sa           |              |

**Example 2** Generates a summary report on the user database testdb, providing information on all dbcc checkstorage operations performed. dbcc checkstorage was the only operation run on this database, so no dbcc checkverify information appears on the report:

```
sp_dbcc_summaryreport "testdb"
```

DBCC Operation : checkstorage

| Database Name | Start time          | End Time     | Operation ID |
|---------------|---------------------|--------------|--------------|
| Hard Faults   | Soft Faults         | Text Columns | Abort Count  |
| -----         | -----               | -----        | -----        |
| -----         | -----               | -----        | -----        |
| testdb        | 05/11/1999 14:55:29 | 14:55:49:903 | 1            |
| 0             | 0                   | 0            | sa           |
| testdb        | 05/11/1999 14:55:50 | 14:56:9:546  | 2            |
| 0             | 0                   | 0            | sa           |
| testdb        | 05/11/1999 14:56:28 | 14:56:40:666 | 3            |
| 0             | 0                   | 0            | sa           |

**Example 3** Generates a summary report on the sybssystemprocs database, providing information on all dbcc checkverify operations performed. Because dbcc checkverify was the specified operation, no dbcc checkstorage information appears on the report:

```
1> sp_dbcc_summaryreport null, null, "checkverify"
```

```
2> go
```

DBCC Operation : checkverify

| Database Name | Start time          | End Time    | Operation ID | Run Srl   |
|---------------|---------------------|-------------|--------------|-----------|
| Table Name    | Table Id            | Hard Faults | Soft Faults  | User Name |
| testdb        | 08/31/2004 11:06:11 | 11:6:11:370 | 3            | 1         |
| NULL          | NULL                | 0           | 0            | sa        |

(1 row affected)

**Example 4** Generates a summary report on the sybssystemprocs database, providing information on all dbcc checkstorage operations performed. Because dbcc checkstorage was the specified operation, no dbcc checkverify information appears on the report:

```
sp_dbcc_summaryreport sybssystemprocs, null, "checkstorage"
```

DBCC Operation : checkstorage

| Database Name   | Start time          | End Time     | Operation ID |
|-----------------|---------------------|--------------|--------------|
| Hard Faults     | Soft Faults         | Text Columns | Abort Count  |
| User Name       |                     |              |              |
| sybssystemprocs | 05/11/1999 14:53:11 | 14:53:32:163 | 1            |
| 0               | 0                   | 0            | 0            |
| sa              |                     |              |              |
| sybssystemprocs | 05/11/1999 14:55:06 | 14:55:29:200 | 2            |
| 0               | 0                   | 0            | 0            |
| sa              |                     |              |              |
| sybssystemprocs | 05/11/1999 14:56:10 | 14:56:27:750 | 3            |
| 0               | 0                   | 0            | 0            |
| sa              |                     |              |              |

**Example 5** Adds recommended fixes to the summary report of database my\_db:

```
sp_dbcc_summaryreport @dbname = my_db,
@display_recommendations = 1
```

**Usage**

- sp\_dbcc\_summaryreport generates a summary report of checkstorage or checkverify operations, or both, on the specified database.
- The report indicates the name of the database that was checked, the start and end time of the dbcc checkstorage run and the number of soft and hard faults found.
- The “Operation ID” column contains a number that identifies the results of each dbcc checkstorage operation on a given database at a specific time. The number provided in the report comes from the opid column of the dbcc\_operation\_log table. See the *System Administration Guide* for more information.



- The “Text Columns” column shows the number of non-null text columns found by dbcc checkstorage during the run.
- The “Abort Count” column shows the number of tables that contained errors, which caused dbcc checkstorage to abort the check on the table. For details on the errors, run sp\_dbcc\_faultreport.

**Permissions**

Any valid user for the database name specified can run sp\_dbcc\_summaryreport.

**See also**

**Commands** dbcc

**dbcc stored procedures** sp\_dbcc\_fullreport, sp\_dbcc\_statisticsreport, sp\_dbcc\_updateconfig

## sp\_dbcc\_updateconfig

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Updates the dbcc_config table in dbccdb with the configuration information of the target database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Syntax      | sp_dbcc_updateconfig <i>dbname</i> , <i>type</i> , " <i>str1</i> " [, " <i>str2</i> "]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><i>dbname</i></p> <p>is the name of the target database for which configuration information is being updated. To configure the default values, enter a null <i>dbname</i> parameter.</p> <p><i>type</i></p> <p>specifies the type name from the dbcc_types table. Table 4-2 on page 815 shows the valid values for <i>type</i>.</p> <p><i>str1</i></p> <p>specifies the first configuration value for the specified <i>type</i> to be updated in the dbcc_config table. Table 4-2 on page 815 describes the expected value of <i>str1</i> for the specified <i>type</i>.</p> <p><i>str2</i></p> <p>specifies the second configuration value for the specified <i>type</i> that you want to update in the dbcc_config table. Table 4-2 on page 815 describes the expected value of <i>str2</i> for the specified <i>type</i>.</p>                                                                                                                                                                                                                                                                                                                       |
| Examples    | <p><b>Example 1</b> Updates dbcc_config with the maximum number of worker processes for dbcc checkstorage to use when checking the pubs2 database. The new maximum number of worker processes is 4:</p> <pre>sp_dbcc_updateconfig pubs2, "max worker processes", "4"</pre> <p><b>Example 2</b> This sets the max worker processes to 2:</p> <pre>sp_dbcc_updateconfig null, 'max worker processes', '2'</pre> <p><b>Example 3</b> Updates dbcc_config with the size of the dbcc named cache "pubs2_cache". The new size is 10K:</p> <pre>sp_dbcc_updateconfig pubs2, "dbcc named cache", pubs2_cache, "10K"</pre> <p><b>Example 4</b> Updates dbcc_config with the new name of the scan workspace for the pubs2 database. The new name is scan_pubs2. This update is made after using sp_dbcc_alterws to change the name of the scan workspace:</p> <pre>sp_dbcc_updateconfig pubs2, "scan workspace", scan_pubs2</pre> <p><b>Example 5</b> Updates dbcc_config with the new name of the text workspace for the pubs2 database. The new name is text_pubs2. This update is made after using sp_dbcc_alterws to change the name of the text workspace:</p> |

```
sp_dbcc_updateconfig pubs2, "text workspace", text_pubs2
```

**Example 6** Updates `dbcc_config` with the OAM count threshold value for the `pubs2` database. The new value is 5:

```
sp_dbcc_updateconfig pubs2, "OAM count threshold", "5"
```

**Example 7** Updates `dbcc_config` with the I/O error abort value for the `pubs2` database. The new value is 3:

```
sp_dbcc_updateconfig pubs2, "IO error abort", "3"
```

**Example 8** Updates `dbcc_config` with the linkage error abort value for the `pubs2` database. The new value is 8:

```
sp_dbcc_updateconfig pubs2, "linkage error abort", "8"
```

**Example 9** Enables automatic workspace expansion for the database `my_db`:

```
sp_dbcc_updateconfig my_db, "enable automatic workspace expansion", "1"
```

#### Usage

- `sp_dbcc_updateconfig` updates the `dbcc_config` table for the target database.
- If the name of the target database is `dbccdb`, and the database `dbccalt` exists, `sp_dbcc_updateconfig` updates the `dbcc_config` table in `dbccalt`.
- If the target database name is not found in `dbcc_config`, `sp_dbcc_updateconfig` adds it and sets the operation sequence number to 0 before updating other configuration information.
- If the expected value for the specified *type* is a number, `sp_dbcc_updateconfig` converts the values you provide for *str1* and *str2* to numbers.
- Table 4-2 shows the valid type names to use for *type* and the expected value for *str1* or *str2*.

**Table 4-2: Type names and expected values**

| <b>type name</b>     | <b>Value expected for <i>str1</i> or <i>str2</i></b>                                                                                                 |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| dbcc named cache     | The name of the cache, specified by <i>str1</i> , and the new size (in kilobytes or megabytes) or the number of 2K pages, specified by <i>str2</i> . |
| IO error abort       | The new error count, specified by <i>str1</i> . The value must be a number greater than 0. <i>str2</i> is not used with this type.                   |
| linkage error abort  | The new linkage error count value specified in <i>str1</i> . The value must be a number greater than 0. <i>str2</i> is not used with this type.      |
| max worker processes | The new number of worker processes, specified by <i>str1</i> . The value must be a number greater than 0. <i>str2</i> is not used with this type.    |
| OAM count threshold  | The new threshold count, specified by <i>str1</i> . The value must be a number greater than 0. <i>str2</i> is not used with this type.               |

| <b>type name</b>              | <b>Value expected for <i>str1</i> or <i>str2</i></b>                                                                                                                                                                |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| scan workspace                | The new name for the scan workspace, specified by <i>str1</i> . <i>str2</i> is not used with this type.                                                                                                             |
| text workspace                | The new name of the text workspace, specified by <i>str1</i> . <i>str2</i> is not used with this type.                                                                                                              |
| automatic workspace expansion | Allows checkstorage to automatically expands the workspace if adequate space is available on the respective segments. The default value of 1 enables automatic workspace expansion, and the value of 0 disables it. |

- Se the *System Administration Guide* for more information on the *type* names and values.

Permissions Only a System Administrator or the Database Owner can run sp\_dbcc\_updateconfig.

See also

**Commands** dbcc

**dbcc stored procedures** sp\_dbcc\_alterws, sp\_dbcc\_evaluatedb

**System procedures** sp\_plan\_dbccdb

# Index

## Symbols

@ (at sign) and procedure parameters and procedure parameters 4

::= (BNF notation)  
in SQL statements xviii

, (comma)  
in SQL statements xviii  
in user-defined datatypes 73

{ } (curly braces)  
in SQL statements xviii

.. (dots) in database object names 56

() (parentheses)  
in SQL statements xviii  
in user-defined datatypes 73

“ ” (quotation marks)  
enclosing parameter values 4, 734  
enclosing reserved words 136  
single, and **quoted\_identifier** 142

[ ] (square brackets)  
in SQL statements xviii

<ix\_commands>p\_cleanpwdchecks stored procedure 152

## Numerics

0 return status 1, 734

7-bit ASCII characters, checking with **sp\_checknames** 128

7-bit terminal, **sp\_helpsort** output 431

8-bit terminal, **sp\_helpsort** output 431

## A

**abort tran on log full** database option 222

abstract plan groups  
adding 19  
dropping 267

exporting 329

importing 444

renaming 607

abstract plans  
information about 372  
viewing with **sp\_help\_qplan** 372

accounting, chargeback  
**sp\_clearstats** 155

accounts. *See* logins.

actions  
modifying for resource limits 503  
resource limit information on 368  
specifying for resource limits 21

adding  
abstract plan groups 19  
aliases 28–29  
date strings 44–46  
dump devices 77–78  
engine groups 34  
engines to a group 34  
execution classes 36  
foreign keys 350–351  
group to a database 43  
limits 20  
logins to Server 47–52  
messages to *sysusermessages* 53–55  
named time ranges 25  
remote logins 59–61  
resource limits 20  
segments 62–63  
servers 64–67  
thresholds 68–72  
time ranges 25  
user-defined datatypes 73–76  
users to a database 79–80  
users to a group 79–80, 126–127

**ad hoc** auditing option 83

aliases, language  
assigning 626  
defining 44

## Index

- aliases, server 65
  - aliases, user
    - See also* logins; users
    - assigning 28–29
    - assigning different names compared to 79
    - database ownership transfer and 124
    - dropping 264–265, 301
    - help on 440
    - sysalternates* table 28, 264
  - all** auditing option 83
  - allow nulls by default** database option 222
  - ALS (Asynchronous Log Service) 391
    - output in **sp\_helpdb** 393
  - alter** auditing option 83
  - alter database** command
    - sp\_dbremap** and 232
  - alternate identity. *See* aliases, user
  - alternate languages. *See* languages, alternate
  - ANYENGINE* engine group 34
  - applications
    - applying resource limits to 20
    - dropping resource limits from 269
    - modifying resource limits for 502
    - resource limit information on 367
  - ASCII characters
    - checking for with **sp\_checknames** 128
  - Asynchronous Log Service (ALS) 391
    - output in **sp\_helpdb** 393
  - asynchronous prefetch
    - configuring limits 580
  - @@connections** global variable and **sp\_monitor** 528
  - @@cpu\_busy** global variable and **sp\_monitor** 528
  - @@packet\_errors** global variable and **sp\_monitor** 528
  - @@thresh\_hysteresis** global variable
    - threshold placement and 69
  - attributes
    - execution classes 36
    - server (**sp\_server\_info**) 747
    - sp\_addobjectdef** and 58
  - audit trail, adding comments 30
  - auditing
    - adding an audit table 32
    - options, displaying 248
  - auditing options
    - adhoc** 83
    - all** 83
    - alter** 83
    - bcp** 83
    - bind** 83
    - cmdtext** 83
    - create** 83
    - dbaccess** 83
    - dbcc** 83
    - delete** 83
    - disk** 83
    - drop** 83
    - dump** 83
    - errors** 83
    - exec\_procedure** 83
    - exec\_trigger** 84
    - func\_dbaccess** 84
    - func\_obj\_access** 84
    - grant** 84
    - insert** 84
    - load** 84
    - login** 84
    - login\_locked** 84
    - logout** 84
    - reference** 84
    - revoke** 84
    - rpc** 84
    - security** 84
    - select** 84
    - setting** 83
    - setuser** 84
    - table\_access** 85
    - truncate** 85
    - unbind** 85
    - update** 85
    - view\_access** 85
  - authentication options 50, 512
  - authority. *See* permissions.
  - authorizations. *See* permissions.
  - auto identity** database option 223
- ## B
- Backup Server
    - See also* *Utility Guide*
    - amount dumped, specifying 303
    - information about 430

- multiple 66
- volume handling messages 715–718
- Backus Naur Form (BNF) notation xvii, xviii
- basic display level for configuration parameters 252
- bcp**
  - auditing option using **sp\_audit** 83
- bcp** (bulk copy utility)
  - fast version 225
  - select into/bulkcopy/pilsort** and 225
- binary sort order of character sets 432
- bind** auditing option 83
- binding
  - data caches 97–100
  - defaults 101–103
  - objects to data caches 97–100
  - rules 109–110
  - unbinding and 700–702, 704
  - user messages to constraints 107–108
- blanks
  - catalog stored procedure parameter values 734
  - in system procedure parameter values 4
- blocking process
  - sp\_lock** report on 335, 481
  - sp\_who** report on 731
- BNF notation in SQL statements xvii, xviii
- brackets. *See* square brackets [ ]
- bulk copying. *See* **bcp** (bulk copy utility)

## C

- caches, data
  - binding objects to 97
  - configuring 111–120
  - dropping 119
  - information about 115, 379
  - logonly** type 119
  - memory pools 575–580
  - overhead 118, 379
  - recovery and 115
  - status 117
  - unbinding all objects from 703
  - unbinding objects from 700
- case sensitivity
  - in SQL xix
- catalog stored procedures 733–758

- list of 734
- return status 734
- sp\_columns** 739–741
- sp\_databases** 742
- sp\_datatype\_info** 743
- sp\_fkeys** 744–745
- sp\_pkeys** 746
- sp\_server\_info** 747–749
- sp\_special\_columns** 750
- sp\_sproc\_columns** 752
- sp\_statistics** 754
- sp\_stored\_procedures** 756
- sp\_tables** 758
- syntax 734–735
- chained transaction mode and **sp\_procxmode** 589
- changing
  - database options 219–228
  - database owners 124–125
  - dbccdb* workspace size 782
  - language alias 626
  - memory pools within data caches 575
  - names of abstract plan groups 607
  - object names 604–606
  - passwords for login accounts 553–555
  - resource limits 502
  - thresholds 518–521
  - time ranges 505
  - user's group 126–127
- character sets
  - changing names of 139, 141
  - checking with **sp\_checknames** 128
  - checking with **sp\_checkreswords** 135
  - multibyte 432
  - sp\_helpsort** display of 431
- chargeback accounting
  - sp\_clearstats** procedure 155–156
  - sp\_reportstats** procedure 611–612
- check constraints
  - binding user messages to 107
  - displaying source text of 433
  - renaming 604–606
- checking passwords. *See* passwords; **sp\_remotoption** system procedure.
- checkpoint** command
  - setting database options and 222
- checkpoint process

## Index

- trunc log on chkpt** database option 226
- clearing accounting statistics 155–156
- clustered indexes, *indid* not equal to one 406
- cmd* returned by **sp\_who** 731
- cmdtext** auditing option 83
- codes
  - datatype 743
  - ODBC datatype 736
- collating sequence. *See* sort order
- collisions, hash key 371
- column data. *See* datatypes
- column name
  - changing 138, 604–606
  - checking with **sp\_checknames** 129
- column pairs. *See* joins; keys
- columns
  - common key 188–189
  - datatypes 739
  - defaults for 101–103
  - dependencies, finding 138
  - foreign keys 350–351, 744
  - joins and 410
  - permissions on 737
  - primary key 583
  - returned by **sp\_who** 730
  - rules 109–110
  - unbinding defaults from 704–705
  - unbinding rules with **sp\_unbindrule** 709–711
- comma (,)
  - in SQL statements xviii
  - in user-defined datatypes 73
- comments
  - adding to audit trail 30
- common keys
  - See also* foreign keys; joins; primary keys
  - defining 188–189
  - dropping 283
  - join candidates and 410
  - reporting 412–413
- companion servers
  - configuring 190–192
- comparing plan groups 183
- comparing plans 183, 186
- compiled objects
  - checking for source text of 144
  - displaying source text of 433
  - hiding source text of 442
- compiling and **sp\_recompile** 593
- comprehensive display level for configuration parameters 252
- concurrency optimization 147
- concurrency\_opt\_threshold** option, **sp\_chgattribute** 147
- configuration parameters
  - changing 195–202
  - display levels 252
  - help information on 382
- constraints
  - binding user messages to 107
  - displaying source text of 433
  - information about 375, 387
  - renaming 604–606
  - unbinding messages with **sp\_unbindmsg** 708
- contention, lock
  - monitoring with **sp\_object\_stats** 538–540
- controller, device
  - sp\_helpdevice** and number 396
- conventions
  - See also* syntax
  - Transact-SQL syntax xvii
  - used in the Reference Manual xvii
- copying
  - plan groups 203
  - plans 203, 205
- corrupt databases
  - listing 471
  - recovery fault isolation mode 635
- corrupt pages
  - bringing online 348–349
  - isolating on recovery 638–639
  - listing 474
- CPU usage, monitoring 528
- create** auditing option 83
- create database** command
  - log on** option compared to **sp\_logdevice** 487
- create index** command and **sp\_extendsegment** 331
- create table** command and **sp\_extendsegment** 331
- creating
  - abstract plan groups 19
  - datatypes 73–76
  - dbcdb* workspaces 784
  - execution classes 36



- extended stored procedures 38–39
- limits 20
- named time ranges 25
- resource limits 20
- thresholds 68–72
- time ranges 25
- user aliases 28–29
- user groups 43
- user-defined audit records 83
- cross-platform dump and load, handling suspect partitions 581
- curly braces ({} ) in SQL statements xviii
- current database
  - information from **sp\_helpdb** 394
  - space used by 663–665
- current locks, **sp\_lock** system procedure 479
- current usage statistics 611–612
- cursors 208
- custom audit records 83
- custom datatypes. *See* user-defined datatypes

## D

- data caches
  - binding objects to 97
  - configuring 111–120
  - dropping 119
  - information about 115, 379
  - logonly** type 119
  - memory pools 575–580
  - overhead 118, 379
  - recovery and 115
  - status 117
  - unbinding all objects from 703
  - unbinding objects from 700
- data dependency. *See* dependencies, database object
- database design
  - dropping keys 283
  - logical relationships in 188, 350
- database devices
  - defaulton** or **defaultoff** status 246–247
  - dropping 274
  - dropping segments from 295–296
  - dsynch setting of 244
  - listing of 395
- sp\_helpdevice** system procedure 395
- status 246
- database files. *See* files.
- database object owners and **sp\_depends** system procedure 238
- database objects
  - binding defaults to 101–103
  - binding rules to 109
  - binding to caches 97
  - dependencies of 238–243
  - finding 242, 364
  - listings of 359
  - permissions on 420
  - renaming 604–606
  - sp\_tables** list of 758
  - space used by 663–665
- database options 222–228
  - See also individual option names*
  - listing 219–228
  - showing settings 222, 391
- database owners
  - See also* database object owners; permissions
  - adding users 79
  - changing 124
  - dbo use only** database option 223
  - information about 440–441
  - transferring ownership 124
- database recovery order
  - sp\_dbrecovery\_order** system procedure 229–230
  - system databases and 230
- databases
  - See also* database objects
  - adding groups 43
  - adding users 79
  - binding to data caches 97, 98
  - changing user's default 507
  - checking with **sp\_checknames** 129
  - dropping row lock promotion thresholds for 293
  - dropping segments from 295–296
  - dropping users from 301
  - help on 391
  - information on storage space used 394, 663
  - listing suspect 471
  - listing suspect pages in 474
  - listing with **sp\_databases** 742
  - listing with **sp\_helpdb** 391

## Index

- lock promotion thresholds for 628
- ownership 124
- renaming 608–610
- running out of space in 691
- setting row lock promotion thresholds for 632
- storage information 663
- thresholds 691
- unbinding from data caches 700
- datatype precedence. *See* precedence
- datatypes
  - codes 736, 743
  - defaults and 101–103
  - dropping user-defined 300
  - hierarchy 75
  - ODBC 736
  - physical 73
  - sp\_datatype\_info** information on 743
  - sp\_help** information on 366
  - unbinding defaults from 704–705
  - unbinding rules with **sp\_unbindrule** 709–711
- datatypes, custom. *See* user-defined datatypes
- date parts, order of 44
- day-long time ranges 25
- days
  - alternate language 44
  - in time ranges 25
- dbaccess** auditing option 83
- dbcc** (Database Consistency Checker)
  - scripts and **sp\_checkreswords** 137
  - space allocation and 570
- dbcc** auditing option 83
- dbccdb* database
  - changing workspace size in 782
  - creating workspaces in 784
  - deleting **dbcc checkstorage** history from 787
  - deleting target database information from 786
  - reporting allocation statistics from 807
  - reporting comprehensive information from 800
  - reporting configuration information from 783, 795, 800
  - reporting fault information from 789, 795
  - reporting full details from 800
  - reporting I/O statistics from 789
  - stored procedures for use with 779
- DB-Library programs and changing identifier names 137
- dbo use only** database option
  - setting with **sp\_dboption** 223
- ddl in tran** database option 223
- default database
  - See also sysdevices* table
  - assigning with **sp\_addlogin** 47
  - changing user's 507
- default database devices
  - setting status with **sp\_diskdefault** 246
  - sp\_helpdevice** and 396
- default language id** configuration parameter 47
- default* segment
  - dropping 296
  - mapping 63
- default settings
  - changing login 49, 507
  - configuration parameters 198
  - language 47
- defaults
  - binding 101–103
  - checking name with **sp\_checkreswords** 134
  - displaying source text of 433
  - renaming 137, 604–606
  - system tables and 102
  - unbinding 704–705
- defncopy** utility command 136
- delete** auditing option 83
- deleting
  - See also* dropping
  - dbcc checkstorage** history from *dbccdb* 787
  - files 274
  - plans 266, 268
  - target database information from *dbccdb* 786
- delimited identifiers
  - testing 136
  - using 135, 142
- dependencies, database object
  - changing names of 136
  - recompilation and 605
  - sp\_depends** system procedure 238–243
- descriptors per engine 465
- device fragments, **sp\_helppdb** report on 391
- devices
  - See also sysdevices* table
  - changing names of 139, 141
  - dsync setting for 244
  - information on log 416

- direct updates
    - to system tables 139
  - disk** auditing option 83
  - disk devices
    - adding 77–78
  - disk mirroring
    - sp\_who** report on 731
  - display
    - character sets 431
    - database options 219–228
    - source text of compiled objects 433
    - syntax of modules 671
  - distributed Transaction Management (DTM) 694
  - dots (..) for omitted name elements 56
  - drop** auditing option 83
  - drop logins** option, **sp\_dropserver** 297
  - dropmessages** option, **sp\_droplanguage** 285
  - dropping
    - See also* deleting
    - abstract plan groups 267
    - aliased user 264–265
    - database devices 274
    - groups 282
    - lock promotion thresholds 281
    - plans 266, 268
    - procedures 278
    - remote logins 291–292, 297
    - remote servers 297–298
    - resource limits 269
    - row lock promotion thresholds 293
    - segment from a database 295–296
    - time ranges 273
    - user from a database 301–302
    - user from a group 126
    - user-defined datatype 300
    - user-defined messages 288
    - workspaces 785
  - dsync setting 244
  - dump** auditing option 83
  - dump devices
    - See also* database devices; log device
    - adding 77–78
    - dropping 274
    - listing 396
    - permission and ownership problems 78
  - dump transaction** command
    - trunc log on chkpt** and 226
  - dump transaction** command and **sp\_logdevice** 487
  - dump, database
    - interrupted 232
  - dumping databases 303
  - Dynamic Link Libraries (DLLs), unloading 352
- ## E
- 8-bit terminal, **sp\_helpsort** output 431
  - encrypted columns
    - sp\_helpprotect** 423
  - encryption
    - compiled object source text 442
    - reversing 443
  - ending days of named time ranges 25
  - ending times of named time ranges 25
  - enforcing resource limits 21
  - enhanced login controls
    - authenticate with ANY 507
  - errors
    - number of 528
  - errors** auditing option 83
  - exclusive locks 335, 481
  - exclusive row locks 483
  - exec\_procedure** auditing option 83
  - exec\_trigger** auditing option 84
  - executing operating system commands 763
  - exp\_row\_size** option
    - sp\_chgattribute** 146
    - sp\_help** report on 365
  - expand\_down** parameter
    - sp\_activeroles** 17
    - sp\_displayroles** 261
    - sp-displayroles** 261
  - exporting plan groups 329
  - extended stored procedures
    - creating 38–39
    - displaying 398
    - dropping 278
  - extending
    - segments 331
  - external engine auto start** option
    - sp\_serveroption** 618

## F

failures, media and **trunc log on chkpt** database option 226

family of worker processes  
*fid* reported by **sp\_lock** 482  
**sp\_familylock** report on *fid* 335

fault isolation  
 index level 346, 472

*fid* (family ID) number 335  
**sp\_lock** report 482

file names  
 configuration file 196  
 DLL 352

files  
*See also* tables; transaction log  
 deleting 274  
 inaccessible after **sp\_dropdevice** 274  
 interfaces, and server names 65  
 localization 141

finding  
 cache bindings 111, 379  
 character sets 431  
 configuration parameters 382  
 constraints 387  
 database objects 364  
 database options 219  
 database settings 391  
 datatypes 359  
 devices 395  
 languages 414  
 object dependencies 238, 242  
 object information 359  
 partition information 375  
 permissions 420  
 reserved words 131  
 resource limits 367  
 segments 425  
 server names 430  
 thresholds 439  
 users in a database 440

first page  
 log device 416  
 partition, displaying with **sp\_helppartition** 375

foreign keys  
 dropping 283  
 inserting 350–351

**sp\_fkeys** information on 744  
**sp\_helpkey** and 412

format strings in user-defined error messages 54

formats, times in named time ranges 25

formatting variable-length character data 92–96

formulas for **max\_rows\_per\_page** of nonclustered indexes 149

fragments, device space and **sp\_placeobject** 570

**from** keyword and **sp\_tables** list of objects appearing in clause 758

full name  
 changing with **sp\_modifylogin** 507  
 specifying with **sp\_addlogin** 49

**func\_dbaccess** auditing option 84

**func\_obj\_access** auditing option 84

future space allocation. *See* space allocation 570

**futureonly** option  
**sp\_bindefault** 101  
**sp\_bindrule** 109, 110  
**sp\_unbindefault** 704  
**sp\_unbindrule** 709

## G

getting messages. *See* **sp\_getmessage** system procedure.

global variables  
*See also individual variable names*  
**sp\_monitor** report on 526

**grant** auditing option 84

**grant** option  
**sp\_helprotect** 420  
**sp\_role** 614

groups  
*See also* “public” group  
 changing 126–127  
 dropping 282  
 information about 402  
**sp\_addgroup** 43  
**sp\_adduser** procedure 79  
 Windows NT domain 767

guest users and *sysystemprocs* database 2

## H

Halloween problem  
     avoiding with **unique auto\_identity index** option 227

hash-key collisions 371

help  
     **sp\_sysmon** display 673

help reports  
     *See also* information (server); system procedures

- constraints 387
- database devices 395
- database object 359
- databases 391
- datatypes 359
- dump devices 395
- extended stored procedures 398
- groups 402
- indexes 404
- joins 410
- keys 412
- language, alternate 414
- logins 419
- permissions 420
- remote servers 430
- resource limits 367
- segments 425
- source text for compiled objects 433
- system procedures 359–441
- tables 359
- thresholds 439
- users 440–441

hierarchy  
     *See also* precedence

- data cache bindings 98
- lock promotion thresholds 628, 633
- roles, displaying with **sp\_activeroles** 17
- user-defined datatypes 75

hierarchy of roles. *See* role hierarchies

high availability  
     configuring Adaptive Server for 190

**holdlock** keyword  
     **select** 481

## I

I/O  
     **concurrency\_opt\_threshold** and 147

- configuring size 575
- limiting 21
- log size 494
- usage statistics 611

identifiers  
     delimited 135

- quoted 135
- renaming 136
- reserved words and 131–143
- set quoted\_identifier on** 135, 142
- sp\_checkreswords** and 135

identities  
     alternate 28

IDENTITY columns  
     automatic 223, 227

- database options using 224
- nonunique indexes 224

**identity in nonunique index** database option, setting  
     with **sp\_dboption** 224

identity of user. *See* aliases; logins; users

IDs, time range 26

IDs, user  
     *See also* logins

*image* datatype, size of 663

importing abstract plan groups 444

index pages  
     locks on 482

indexes  
     binding to data caches 97

- checking name with **sp\_checknames** 129
- checking name with **sp\_checkreswords** 134
- estimating space and time requirements 324
- IDENTITY columns in nonunique 224
- information about 404
- order of, reported by **sp\_helpindex** 406
- renaming 137, 604–606
- sp\_placeobject** space allocation for 570–571
- sp\_statistics** 754
- space used by 664
- suspect 446
- unbinding from data caches 700

information (server)  
     current locks 479

## Index

- indexes 404
    - suspect indexes 446
  - information about, reporting
    - cache bindings 99
    - current locks 479
    - data caches 115
    - database devices 395
    - database objects 359
    - database owners 440
    - databases 391
    - datatypes 359
    - dump devices 396
    - extended stored procedures 398
    - first page of log 416
    - groups 402, 440
    - indexes 404
    - join columns 410
    - keys 412
    - languages 414
    - locks 479, 538
    - logins 729
    - performance 673
    - permissions 420
    - remote server logins 419
    - remote servers 430
    - resource limits 367
    - segments 425
    - server processes 729
    - server users 254, 729
    - source text for compiled objects 433
    - space usage 663
    - statistics, monitor 522
    - suspect indexes 446
    - thresholds 439
    - transaction log device 416
    - users, database 440
  - input packets, number of 528
  - insert** auditing option 84
  - intent table locks 335, 481
  - interfaces file
    - changing server names in 141
    - sp\_addserver** and 65
  - intermediate display level for configuration parameters 252
  - isolation levels
    - catalog stored procedures 734
    - identity in nonunique index** database option and 224
    - system procedures 1
- ## J
- Java items and **sp\_helpjava** system procedure 407
  - joins
    - information about 410
    - sp\_commonkey** 188
- ## K
- Kerberos support
    - authenticate with 511
    - authenticating with 49
  - keys, table
    - See also* common keys; indexes
    - dropping 283
    - information about 412
    - syskeys* table 188, 350, 583
  - keywords
    - as identifiers 131
  - kill** command and **sp\_who** 730
- ## L
- language defaults 47
    - adding 44–46
    - changing user's 49
  - languages, alternate
    - alias for 626
    - changing names of 139, 141
    - checking with **sp\_checkreswords** 135
    - date formats in 44
    - dropping 285
    - dropping messages in 288
    - information on 414
    - installing 44
    - official name 626
    - syslanguages* table 414
    - system messages and 353
    - user-defined messages 53

- without Language Modules 44
- last-chance thresholds 69, 519
- LASTONLINE* engine group 34
- LDAP user authentication
  - LDAP descriptors per engine 465
  - maximum ldapua native threads per engine 464
- LDAP, URL search strings 459
- limit types 20
  - elapsed time 20
  - I/O cost 20
  - modifying values 502
  - number of rows returned 20
  - specifying values 20
  - tempdb\_space 20
- limited days
  - modifying for time ranges 505
  - resource limit information on 367
  - specifying for time ranges 25
- limited times
  - modifying for time ranges 505
  - resource limit information on 367
  - specifying for time ranges 25
- linking users. *See* alias, user
- listing
  - database options 219
  - devices 396
- lists
  - catalog stored procedures 733
  - dbcc** stored procedures 779
  - system procedures 1–16
- load**
  - rebuild indexes 581
- load** auditing option 84
- local alias, language 626
- local** option, **sp\_addserver** 64
- local servers 64
  - See also* remote servers; servers
- localization, changing language names and files 141
- lock | unlock** option, **sp\_locklogin** 484
- lock promotion thresholds 627
  - dropping row with **sp\_droprowlockpromote** 293
  - setting row with **sp\_setrowlockpromote** 632
  - sp\_help** report on 365
  - sp\_helppdb** report on database setting 391
- locking
  - cache binding and 99
  - cache unbinding and 701
  - control over 479–483
  - logins 484
  - monitoring contention 538
- locking scheme, **sp\_help** report on 365
- locks
  - displaying information about 479, 538
  - exclusive page 335
  - exclusive table 335
  - exclusive table and page 481
  - “FAM DUR” status 336
  - intent table 335, 481
  - page 335, 481
  - reported by **sp\_lock** 479
  - row 482
  - shared page 335, 481
  - shared table 335, 481
  - sp\_familylock** system procedure 335–337
  - sp\_lock** system procedure 479–483
  - types of 335, 481
- log device information 416
- log on** option
  - create database**, and **sp\_logdevice** 487
- log segment
  - sp\_helplog** report on 416
  - sp\_helpthreshold** report on 439
- logging
  - messages 81–82
  - user-defined messages 53
- logical device name 77, 246
  - syslogs* table 487
- login** auditing option 84
- login\_locked** auditing option 84
- logins
  - See also* remote logins; users
  - accounting statistics 155, 611
  - adding to Servers 47–52
  - alias 28, 264
  - applying resource limits to 20
  - changing current database owner 124
  - dropping 286, 297
  - dropping resource limits from 269
  - information about 419
  - information on 254
  - locking 484–486

## Index

- modifying accounts 507–514
  - modifying resource limits for 502
  - number of 528
  - options for remote 599
  - password change 553–555
  - “probe” 611
  - remote 291–292, 297
  - resource limit information on 367
  - sysremotelogins* table 59–61, 291, 297
  - unlocking 484–486
  - logout** auditing option 84
  - logsegment* log storage, dropping 296
  - lower and higher roles. *See* role hierarchies
- ## M
- machine ticks 528
  - mail messages, server
    - deleting 766
    - processing 585–587
    - reading 770
    - sending 773
    - starting session 777
    - stopping session 778
  - mapping
    - databases 232
    - remote users 59
  - master* database
    - checking with **sp\_checkreswords** 134
    - sp\_dboption** and 221
    - system procedure tables 5
    - thresholds and 70, 520
  - max\_rows\_per\_page** option
    - changing with **sp\_relimit** 146
    - sp\_chgattribute** 146
  - maximum ldapua native threads per engine 464
  - memory
    - freeing from XP Server 352
    - mapping 232
    - used by configuration parameters 382
  - memory pools
    - configuring 575
    - configuring asynchronous prefetch limits 580
    - configuring wash percentage 579
    - defaults 113
    - minimum size of 578
    - sp\_logiosize** and 494, 499
    - transaction logs and 579
  - message **output** parameter, **sp\_getmessage** 353
  - messages
    - adding user-defined 53–55
    - dropping system with **sp\_droplanguage** 285
    - dropping user-defined 288
    - language setting for 288, 353
    - logging 81–82
    - number for 53, 81, 288, 353
    - sp\_getmessage** procedure 353–354
    - system procedure 5
    - sysusermessages* table 53–55
    - unbinding with **sp\_unbindmsg** 708
  - mirroring. *See* disk mirroring
  - model* database
    - changing database options 226
  - model* database, changing database options 222
  - modifying
    - configuration parameter display level 252
    - configuration parameters 195
    - login accounts 507
    - named time ranges 505
    - resource limits 502
    - thresholds 518
  - modifying abstract plans 624
  - modules, display syntax of 671
  - monitoring
    - lock contention 538
    - space remaining 68, 69, 519
    - system activity 522
  - month values
    - alternate language 44
  - moving
    - indexes 570
    - tables 570
    - transaction logs 487
    - user to new group 126
  - MRU replacement strategy
    - disabling 121
  - multibyte character sets
    - sort order 432
    - sp\_helpsort** output 432
  - mutual authentication** option, **sp\_serveroption** 618



## N

named time ranges  
 adding 25  
 “at all times” 26, 273  
 changing active time ranges 27  
 creating 25  
 dropping 273  
 entire day 25  
 IDs for 26  
 modifying 505  
 overlapping 26

names  
 alias 28, 264, 301  
 assigning different, compared to aliases 79  
 changing database object 604–606  
 changing identifier 136  
 checking with **sp\_checknames** 129  
 checking with **sp\_checkreswords** 131  
 DLL file 352  
 remote user 291  
 server 64  
 server attribute 747  
 user’s full 47

naming  
 groups 43  
 time ranges 25  
 user-defined datatypes 75

**negotiated logins** option  
**sp\_serveroption** 620

nesting cursors 208

**net password encryption** option  
**sp\_serveroption** 618

**no chkpt on recovery** database option, setting with  
**sp\_dboption** 225

**no free space acctg** database option, setting with  
**sp\_dboption** 225

not null values  
**sp\_addtype** and 74  
 for user-defined data 74

null values  
**sp\_addtype** and 73  
 for user-defined datatypes 73

number (quantity of)  
 databases reported by **sp\_countmetadada** 206  
 groups per user 126  
 indexes 206

messages per constraint 107  
 open objects 206

## numbers

*See also* IDs, user  
 datatype code 736  
 device 396  
 global variable unit 528  
 message 53, 81, 288, 353  
 ODBC datatype code 736  
*spid* (server process ID) 729  
 weekday names and 44

## O

object names, database  
 checking with **sp\_checknames** 129  
 checking with **sp\_checkreswords** 134

object owners. *See* database object owners.

objects  
 remapping 597–598

objects. *See* database objects; databases.

obtaining current database information 394

ODBC. *See* Open Database Connectivity (ODBC) API datatypes.

official language name 45, 626  
*See also* aliases; languages, alternate

Open Client applications  
 connection security with 60

Open Database Connectivity (ODBC) API datatypes  
 736

operating system commands 763

**optdiag** utility  
 flushing in-memory statistics 343

optimistic index locking 146, 147, 148, 149, 359, 363

optimization  
 queries (**sp\_recompile**) 593

options  
*See also* configuration parameters  
 remote logins 599–600  
 remote servers 618–623

order  
*See also* indexes; precedence; sort order  
 of date parts 44

**output** option  
**sp\_getmessage** 353

## Index

output, number of  
  packets 528  
overhead, data caches 118  
overlapping time ranges 26  
overriding server-wide authentication options 50, 512  
owners. *See* database object owners; database owners  
ownership and dump devices 78

## P

**@@packet\_errors** global variable and **sp\_monitor** 528  
page locks, types of 335, 481  
pages, data  
  computing number of, with **sp\_spaceused** 664  
  locks held on 335, 481  
pair of columns. *See* common keys; joins  
parameters, procedure  
  ways to supply 4, 734  
parentheses ()  
  in SQL statements xviii  
  in user-defined datatypes 73  
passthrough mode  
  **sp\_autoconnect** system procedure 90  
  **sp\_passthru** system procedure 550  
  **sp\_remotesql** system procedure 601  
password complexity  
  152  
  **sp\_extrapwdchecks** 334  
  **sp\_passwordpolicy** 556  
password security  
  securing login passwords on a network 619  
passwords  
  date of last change 259  
  encryption over network 622  
  setting with **sp\_addlogin** 47  
  **sp\_password** 553–555  
  **sp\_remotoption** and 599  
  **sp\_serveroption** and 622  
  trusted logins or verifying 599  
path name, dump device 77  
pattern matching and catalog stored procedure parameters  
  735  
PC DB-Library. *See* DB-Library programs  
performance  
  concurrency optimization 147  
  information about 673  
permissions  
  displaying user's 254  
  dump devices and 78  
  granting 420  
  information on 420  
  new database owner 124  
  new database user 510  
  revoking 420  
  **sp\_column\_privileges** 737  
  system procedures 2  
physical datatypes 73  
physical device name 77  
placeholders  
  error message percent sign (%) 54  
plan groups  
  adding 19  
  comparing 183  
  copying 203  
  copying to a table 329  
  creating 19  
  dropping 267  
  dropping all plans in 266  
  exporting 329  
  information about 370  
  reports 370  
plans  
  changing 624  
  comparing 183, 186  
  copying 203, 205  
  deleting 266  
  dropping 266, 268  
  finding 338  
  modifying 624  
  searching for 338  
  **sp\_showplan** output 646  
pools, memory  
  configuring 575  
  defaults 113  
precedence  
  binding defaults to columns and datatypes 102  
  resource limits 23  
  rule binding 110  
precision, datatype  
  **sp\_help** report on 362  
  user-defined datatypes 73

prefetch  
  disabling 121  
  enabling 121

primary keys  
  **sp\_dropkey** procedure 283  
  **sp\_foreignkey** and 350  
  **sp\_helpkey** and 412  
  **sp\_primarykey** definition of 583

priority  
  **sp\_setpsex** 630

“probe” login account 611

probe process, two-phase commit 611

procedures. *See* stored procedures; system procedures

process logical name. *See* logical device name

processes (server tasks)  
  checking locks held 479  
  checking locks on 335–337, 479–483  
  ID number 729  
  **sp\_showplan** display of 646–647  
  **sp\_who** report on 729–731

promotion, lock 627

protection system  
  groups 43

“public” group  
  *See also* groups  
  information report 402  
  **sp\_addgroup** and 43  
  **sp\_adduser** and 79  
  **sp\_changegroup** and 126  
  **sp\_helpgroup** report on 402

punctuation  
  enclosing in quotation marks 4, 734  
  in user-defined datatypes 73

## Q

queries  
  compilation and optimization 593  
  **sp\_tables** and 758

query plans, recompiling with **sp\_recompile** 593

query processing, limiting with  
  **sp\_add\_resource\_limit** 20

quotation marks (“ ”)  
  enclosing parameter values 4, 734  
  enclosing reserved words 136

single, and **quoted\_identifier** 142

quoted identifiers  
  testing 136  
  using 135, 142

## R

range locks 482

range, specifying for resource limits 20

**read only** database option  
  setting with **sp\_dboption** 225  
  setting with **sp\_setsuspect\_granularity** 635

**readonly** option, **sp\_serveroption** 619

rebuild indexes  
  **sp\_post\_xoload** 581

recompilation  
  stored procedures 593

records, audit 30

recovery  
  data caches and 115  
  displaying mode 635  
  forcing suspect pages online with  
  **sp\_forceonline\_db** 344  
  forcing suspect pages online with  
  **sp\_forceonline\_page** 348  
  listing offline pages 474  
  listing suspect databases 471  
  setting mode 635  
  setting threshold 638

recovery fault isolation 346, 472

**reference** auditing option 84

reference information  
  catalog stored procedures 733  
  **dbcc** stored procedures 779  
  system extended stored procedures 761  
  system procedures 1–5

referencing, object. *See* dependencies, database object

referential integrity constraints  
  binding user messages to 107  
  renaming 604–606

regulations  
  for finding objects 242, 364

**reindex** option, **dbcc**  
  after **sp\_indsuspect** 446

remote logins

## Index

- See also* logins; users
  - dropping 291–292
  - information on 419
  - sp\_remoteoption** for 599–600
  - sysremotelogins* table 59–61
  - trusted or untrusted mode 599
  - remote procedure calls
    - sp\_password** 554
  - remote servers
    - See also* servers
    - changing names of 139, 141
    - dropping logins 291
    - information on 430
    - information on logins of 419
    - names of 64
    - passwords on 554
    - sp\_remoteoption** and 599–600
  - remote users. *See* remote logins
  - removing. *See* dropping; deleting
  - renaming 604–606
    - See also* **sp\_rename** system procedure
    - a database 608–610
    - warnings about 605, 609
  - replacing user-defined messages 53
  - reporting from *dbccdb* database
    - allocation statistics 807
    - comprehensive information 800
    - configuration information 783, 795, 800
    - fault information 789, 795
    - full details 800
    - I/O statistics 789
  - reports
    - plan groups 370
    - sp\_who** 729–731
  - reserved words
    - catalog stored procedures and 734
    - as identifiers 131–143
    - system procedures and 4
  - reservepagegap** option
    - sp\_chgattribute** 146
    - sp\_help** report on 365
  - resource governor 504
  - resource limits
    - creating 20
    - dropping 269
    - examples of modifying 504
    - information about 367
    - modifying 502
    - types of 20
  - retrieving
    - error message text 353
  - return status
    - catalog stored procedures 734
    - sp\_checkreswords** 134
    - system procedures 1
  - reversing encryption of source text 443
  - revoke** auditing option 84
  - revoke** option, **sp\_role** 614
  - role hierarchies, displaying
    - using **sp\_activeroles** 17
    - using **sp\_displayroles** 261
  - roles
    - displaying with **sp\_activeroles** 17
  - row lock promotion thresholds
    - dropping with **sp\_droprolockpromote** 293
    - setting with **sp\_setrowlockpromote** 632
    - sp\_helpdb** report on database setting 391
  - row locks 482
  - rows, table
    - computing number of, with **sp\_spaceused** 664
    - limiting how many returned 20
  - rpc** auditing option 84
  - rpc security model A** option, **sp\_serveroption** 619
  - rpc security model B** option, **sp\_serveroption** 619
  - rules
    - binding 109–110
    - changing names of 137
    - checking name with **sp\_checkreswords** 134
    - displaying source text of 433
    - naming user-created 109
    - remapping 597–598
    - renaming 604–606
    - system tables and 110
    - unbinding 709–711
- ## S
- scale, datatype
    - in user-defined datatypes 73
  - scope of resource limits
    - changes to active time ranges and 27

- information on 367
- specifying 22
- securing login passwords on a network 619
- security
  - user-defined Web services 727
- security** auditing option 84
- security mechanism** option, **sp\_serveroption** 619
- segments
  - See also* database devices; log segment; space allocation
  - adding 62–63
  - changing names of 139, 141
  - checking names with **sp\_checkreswords** 135
  - dropping 295–296
  - extending 63, 331
  - information about 425
  - mapping 63
  - monitoring remaining space 68–72, 518–521
  - sp\_helpthreshold** report on 439
- select** auditing option 84
- select into/bulkcopy/pllsort** database option
  - transaction log and 225
- server aliases 65
- server cost** option
  - sp\_serveroption** 619
- server information options. *See* information (server)
- server login** option
  - sp\_serveroption** 620
- server process ID number. *See* processes (server tasks)
- servers
  - See also* processes (server tasks); remote servers
  - adding 64–67
  - attribute names 747
  - dropping 297–298
  - information on remote logins 419
  - local 64
  - monitoring activity of 522
  - names of 64
  - options, changing with **sp\_serveroption** 618–623
  - remote 430
  - setting row lock promotion thresholds for 632
  - sp\_server\_info** information on 747
  - upgrading and **sp\_checknames** 129
  - upgrading and **sp\_checkreswords** 134
- set** command
  - sp\_setlangalias** and **language** option 626
- setting**
  - auditing options 83
- setuser** auditing option 84
- 7-bit terminal, **sp\_helpsort** output 431
- shared locks 335, 481
- shared row locks 482
- single quotes. *See* quotation marks
- single user** database option
  - setting with **sp\_dboption** 226
- single-user mode 226
  - sp\_renamedb** and 608
- size
  - image* datatype 663
  - log device 488
  - text* storage 663
- size of auto identity column** configuration parameter
  - 223, 227
- sort order
  - changing, and **sp\_indsuspect** system procedure 446
  - information about 431
- source text
  - checking for existence of 144
  - displaying 433
  - encryption, reversing 443
  - hiding 442
- sp\_activeroles** system procedure 17–18
- sp\_add\_qpgroup** system procedure 19
- sp\_add\_resource\_limit** system procedure 20–24
- sp\_add\_time\_range** system procedure 25–27
- sp\_addalias** system procedure 28–29
- sp\_addauditrecord** system procedure 30–31
- sp\_addauditable** system procedure 32–33
- sp\_addengine** system procedure 34–35
- sp\_addexeclass** system procedure 36–37
- sp\_addextendedproc** system procedure 38–39
- sp\_addexternlogin** system procedure 40–42
- sp\_addgroup** system procedure 43
- sp\_addlanguage** system procedure 44–46
- sp\_addlogin** system procedure 47–52
  - authenticate with 511
  - authenticating with 49
- sp\_addmessage** system procedure 53–55
- sp\_addobjectdef** system procedure 56–58
- sp\_addremotelogin** system procedure 59–61

- sp\_addsegment** system procedure 62–63
  - in mixed data and log databases 63
- sp\_addserver** system procedure 64–67
- sp\_addthreshold** system procedure 68–72
- sp\_addtype** system procedure 73–76
- sp\_addumpdevice** system procedure 77–78
- sp\_adduser** system procedure 79–80
- sp\_altermessage** system procedure 81–82
- sp\_audit** system procedure 83–89
- sp\_autoconnect** system procedure 90–91
- sp\_autoformat** system procedure 92–96
- sp\_bindcache** system procedure 97–100
- sp\_binddefault** system procedure 101–103
  - create default and 102
- sp\_bindexclass** system procedure 104–106
- sp\_bindmsg** system procedure 107–108
- sp\_bindrule** system procedure 109–110
- sp\_cacheconfig** system procedure 111–120
- sp\_cachestrategy** system procedure 121–123
- sp\_changedbowner** system procedure 124–125
- sp\_changegroup** system procedure 126–127
  - See also **sp\_dropgroup**
  - sp\_dropgroup** and 282
- sp\_checknames** system procedure 128–130
- sp\_checkreswords** system procedure 131–143
  - return status 134
- sp\_checksourc** system procedure 144–145
- sp\_chgattribute** system procedure 146–151
- sp\_clearpsex** system procedure 153–154
- sp\_clearstats** system procedure 155–156
- sp\_client\_addr** system procedure 157
- sp\_cluster logical** stored procedure 161
- sp\_cmp\_all\_qplans** system procedure 183
- sp\_cmp\_qplans** system procedure 186
- sp\_column\_privileges** catalog stored procedure 737–738
- sp\_columns** catalog stored procedure 739–741
  - datatype code numbers 736
  - sp\_datatype\_info** and 743
- sp\_commonkey** system procedure 188–189
- sp\_companion** system procedure 190–192
- sp\_compatmode** 194
- sp\_configure** system procedure 195–202
  - setting display levels for 252
- sp\_copy\_all\_qplans** system procedure 203
- sp\_copy\_qplan** system procedure 205
- sp\_countmetadata** system procedure 206
- sp\_cursorinfo** system procedure 208–210
- sp\_databases** catalog stored procedure 742
- sp\_datatype\_info** catalog stored procedure 743
- sp\_dbcc\_alterws** stored procedure 782
- sp\_dbcc\_configreport** stored procedure 783
- sp\_dbcc\_createws** stored procedure 784–785
- sp\_dbcc\_deletedb** stored procedure 786
- sp\_dbcc\_deletehistory** stored procedure 787–788
- sp\_dbcc\_differentialreport** stored procedure 789–790
- sp\_dbcc\_evaluatedb** stored procedure 791–792
- sp\_dbcc\_exclusions** 793
- sp\_dbcc\_faultreport** stored procedure 795–799
- sp\_dbcc\_fullreport** stored procedure 800
- sp\_dbcc\_help\_fault** 801
- sp\_dbcc\_patch\_finishtime** 802
- sp\_dbcc\_recommendations** 804
- sp\_dbcc\_runcheck** stored procedure 806
- sp\_dbcc\_statisticsreport** stored procedure 807–809
- sp\_dbcc\_summaryreport** stored procedure 810–813
- sp\_dbcc\_updateconfig** stored procedure 814–816
- sp\_dbextend** system procedure 211–218
- sp\_dboption** system procedure 219–228
- sp\_dbrecovery\_order** system procedure 229–230
- sp\_dbremap** system procedure 232
- sp\_defaultloc** system procedure 233–235
- sp\_deletesmobj** stored procedure, syntax and usage 236
- sp\_depends** system procedure 238–243
  - database object owners and 238
- sp\_deviceattr** system procedure 244–245
- sp\_diskdefault** system procedure 246–247
- sp\_displayaudit** system procedure 248–251
- sp\_displaylevel** system procedure 252–253
- sp\_displaylogin** system procedure 254–260
- sp\_displayroles** system procedure 261
- sp\_drop\_all\_qplans** system procedure 266
- sp\_drop\_qpgroup** system procedure 267
- sp\_drop\_qplan** system procedure 268
- sp\_drop\_resource\_limit** system procedure 269–272
- sp\_drop\_time\_range** system procedure 273
- sp\_dropalias** system procedure 264–265
- sp\_dropdevice** system procedure 274
- sp\_dropengine** system procedure 275
- sp\_dropexclass** system procedure 277
- sp\_dropextendedproc** system procedure 278

- sp\_dropexternlogin** system procedure 279–280
- sp\_droplockpromote** system procedure 281
- sp\_dropgroup** system procedure 282
- sp\_dropkey** system procedure 283–284
- sp\_droplanguage** system procedure 285
- sp\_droplogin** system procedure 286–287
- sp\_dropmessage** system procedure 288
- sp\_dropobjectdef** system procedure 289–290
- sp\_dropremotelogin** system procedure 291–292
- sp\_droprowlockpromote** system procedure 293
- sp\_dropsegment** system procedure 295–296
  - sp\_placeobject** and 296
- sp\_dropserver** system procedure 297–298
- sp\_droptreshold** system procedure 299
- sp\_droptype** system procedure 300
- sp\_dropuser** system procedure 301–302
- sp\_dumpoptimize** system procedure 303–308
- sp\_encryption** system procedure 309–319
- sp\_engine** system procedure 320–322
- sp\_estspace** system procedure 324–328
- sp\_export\_qpgroup** system procedure 329
- sp\_extendsegment** system procedure 331–332
  - create index** and 331
  - create table** and 331
- sp\_extengine** system procedure 333
- sp\_extrapwdchecks** 334
- sp\_familylock** system procedure 335–337
- sp\_find\_qplan** system procedure 338–339
- sp\_fixindex** system procedure 340–342
- sp\_fkeys** catalog stored procedure 744–745
- sp\_flushstats** system procedure 343
- sp\_forceonline\_db** system procedure 344–345
- sp\_forceonline\_object** system procedure 346–347
- sp\_forceonline\_page** system procedure 348–349
- sp\_foreignkey** system procedure 350–351
- sp\_freedll** system procedure 352
- sp\_getmessage** system procedure 353–354
- sp\_grantlogin** system procedure 355
- sp\_ha\_admin** system procedure 357
  - installing with *installhasvss* 357
- sp\_help** system procedure 359–366
- sp\_help\_qpgroup** system procedure 370–371
- sp\_help\_qplan** system procedure 372–373
- sp\_help\_resource\_limit** system procedure 367–369
- sp\_helppartition** system procedure 375
- sp\_helppcache** system procedure 379–380
- sp\_helpcomputedcolumn** system procedure 381
- sp\_helpconfig** system procedure 382–386
- sp\_helpconstraint** system procedure 387–390
- sp\_helpdb** 394
- sp\_helpdb** system procedure 391–394
  - tempdbs and 393
- sp\_helpdevice** system procedure 395–397
- sp\_helpextendedproc** system procedure 398–399
- sp\_helpexternlogin** system procedure 400
- sp\_helpgroup** system procedure 402–403
- sp\_helpindex** system procedure 404–406
- sp\_helpjava** system procedure 407–409
- sp\_helpjoins** system procedure 410–411
- sp\_helpkey** system procedure 412–413
- sp\_helplanguage** system procedure 414–415
- sp\_helplog** system procedure 416
- sp\_helpobjectdef** system procedure 417–418
- sp\_helpremotelogin** system procedure 419
- sp\_helpprotect**
  - encrypted columns and 423
- sp\_helpprotect** system procedure 420–424
- sp\_helpsegment** system procedure 425–429
- sp\_helpserver** system procedure 430
- sp\_helpsort** system procedure 431–432
- sp\_helptext** stored procedure, changes 437
- sp\_helptext** system procedure 433–438
- sp\_helpthreshold** system procedure 439
- sp\_helpuser** system procedure 440–441
- sp\_hidetext** system procedure 442
- sp\_import\_qpgroup** system procedure 444–445
- sp\_indsuspect** system procedure 446
- sp\_jreconfig** 447
- sp\_ldapadmin** system procedure 459–465
- sp\_listener** system procedure 467
- sp\_listsuspect\_db** system procedure 471
- sp\_listsuspect\_object** system procedure 472–473
- sp\_listsuspect\_page** system procedure 474
- sp\_lmconfig** system procedure 475–478
- sp\_lock** system procedure 479–483
- sp\_locklogin** system procedure 484–486
- sp\_logdevice** system procedure 487–489
  - log on** extension to **create database** and 487
- sp\_loginconfig** system procedure 490–491
- sp\_logininfo** system procedure 492–493
- sp\_logiosize** system procedure 494
- sp\_maplogin** system procedure 499

- sp\_metrics** system procedure 500–501
- sp\_modify\_resource\_limit** system procedure 502–504
- sp\_modify\_time\_range** system procedure 505–506
- sp\_modifylogin authenticate with 49
- sp\_modifylogin** system procedure 507–514
- sp\_modifyogin** system procedure
  - authenticate with 511
- sp\_modifystats** system procedure 515–517
- sp\_modifythreshold** system procedure 518–521
- sp\_monitor** system procedure 522–529
  - @@connections and 528
- sp\_monitorconfig** system procedure 530–537
- sp\_object\_stats** system procedure 538–540
- sp\_passthru** system procedure 550–552
- sp\_password** system procedure 553–555
- sp\_passwordpolicy 556
- sp\_pciconfig** 566
- sp\_pkeys** catalog stored procedure 746
- sp\_placeobject** system procedure 570–571
- sp\_plan\_dbccdb** system procedure 572–574
- sp\_poolconfig** system procedure 575–580
- sp\_post\_xoload** system procedure 581–582
  - rebuild indexes 581
- sp\_primarykey** system procedure 583–584
  - sp\_foreignkey and 350
- sp\_processmail** system procedure 585–587
- sp\_procxmode**
  - chained transaction mode 589
- sp\_procxmode** system procedure 588–590
- sp\_querysmobj stored procedure, syntax and usage 591
- sp\_recompile** system procedure 593–594
- sp\_remap** system procedure 597–598
- sp\_remoteoption** system procedure 599–600
- sp\_remotesql** system procedure 601–603
- sp\_rename** system procedure 604–606
- sp\_rename\_qpgroup** system procedure 607
- sp\_renamedb** system procedure 138, 608–610
- sp\_reportstats** system procedure 611–612
- sp\_revokelogin** system procedure 613
- sp\_role** system procedure 614–615
- sp\_sendmsg** system procedure 616–617
- sp\_server\_info** catalog stored procedure 747–749
  - sp\_tables and 758
- sp\_serveroption**
  - external engine auto start 618
  - negotiated logins 620
- server costt** 619
- server login** 620
- sp\_serveroption** system procedure 618–623
- sp\_set\_qplan** system procedure 624–625
- sp\_setlangalias** system procedure 626
- sp\_setpglockpromote** system procedure 627–629
- sp\_setpsex** system procedure 630
- sp\_setrowlockpromote** system procedure 632
- sp\_setsuspect\_granularity** system procedure 635–637
- sp\_setsuspect\_threshold** system procedure 638–639
- sp\_showcontrolinfo** system procedure 642
- sp\_showexeclass** system procedure 644
- sp\_showplan** system procedure 646
- sp\_showpsex** system procedure 648
- sp\_spaceused** system procedure 663–665
- sp\_special\_columns** catalog stored procedure 750
- sp\_sproc\_columns** catalog stored procedure 752
  - datatype code numbers 736
- sp\_ssladmin** system procedure 666–669
- sp\_statistics** catalog stored procedure 754
- sp\_stored\_procedures** catalog stored procedure 756
  - sp\_server\_info information 748
- sp\_syntax** system procedure 671–672
- sp\_sysmon** system procedure 673–678
- sp\_tab\_suspectptn** 680
- sp\_table\_privileges** catalog stored procedure 757
- sp\_tables** catalog stored procedure 758
  - sp\_server\_info information 748
- sp\_tempdb** system procedure 681–689
- sp\_thresholdaction** system procedure 691–692
  - threshold procedure 69, 519
- sp\_transactions** system procedure 694–699
- sp\_unbindcache** system procedure 700–702
- sp\_unbindcache\_all** system procedure 703
- sp\_unbindefault** system procedure 704–705
- sp\_unbindexclass** system procedure 706
- sp\_unbindmsg** system procedure 708
- sp\_unbindrule** system procedure 709–711
- sp\_version** system procedure 712–714
- sp\_volchanged** system procedure 715–718
- sp\_webservices** system procedure 719–728
- sp\_who** system procedure 729–731
  - columns returned 730
- space
  - See also size; space allocation



- estimating table and index size 324–328
- monitoring remaining with **sp\_modifythreshold** 518–521
- sp\_spaceused** procedure 663–665
- unused 664
- space allocation
  - See also* database devices; segments
  - future 570–571
  - log device 488
  - sp\_placeobject** procedure 570–571
- space management properties
  - changing with **sp\_chgattribute** 146
- spid* number
  - sp\_who** output 730
- spt\_committab* table 5
- spt\_datatype\_info* table 735
- spt\_datatype\_info\_ext* table 735
- spt\_monitor* table 5
- spt\_server\_info* table 735
- spt\_values* table 5
- SQL standards
  - SQL pattern matching 735
  - user-defined datatypes and 74
- square brackets [ ]
  - in SQL statements xviii
- starting days of named time ranges 25
- starting times of named time ranges 25
- statistics
  - flushing to *systabstats* 343
  - returned by global variables 522
  - sp\_clearstats** procedure 155
  - sp\_monitor** 522
  - sp\_reportstats** 611–612
- status
  - database device 246
- stored procedures
  - See also* database objects; system procedures
  - cache binding and 99, 701
  - catalog 733–758
  - changing transaction modes with **sp\_procxmode** 588–590
  - for *dbccdb* database 779
  - object dependencies and 238–243
  - remapping 597–598
  - renamed database and 609
  - renaming 604–606
  - sp\_checkreswords** and 135
  - sp\_cluster logical** 161
  - sp\_dbcc\_alterws** 782
  - sp\_dbcc\_configreport** 783
  - sp\_dbcc\_createws** 784–785
  - sp\_dbcc\_deletedb** 786
  - sp\_dbcc\_deletehistory** 787–788
  - sp\_dbcc\_differentialreport** 789–790
  - sp\_dbcc\_evaluatedb** 791–792
  - sp\_dbcc\_faultreport** 795–799
  - sp\_dbcc\_fullreport** 800
  - sp\_dbcc\_runcheck** 806
  - sp\_dbcc\_statisticsreport** 807–809
  - sp\_dbcc\_summaryreport** 810–813
  - sp\_dbcc\_updateconfig** 814–816
  - sp\_recompile** 593
- suspect databases, listing 471
- suspect indexes
  - forcing online 346, 472
- suspect pages
  - bringing online 344–345, 348–349
  - isolating on recovery 638–639
  - listing 474
- suspect partitions, in cross-platform dump and load 581
- sybdiagdb* database 385
- sybsyntax* database 672
- sybssystemprocs* database
  - permissions and 2
- symbols
  - in SQL statements xvii, xviii
- syntax
  - catalog stored procedures 734–735
  - checking for reserved words 134
- syntax conventions, Transact-SQL xvii
- sysalternates* table
  - aliases 28
  - sp\_dropalias** and 264
  - sysusers* table and 28
- syscomments* table
  - source text in 437
- sysconstraints* table
  - sp\_bindmsg** and 107
- sysdevices* table 246, 396
- syskeys* table
  - sp\_dropkey** and 283

## Index

- sp\_foreignkey** and 350
    - sp\_primarykey** and 583
  - syslanguages* table 414
    - sp\_droplanguage** and 285
  - syslkstats* table 539
  - syslogs* table 487
    - put on a separate device 487
  - sysmessages* table
    - error message text 353
  - sysremotelogins* table 59–61, 297
    - sp\_dropremotelogin** and 291
  - sysresourcelimits* table
    - applicable limits for a login session 23
    - sp\_help\_resource\_limit** and 369
  - syssservers* table
    - sp\_addserver** and 64
    - sp\_helpserver** and 430
  - sysssessions*
    - removing old entries 357
  - sysstabstats* table
    - flushing statistics to 343
  - system extended stored procedure
    - xp\_enumgroups** 767
    - xp\_findnextmsg** 768
  - system extended stored procedures 761–778
    - xp\_cmdshell** 763
    - xp\_deletemail** 766
    - xp\_logevent** 769
    - xp\_readmail** 770
    - xp\_sendmail** 773
    - xp\_startmail** 777
    - xp\_stopmail** 778
  - system procedure tables 5
    - catalog stored procedures and 735
  - system procedures
    - catalog stored 733–758
    - changing names of 137
    - displaying source text of 433
    - displaying syntax of 671–672
    - extended stored procedures 761–778
    - help reports 359–441
    - list of 1–16
    - permissions 2
    - return status 1
    - sp\_jreconfig** 447
    - sp\_pciconfig** 566
    - using 1
  - system procedures results. *See* information (server)
  - system roles
    - displaying with **sp\_activeroles** 17
  - system* segment
    - dropping 296
    - mapping 63
  - system tables
    - binding to caches 98
    - defaults and 102
    - direct updates dangerous to 139
    - rules and 110
    - space allocation 570
    - updating 1
  - systemranges* table
    - ID number storage in 26
    - range name storage in 20
  - systypes* table 300
  - sysusermessages* table
    - error message text 353
    - sp\_dropmessage** and 288
  - sysusers* table
    - sysalternates* table and 28
- ## T
- table\_access** auditing option 85
  - tables
    - binding to data caches 97
    - changing names of 137
    - checking name with **sp\_checkreswords** 134
    - column information 739
    - column permission information from
      - sp\_column\_privileges** 737–738
    - common key between 188–189
    - dropping keys between 283
    - dropping row lock promotion thresholds for 293
    - estimating space for 324
    - joined common key 188–189
    - lock promotion thresholds for 628
    - locks held on 335, 481
    - locks, types of 335, 481
    - object dependencies and 238–243
    - primary keys on 583
    - renaming 604–606

- setting row lock promotion thresholds for 632
- sp\_placeobject** space allocation for 570–571
- sp\_recompile** 593
- sp\_table\_privileges** information on 757
- sp\_tables** 758
- space used by 664
- with suspect indexes 446
- system procedure 5, 735
- unbinding from data caches 700
- tape dump devices
  - adding 77–78
- tape** option, **sp\_addumpdevice** 77
- tempdb
  - limiting number pages used per session 21, 503
- tempdb database
  - auto identity** database option and 223
  - unique auto\_identity index** database option and 227
- tempdb\_space 21, 503
- tempdbs
  - sp\_helpdb** and 393
- temporary names. *See* alias, user
- temporary tables
  - sp\_help** and 365
  - system procedure 5
- terminals
  - 7-bit, **sp\_helpsort** output example 431
  - 8-bit, **sp\_helpsort** output example 431
- text
  - copying with **defncopy** 136
  - user-defined message 53
- text* datatype
  - size of storage 663
- @@thresh\_hysteresis** global variable
  - threshold placement and 69
- threshold procedures 69
  - creating 691
  - executing 70–71, 521
  - parameters passed to 70, 520
- thresholds
  - adding 68–72
  - changing 518–521
  - crossing 68
  - disabling 71, 299, 521
  - hysteresis value 69, 519
  - information about 439
  - last-chance 69, 299, 519
  - maximum number 69, 520
  - optimization for reducing I/O 147
  - removing 299
  - row lock promotion 632
  - space between 69
- time interval
  - estimating index creation 324
  - limiting 21
  - since **sp\_monitor** last run 527
- time ranges
  - adding 25
  - “at all times” 26, 273
  - changing active time ranges 27
  - creating 25
  - dropping 273
  - entire day 25
  - IDs for 26
  - modifying 505
  - overlapping 26
- timeouts** option, **sp\_serveroption** 620
- transaction logs
  - data caches and 579
  - log I/O size and 579
  - select into/bulkcopy/pilsort** database option 225
  - on a separate device 487–489
  - thresholds and 299
  - trunc log on chkpt** option and 226
- transactions
  - modes 588–590
- Transact-SQL
  - reserved words 134
- translation
  - of user-defined messages 54
- triggers
  - changing names of 137
  - checking name with **sp\_checkreswords** 134
  - displaying source text of 433
  - object dependencies and 238–243
  - remapping 597–598
  - renamed database and 609
  - renaming 604–606
  - sp\_recompile** 593
- true | false** clauses
  - sp\_dboption** 219
  - sp\_remotoption** 599

## Index

**true** option, **sp\_changedbowner** 124  
**trunc log on chkpt** database option 226  
**truncate** auditing option 85  
trusted mode  
    remote logins and 61  
**trusted** option, **sp\_remotoption** 599  
two-phase commit  
    probe process 611

## U

UDP messaging 616  
**unbind** auditing option 85  
unbinding  
    data caches 700–702  
    defaults 704–705  
    objects from caches 700–702  
unencrypting source text 443  
**unique auto\_identity index** database option 227  
unlocking login accounts 484  
unmapping a segment from a database 295–296  
unused space  
    **sp\_spaceused** reporting of 664  
**update** auditing option 85  
update row locks 482  
us\_english language 45  
usage statistics 611  
**use message confidentiality** server option 620  
**use message integrity** server option 620  
user context for operating system commands (**xp\_cmdshell**)  
    764  
User Datagram Protocol messaging 616  
user IDs  
    changing with **sp\_import\_qpgroup** 444  
    displaying 259  
    dropping with **sp\_droplogin** and 286  
user names  
    *See also* database object owners; logins  
    changing 139  
    checking with **sp\_checkreswords** 135  
user permissions. *See* database owners; permissions  
user-created objects. *See* database objects  
user-defined audit records 83  
user-defined datatypes  
    binding defaults to 101–103

    binding rules to 109  
    changing names of 138  
    checking name with **sp\_checkreswords** 134  
    creating 73–76  
    dropping 300  
    hierarchy 75  
    naming 75  
    unbinding defaults from 704–705  
    unbinding rules with **sp\_unbindrule** 709–711  
user-defined messages 53–55  
    unbinding with **sp\_unbindmsg** 708  
user-defined procedures  
    creating ESPs with **sp\_addextendedproc** 38  
user-defined roles  
    displaying with **sp\_activeroles** 17  
user-defined Web services  
    security 727  
users  
    accounting statistics 155, 611  
    adding 47–52, 79–80  
    change group for 126–127  
    changing names of 141, 507–514  
    dropping aliased 264–265  
    dropping from databases 301–302  
    dropping from servers 286–287  
    dropping remote 297  
    information on 254, 440  
    password change for accounts 553–555  
    permissions of 420  
    remote 419  
    **sp\_who** report on 729–731  
    system procedure permissions and 2  
    *sysusers* table 28  
utility commands  
    *See also Utility Guide* manual  
    display syntax 671–672

## V

values  
    displaying with **sp\_server\_info** 747  
variable-length character data, formatting 92–96  
**view\_access** auditing option 85  
views  
    checking name with **sp\_checkreswords** 134

- columns 739
- common key between 188–189
- displaying source text of 433
- dropping keys between 283
- object dependencies and 238–243
- primary keys on 583
- renamed database and 609
- renaming 137, 604–606
- virtual page numbers 397
- volume handling 715

## W

- wash area
  - configuring 579
  - defaults 579
- wash** keyword, **sp\_poolconfig** 575
- weekday date value
  - first 44
  - names and numbers 44
- wildcard characters
  - SQL standards pattern matching (\$ and \_) 735
- workspaces
  - dropping 785
- writetext** command
  - select into/bulkcopy/plisort** database option 225

## X

- XP Server 762
  - freeing memory from 352
- xp\_cmdshell context** configuration parameter 764
- xp\_cmdshell** system extended stored procedure 763
- xp\_deletemail** system extended stored procedure
  - 766
  - sp\_processmail** and 586
- xp\_enumgroups** system extended stored procedure
  - 767
- xp\_findnextmsg** system extended stored procedure
  - 768
  - sp\_processmail** and 586
- xp\_logevent** system extended stored procedure 769
- xp\_readmail** system extended stored procedure 770
  - sp\_processmail** and 586

- xp\_sendmail** system extended stored procedure 773
  - sp\_processmail** and 586
- xp\_startmail** system extended stored procedure 777
- xp\_stopmail** system extended stored procedure 778

