Release Bulletin
Adaptive Server® Enterprise Version 12.5.3a for IBM AIX

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1. Accessing current release bulletin information

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

❖ **Accessing release bulletins at the Technical Library Product Manuals Web site**

1   Go to Product Manuals at http://www.sybase.com/support/manuals/.

2   Follow the links to the appropriate Sybase product.

3   Select the Release Bulletins link.

4   Select the Sybase product version from the Release Bulletins list.

5   From the list of individual documents, select the link to the release bulletin for your platform. You can either download the PDF version or browse the document online.

2. Product summary

Enclosed is Sybase® Adaptive Server® Enterprise version 12.5.3a. Server and client components are distributed on separate CDs.

For details on system requirements, including disk space and RAM, see the installation guide for your platform.

For more information specific to jConnect™ for JDBC™, jisql, and Ribo, see the jConnect documentation.

2.1 Installation kit

Note The installation guide for Adaptive Server version 12.5.3a is the same installation guide as for Adaptive Server version 12.5.1.

The installation kit includes:

• The server CD – for contents list, see "Server components" on page 4.

• The PC-client CD – contains software client components for installation on Windows 2000, Windows XP Pro, and Windows 2003 computers.

• *Release Bulletin for Adaptive Server Enterprise Version 12.5.3a for IBM AIX* (this document).

- *Installation Guide for Adaptive Server Enterprise 12.5.1 on IBM AIX.*

2.2 Server components

The Server CD includes the following components:

- Sybase Servers:
    - Adaptive Server 12.5.3a
    - Adaptive Server Enterprise Monitor ™ Server 12.5.3a
    - Historical Server 12.5.3a
    - SQL Remote™ 7.0.4
- Language Modules 12.5.3a
- Adaptive Server Administration Tools
    - Sybase Central™ 4.1
    - Adaptive Server plug-in 12.5.3a
    - Job Scheduler Templates and Utilities 2.2
    - SQL Advantage
- Software Developer's Kit (SDK) 12.5.1, which includes the following:
    - Connectivity:
        - Open Client™ 12.5.1
        - Embedded SQL™/C 12.5.1
        - Embedded SQL/Cobol 12.5.1
    - Monitor Client Library 12.5.1
    - XA Interface for Adaptive Server Distributed Transaction Manager 12.5.1
- jConnect for JDBC 5.5 and related utilities and documentation
- jConnect for JDBC 6.0 and related utilities and documentation

2.3 PC-client components

The PC-client CD includes the following components, which can be installed on Windows:

- Software Development Kit (SDK) 12.5.1, which includes the following:
  - Open Client 12.5.1
  - Embedded SQL/C 12.5.1
  - Embedded SQL/Cobol 12.5.1
  - Monitor Client Library 12.5.1
  - XA Interface for Adaptive Server Distributed Transaction Manager 12.5.1
- Adaptive Server Data Providers:
  - ADO.NET 1.1
  - OLE DB Provider by Sybase 12.5.1
  - ODBC Driver by Sybase 12.5.1
- Language Modules 12.5.3
- jConnect 5.5 for JDBC and related utilities and documentation
- jConnect 6.0 for JDBC and related utilities and documentation
- Adaptive Server Administration Tools:
  - Sybase Central 4.1
  - Adaptive Server Plug-in
  - Job Scheduler Templates and Utilities 2.2
  - SQL Advantage
  - Microsoft Cluster Server Administration Extensions
- InfoMaker 9.0
- PowerDesigner 10.0
- PowerTransfer 10.0

2.4 Operating system updates

IBM AIX 5.1 ML02 is the minimum Operating System level supported on Adaptive Server version 12.5.3a. The following operating system levels are supported:

- AIX 5.1 ML02
- AIX5.2 ML04

- AIX 5.3

Additional operating system and firmware patches may be required when running on the IBM Regatta family of servers. See the Sybase Web site at http://www.sybase.com/detail/1,6904,1023360,00.html for detailed information.

To ensure that isql works properly in the AIX 5.1 environment, set the environment variable IRS_NONISPLUS to 1. For more information, see your IBM documentation.

For best performance, use JRE version 1.1.6 or higher.

If your operating system requires patches, install them before you install Adaptive Server components.

To determine which patches have been installed on your system, see "Viewing installed patches," next.

For a complete list of patches, contact your operating system representative. Do not use a patch that is earlier than the version suggested for your operating system. Use the patch recommended by the operating system vendor, even if it supersedes the patch listed.

Viewing installed patches

To determine which patches have been installed on your system, enter:

```
/usr/sbin/swlist -l product | fgrep PH
```

To determine which Extension Pack bundle has been installed on your system, enter:

```
/usr/sbin/swlist -l bundle | fgrep 'Extension Pack
```

To determine which patches have been installed on your system, enter:

```
/usr/bin/lslpp -l
```

To determine which OS has been installed on your machine, enter:

```
/usr/bin/oslevel -g
```

See "man instfix" for more information.

3. Special installation instructions

This section provides information for installing Adaptive Server version 12.5.3a and later that is not included or should be corrected in the installation guide.

3.1 Running dbcc checkcatalog

When any column value is accessed in a database table, Adaptive Server has been enhanced to validate the length of the row and the length of the column value within the row, using information stored within the system catalogs in that database. Any discrepancy is reported in the error log with the message:

```
Invalid column length: <length>. Value must be between
0 and <max col length> for '<row type>' row with minimum
row length of <min row length>.
```

This check requires accurate information within the system catalogs. It is important to verify the accuracy of this information before any database activity occurs after the upgrade to Adaptive Server to prevent any false alarms.

To verify the information, run dbcc checkcatalog(<*database name*>) for all databases. If any errors are reported, fix them by running dbcc checkcatalog(<*database name*>, "fixall").

Dump the database after the fixes have been made. If an older dump is loaded into Adaptive Server, then any fixes that dbcc checkcatalog has applied to system catalogs is lost by the load. Rerun dbcc checkcatalog after the load has completed.

3.2 Installing Adaptive Server version 12.5.3a with previous releases

You can install this release of Adaptive Server on top of an existing 12.5 or later release without having to do an upgrade. Just shutdown your servers, install the release on top of the existing release area and do not configure any servers, and then start your servers back up. There is no upgrade.

For more information about post installation tasks, see the Technote at the Sybase Web site at http://my.sybase.com/detail?id=1013610.

3.3 General configuration steps for Kerberos

For information about installing Kerberos security software, see the white paper on the Sybase Web site at http://www.sybase.com/detail?id=1029260. This helps you get started with using Kerberos with Adaptive Server, OpenClient, OpenServer and jConnect applications.

3.4 Known installation issues

This section describes known problems or issues that you may encounter during the installation process.

3.4.1 Adding a local server name

[CR #348555] As part of the installation, you should have a local server name for the server. If you do not, sp_sysmon "cachewizard" does not work.

Workaround: To add a local server, enter:

```
sp_addserver <local servername>, local
```

Restart the server for this change to take effect.

4. Special upgrade instructions

This section provides information for upgrading to Adaptive Server version 12.5.3a that is not included or should be corrected in the installation guide.

4.1 Upgrading Job Scheduler

[CR #371574]   If you are upgrading from Adaptive Server versions earlier than 12.5.2, you must run the *installjsdb* script anytime you upgrade Job Scheduler.

❖   **Upgrading Job Scheduler**

1   Disable Job Scheduler before you upgrade Adaptive Sever:

```
sp_configure "enable job scheduler", 0
```

2   Upgrade Adaptive Server. See the installation guide for details on upgrading.

3   Run the *installjsdb* script:

```
isql –Usa –Psa_password –Sservername –i
$SYBASE_ASE/scripts/installjsdb
```

Note You must have the directory with the location of the isql executable (*$SYBASE_OCS/bin*) in your path.

The *installjsdb* script looks for the sybmgmtdb database. The script updates Job Scheduler tables and stored procedures.

4   Enable Job Scheduler:

```
sp_configure "enable job scheduler", 1
```

5   To start Job Scheduler, you can either restart the server or enter the following:

```
use sybmgmtdb
go
sp_js_wakeup "start_js",1
go
```

4.2 Upgrade support for Adaptive Server version 12.5.3a

Sybase supports upgrades from Adaptive Server versions 11.9.x, 12.0.x,12.5,12.5.1, 12.5.2, and 12.5.3 to Adaptive Server version 12.5.3a.

5. Downgrading from 12.5.3a release

This section describes instructions to downgrade from Adaptive Server 12.5.3a to Adaptive Server 12.5.3 or an earlier 12.5.x release. These include:

•   Basic downgrade steps

•   Post-downgrade tasks, whether or not 12.5.3a features are enabled

•   Downgrading to Adaptive Server version 12.5.0.x

•   Information regarding downgrading individual features

•   Returning to Adaptive Server version 12.5.3a

Note Adaptive Server 12.5.3a is not an upgrade release, and you may return to previous versions after using the new features in 12.5.3a. Sybase recommends that you do not enable the new features offered in Adaptive Server version 12.5.3a until you are committed to staying with 12.5.3a.

5.1 Basic downgrade steps

Use these basic steps to return to Adaptive Server version 12.5.3 or earlier. Further steps are necessary if you have enabled 12.5.3a features.

1   Overlay the 12.5.3 or earlier binary as you did when installing 12.5.3a.

2   Restart the server with the old 12.5.x binary.

3   Run the 12.5.x version of *installmaster* to return stored procedures to their original version.

These are the minimum tasks needed for rollback. Additional steps are described in the rest of the section.

Note Returning to 12.5.3 ESD #1 is preferable, because 12.5.3 ESD #1 contains fixes for certain security vulnerabilities. Should you return to a pre-12.5.3 ESD #1 version, your site may be at a greater risk of attack.

5.2 Post-downgrade tasks

After you perform the basic downgrade steps, changes from the 12.5.3a upgrade still persist.

5.2.1 System stored procedures

After you run *installmaster* on your downgraded server, any changed system stored procedures are returned to their 12.5.x status. Any new stored procedures introduced to Adaptive Server in releases subsequent to 12.5.x are not removed. Attempts to execute such stored procedures against an older binary will have unpredictable results.

5.2.2 Unrecognized tokens or objects

The on-disk structures of stored procedures, triggers, and views may contain statement identity tokens, datatypes and object references that are not understood by the earlier Adaptive Server versions. You must drop all compiled objects that use features introduced into Adaptive Server subsequent to the release to which you are downgrading.

If you are returning to a pre-12.5.1 version of Adaptive Server, Sybase recommends that you return to 12.5.0.3. This is because 12.5.0.3 includes error handling code for unrecognized tokens or objects pertaining to features in 12.5.1. If the 12.5.0.3 Adaptive Server encounters these unknown objects, it handles them with a meaningful error message.

Should you return to a pre-12.5.0.3 version of Adaptive Server, no such soft landing is provided. Using the new features can result in inexplicable behavior, misleading error messages and stack traces.

5.2.3 System tables

After returning to a pre-12.5.3a binary:

- The new columns added to syscolumns remain but are not used.

- When returning to 12.5.0.x or earlier, the new datatypes date, date null, time, and time null remain in systypes but you cannot use them in 12.5.0.3 and attempts to use them in 12.5.0.2 or earlier will cause a stack trace. See the special procedure for downgrading to Adaptive Server version 12.5.0.x to avoid problems with new datatypes.

- sp_values is dropped and recreated when you run the 12.5.x *installmaster*, so any new types are eliminated from this table.

- sysmessages still contains all the new error messages, but that is not a problem because they are not used.

5.2.4 Configuration parameters

New configuration parameters have been added in 12.5.3a. When starting the previous version of the Adaptive Server, use the old *.cfg* configuration file.

If you forget to run the 12.5.x installmaster before starting Adaptive Server, an error message displays at startup.

Running the 12.5.x version of installmaster removes configuration parameters that belong to 12.5.3a, by deleting sysconfigures rows for configuration parameters that do not exist in syscurconfigs. After running installmaster the error messages will no longer appear when you start the server.

5.2.5 Keywords

Two keywords, func and function, were removed in Adaptive Server 12.5.1, making it possible to create identifiers using these names. If you did not use these as identifiers under 12.5.3a, no action is needed. If you did, the parser generates a syntax error under 12.5.0.x since it interprets these words as keywords.

See Additional steps required if you used 12.5.3a features before downgrading for more information.

5.3 Downgrading to Adaptive Server version 12.5.0.x

Perform these steps only when you are downgrading to 12.5.0.x. Returning to 12.5.0.3 is preferable, because these versions can handle a number of error conditions that may arise as a result of downgrading. Older version of Adaptive Server cannot handle these situations and results are unpredictable.

Although it is not necessary to restore systypes and syscharsets to their previous state, Sybase provides the store procedure sp_twelve_five_one to do so.

After returning to Adaptive Server version 12.5.0.x, remove the new datatypes from systypes and syscharsets and return these tables to their 12.5.0.x state by performing the following steps:

1   Enable updates to system tables:

        sp_configure "allow updates", 1

2   Remove the 12.5.1 datatypes:

        sp_twelve_five_one "remove"

3   Disable updates to system tables:

        sp_configure "allow updates", 0

This procedure also marks all procedural objects for recompiling, to insure that the pre-12.5.1 Adaptive Server does not encounter 12.5.1 objects or datatypes.

5.4 Additional steps required if you used 12.5.3a features before downgrading

If you are rolling back after having used any of the 12.5.3a features, additional steps can be necessary. You should take steps before you downgrade to pre-12.5.3a, and others should be performed immediately after downgrading. Areas of concern are listed for each new feature.

In general, no additional steps are required when you are returning to an Adaptive Server version in which the feature was already available. When returning to a server version earlier than the version in which the feature was introduced, you must be aware of the areas of concern listed below.

See the encrypted columns section in the *New Feature Bulletin for Adaptive Server Enterprise version 12.5.3a.*

5.4.1 Encrypted Columns

If you have used the encrypted columns feature of 12.5.3a, you must take steps in 12.5.3a before you downgrade. Perform the following:

1. Drop all stored procedures, views, and triggers that use the SQL extensions for encrypted columns.

2. Remove all encrypted data by dropping tables with encrypted columns or using alter table to decrypt the data or drop the encrypted columns.

3. Run sp_encryption remove_catalog to remove the sysencryptkeys system catalog in each database.

5.4.2 Real Time Messaging

Drop all stored procedures, views, and triggers that use the messaging built-ins for the Real Time Messaging feature.

For more information about Real Time Messaging, see the *Messaging Services User's Guide*.

5.4.3 New sort orders

Upgrading from 12.5.0.3 to 12.5.1 or later modifies syscharsets. All of the sort orders that were (formerly) destined for use with unichar was rewritten in terms of ID and CSID, although the names remain the same. Other sort orders (that is, any that you loaded with the charset utility or the sqlloc GUI front end) remain unmodified.

While running under 12.5.3a, you may configure UTF-8 with a non-binary sort order. If you return to 12.5.0.3 that server fails to start, with a message saying that the character set/sort order combination is not supported. Versions earlier than 12.5.0.3, however, do not have the error handling code; you do not get the message but instead see inexplicable behavior. The most likely symptom is that the server cannot find anything using indexes on the system tables.

To get around this:

• Restart the 12.5.3a server.

• Configure UTF-8 with binary sort order bin_utf8 (ID 50). Do not use any other binary sort order (there are three to choose from); bin_utf8 is the only one known to 12.5.0.3 and earlier servers.

Now when you start 12.5.0.3, syscharsets is still in the 12.5.3a state. If you run sp_helpsort, rewrite syscharsets to a close approximation of what it was before the upgrade.

Note If you execute sp_helpsort now, and then decide to go back to 12.5.3a, be aware that although syscharsets is in the 12.5.0.3 state, the upgrade does not run again since it has already run once. Execute sp_helpsort again on return to 12.5.3a to update the syscharsets table.

5.4.4 Unicode parser

If you have taken advantage of unicode parser feature through explicit or implicit use of the U&'syntax' (in a stored procedure, for example), the text of the stored procedure is saved in syscomments. If you roll back to 12.5.0.3 and the server needs to recompile from query text, you get syntax errors.

On another note, if you take advantage of the fact that in 12.5.3a unichar no longer requires UTF-8, you may have stored procedure plans that contain unichar-to-char conversions. In 12.5.1 this is handled correctly on a non-UTF-8 server. In 12.5.0.3 and earlier, however, the assumption was UTF-8; anything else causes the conversion to throw an error and abort the transaction.

5.4.5 date/time datatypes

When you start the 12.5.3a server, the new system types are installed in systypes. If you returned to 12.5.0.3:

- The new types remain in systypes, but server operation is not affected provided you did not use the new types on the 12.5.3a server

- You cannot create using date or time because error checks were added

- If the server encounters date/time tokens, it raises error messages

- If the server encounters a 12.5.3a procedure that accesses a table with date/time types, a stack trace results.

If you returned to a pre-12.5.0.3 server, nothing prevents you from creating objects using date and time types (since no error handling code exists for this purpose), but this is not advisable because any operations on those objects such as selects or inserts result in stack traces.

If you have created 12.5.3a tables with date or time columns, or procedures with date or time parameters, you need to remove references to these types before rolling back to a pre-12.5.1 server. You can run the following, which identifies the offending tables and procedures, advising you to remove references to them or use alter table to modify the types:

```
sp_date_time_type
```

If sp_date_time_types does not find any date/time objects, it marks procedural objects for recompile, removing all internal references to these new types

5.4.6 SQL derived tables

If you used SQL derived tables before returning to a pre-12.5.1 version server, and you:

- Create views with SQL derived tables using version 12.5.3a roll back to ASE 12.5.0.3, then try to select from the view, you get an error that derived tables are not supported in that version.

- Create stored procedures with SQL derived tables in 12.5.3a roll back to ASE 12.5.0.3 or earlier versions and run the stored procedure, you will see an error that the object (SQL derived table) does not exist.

- Create views with SQL derived tables in 12.5.3a return to a pre-12.5.0.3 version, you get stack trace errors.

5.4.7 Native XML

The XML Services feature of Adaptive Server includes the following new built-in functions and clauses:

- xmlextract built-in function

- xmlparse built-in function

- xmltest predicate

- for xml clause of select commands

If you create views or stored procedures using one of these features in 12.5.3a, then return to 12.5.0.3, you get an error that the feature is not supported in that version. If you store XML documents in:

- Their original text form, they can be processed on both Adaptive Server 12.5.3a and ASE 12.5.0.3.

- The parsed form generated by the xmlparse built-in function, then return
  to 12.5.0.3, the parsed form is not accessible. You must first regenerate the
  text form of the XML documents in 12.5.3a.

For example, if a column named xmlindexed contains data generated in
Adaptive Server 12.5.3a by the xmlparse built-in function, you can regenerate
the text form of the document in the xmlsource column with the following SQL
statement that uses the Adaptive Server 12.5.3a xmlextract built-in function:

```
update xmltab
set xmlsource = xmlextract("/", xmlindexed)
```

You may then do one of the following:

- Process the xmlsource column directly with the Java-based XQL
  processor, using the com.sybase.xml.xql.Xql.query Java-based method, or

- Update the xmlindexed column with the parsed form suitable for
  processing with the Java-based XQL processor, using the following
  statement:

```
update xmltab
set xmlindexed = com.sybase.xml.xql.Xql.parse(xmlsource)
```

If you do not want to add the xmlsource column, you can combine these steps
with the following SQL statement in ASE 12.5.3a:

```
update xmltab
set xmlindexed
= com.sybase.xml.xql.Xql.parse
(xmlextract("/", xmlindexed))
```

Prior to execution of this update statement, the xmlindexed column contains the
parsed form of the documents generated by the xmlparse 12.5.3a built-in
function. After the update statement, that column contains the parsed form of
the documents, generated by the com.sybase.xml.xql.Xql.parse Java-based
method, suitable for processing in Adaptive Server12.5.0.3 with the
com.sybase.xml.xql.Xql.query Java-based method.

A configuration parameter was added to enable XML in 12.5.1. When you first
restart with the prior version, you may see error message 5859 advising you
that the parameter is unknown. After running *installmaster* from the pre-12.5.1
version this warning should no longer appear.

5.4.8 Automatic database expansion

If you installed the 12.5.1 automatic database expansion procedures using installdbextend, and then applied the threshold procedure to one or more database segments, the thresholds might not work properly when applied to the log segment after a downgrade to 12.5.0.3.

To clear all auto-expansion thresholds that might exist on one or more segments before downgrading, use the command:

```
sp_dbextend 'clear', 'threshold'
```

Alternatively, you can disable the entire automatic expansion feature server-wide without changing any existing rules or clearing any thresholds. Execute the following commands using sa_role:

```
use master
go
sp_dbextend 'disable', 'database', 'server-wide'
go
```

This prevents threshold procedures from doing any work even if they were fired at runtime.

Sybase recommends that you leave all the policies and thresholds in place, and simply disable the entire feature server-wide before the downgrade. This simplifies re-enabling automatic expansion if you return to 12.5.1 later.

6. Known problems

This section describes known problems and workarounds for Adaptive Server.

6.1 Highlighted encrypted columns issues

This section covers issues on encrypted columns.

6.1.1 Residual *cleartext* data on disk

[CR #392841]   Encryption of data through alter table copies the table to new data pages. The old (cleartext) values remain in the unused pages until those pages are re-used by the server. A similar situation exists with the transaction log. Log records of updates and deletes on tables prior to encrypting the data (through alter table) will also persist until those log pages are re-used.

Workaround: To destroy residual data pages, build a brand new device. Use bcp to copy all the data out from the old device and back in to the new device. The -C option on bcp will leave the data in ciphertext format during the transfer. Destroy the old device. For the case of plaintext values that may remain in the transaction log, normal database activity replaces these pages.

6.1.2 Using referential integrity with encrypted columns

[CR #369088]   Referential integrity and encryption may not apply to the same column in Adaptive Server version 12.5.3a. For example, if you have a primary key with a foreign key dependency, you may not encrypt the primary key. Similarly, you may not encrypt a foreign key.

Workaroud: There is no workaround for this issue.

6.1.3 Executing sp_encryption 'remove catalogs' fails to give error message

[CR #395745]   When executing sp_encryption 'remove_catalogs' to prepare for downgrade, you should get an error when a given key has been used to encrypt a column. No error is issued if the column and the key are in the same database, and sp_encryption removes sysencryptkeys even where there are encrypted columns in the database.

Workaround: With sso_role permissions, run:

```
sp_encryption help
```

This command prints a list of keys in the current database. For each key listed, the System Security Officer runs:

```
sp_encryption help, <keyname>, display_cols
```

The command lists the names of any columns encrypted by the key. Then use alter table to decrypt these columns before executing sp_encryption 'remove_catalogs'.

6.1.4 Views and encrypted columns used with bcp

[CR #395749]   If a view uses an encrypted column in the where clause, such as bcp out using -C fails:

```
create view v as select custid from customer where
ssn = '123 44 5678'
```

Workaround: Put the results of the view into an intermediate table using select into or insert-select. You may use bcp out with -C on the intermediate table.

6.1.5 Encrypted column license display

[CR #395247]   12.5.3a Adaptive Server Plug-in does not correctly display encrypted column license information. Even if encrypted columns are licensed and enabled, Adaptive Server Plug-in does not display them as part of the license information.

Workaround: There is no workaround for this issue. This does not affect Adaptive Server functionality.

6.2 Starting replication agent with the recovery option

[CR #387036]   Starting a replication agent with the recovery option to apply a procedure to recover a primary database from old logs fails.

Workaround: Use alternatives to synchronize primary and replicated databases, depending on the environment. You can use:

•   rs_subcmp utility

•   dump database and load database

•   set autocorrection in replication server

For more information, see the Replication Server manuals.

6.3 SSL and Replication Agent

[CR #391581]   An error occurs when you attempt to establish an SSL connection between Replication Agent Thread version 12.5.3.a and Replication Server version 12.6 ESD #5.

Workaround: When you configure Adaptive Server for SSL, Replication Server creates a primary connection, but the Replication Agent Thread fails on the initial connection attempt. However, when you restart the Replication Agent Thread, it establishes a successful SSL connection.

6.4 Blank spaces in an *ldap* server entry

[CR #333307]   If you have a blank space after your ldap server entry, dscp defaults to using the interfaces driver and does not connect to an ldap server.

Workaround: When you want to use dscp to make an entry into an ldap server, enable ldap by editing the *$SYBASE/OCS-12_5/config/libtcl.cfg* file to add the ldap server you plan to use.

6.5 *alter table* and triggers with *if update()* clauses

[CR #199655, 343165]   If a trigger contains an if update() clause, data modifications that should fire the trigger that are performed after executing alter table add, alter table drop, alter table lock, or alter table modify may cause errors in column references. Triggers on the altered table that use an if update() clause in the body of the trigger to reference a column may not fire, or may fire incorrectly.

Workaround: After the alter table operation has completed, drop and re-create all triggers on the altered table. Doing so causes the if update() clause in the triggers to correctly reference the new columns by their new column offsets, so the trigger code executes correctly.

6.6 Truncation error using *select* with *power()* function and numeric argument

[CR #236723]   If you use the select command with the function power(), and use a numeric argument, the result is a truncation error.

Workaround: Convert the numeric argument to a float.

6.7 Some messages returned incorrectly on UTF-8 servers

[CR #271646]   When the Adaptive Server default character set is UTF-8, the ASE Replicator procedures sp_addreplicateart and sp_addreplicateconn return some error messages incorrectly.

This problem does not affect the function of these procedures.

Note Even though the error messages are not returned correctly, the errors are logged correctly in the ASE Replicator log files.

Workaround: There is no workaround for this issue.

6.8 Cross platform *bcp* of parsed XML images

[CR #332012]   You cannot use bcp or replicate parsed XML image data between a big-endian platform and a little-endian platform, for example between a Solaris platform (big-endian) and a Linux or Windows platform (little-endian).

The term "parsed XML image data" refers to data of datatype image that is generated by the xmlparse built-in function.

Workaround: When you transfer XML data between platforms, transfer the character form of the XML documents rather than the parsed XML form. If you have not stored the character form of the XML documents, you can regenerate it from the parsed form. For example, if column xmlindexed of the xmldocuments table is an image column containing parsed XML image data, the following two commands append a new text column to the table and populate it with a character form of the documents contained in the xmlindexed column:

```
alter table xmldocuments add xmltext text
update xmldocuments set xmltext = xmlextract('/', xmlindexed)
```

Then you can use bcp or replicate the xmltext column from one platform to the other.

6.9 Starting the Sybase License Manager Utility

[CR #351387] If the DISPLAY environment variable is not set, executing *$SYBASE/SYSAM-1_0/bin/lmgr* to start the Sybase License Manager Utility causes errors.

Workaround: You must set the DISPLAY environment variable by executing:

In Bourne shell where *host name* is the name of the system where you want the installer screens to display:

```
set DISPLAY=<host name>:0.0
export DISPLAY
```

In C shell:

```
setenv DISPLAY <host name>:0.0
```

6.10 Memory allocation failure

[CR #350856] If there is insufficient memory in the heap class Adaptive Server hangs.

Workaround: Double the heap class size.

6.11 Migration of stored procedures

[CR #328131] sybmigrate does not migrate stored procedures that have a space character in their name, or belong to a procedure group.

Workaround: There is no workaround for this issue.

6.12 *cis connect timeout* and *enable SNMP* are not implemented

[CR #323177]   Configuration parameters cis connect timeout and enable SNMP are not currently implemented.

Workaround: Do not use these configuration parameters.

6.13 XP Server returns incorrect results

[CR #280073]   On all systems, using an extended stored procedure (ESP) with parameters can result in wrong data being send to XP Server. Because of this, XP Server could return incorrect results.

This happens when there is no parameter declaration list in the ESP, but one or more parameters are supplied at execution time. Before CR #280073, all parameters supplied at execution time were sent to the XP Server, causing incorrect results. CR #280073 fixes this problem by silently ignoring all parameters supplied at execution time when the parameter declaration list is empty.

This fix does not cause any behavior change when the parameter declaration list in the ESP matches the parameters supplied at execution time.

If you are using ESPs without a parameter declaration list, and you supply parameters at execution time, drop and re-create the ESP in Adaptive Server. Make sure the parameter declaration list in the ESP matches the parameter list supplied at execution time

You can use trace flag 523 to revert to pre-CR280073 behavior. This is a server-wide trace flag you set when you restart Adaptive Server.

6.14 Network license daemon support

Adaptive Server version 12.5.2 and higher has upgraded the SySAM daemons and libraries (FlexLM) to version 8. The SySAM daemons (lmgrd and SYBASE) are backward compatible; the libraries are not. As a result, Adaptive Server 12.5.2 cannot check out licenses from earlier versions of the SySAM license daemons.

Workaround: Sites using the Network License Model should make sure that the central SySAM license daemons are upgraded first.

6.15 Configuring connectivity for clients accessing wide data

[CR #271822]   If you are using wide data (that is, data other than text and image that is greater than 255 bytes), and you are using the bulk library APIs, make sure you configure the connectivity capability for wide data. Failure to do so may result in memory corruption.

6.16 Upgrading check constraints

[CR #272941]   When you upgrade to Adaptive Server 12.5.0.1 or later, check constraints created with the following criteria as they may not have been upgraded correctly:

•   The check constraint was created as a named check constraint

•   Quoted identifiers were set to on while the constraint was created

•   Quote identifiers were used around the entire constraint name

•   The constraint name was also a key word, or not a legal identifier

You see parser syntax errors after you have upgraded to Adaptive Server 12.5.0.1 and later, and when you first add data to the constrained column, or when you run dbcc upgrade_object.

To determine whether this problem occurs on your upgraded databases, run this command to check for syntax errors on your constraints and rules:

```
dbcc upgrade_object (dbname, rule)
```

Workaround: There are two workarounds to this problem:

•   Issue alter table drop *constraint_name* to drop a constraint that was not upgraded successfully. Then issue alter table add *constraint_name*, and re-create the constraint.

•   As System Administrator, manually update *syscomments.text* to add quoted identifiers to the constraints that were not successfully upgraded.

6.17 Handling multibyte character sets during migration

[CR #353079]   If you configure multibyte character sets after migrating data from system catalogs sysattributes and sysxtypes, the text columns in these catalogs are inconsistent with the multibyte character sets.

Workaround: Manually run dbcc fix_text on sysattributes and sysxtypes, to make the text columns consistent with the multibyte character sets.

7. Product compatibilities

This section lists the Sybase components that are compatible with Adaptive Server Enterprise version 12.5 and later. For information about operating system requirements, see individual component documentation.

Note DirectConnect 12.6 for Informix, MSSS, UDB does not support LDAP.

The following components have been tested for compatibility with Adaptive Server 12.5 and later:

- Sybase Character Sets 3.0

- Sybase Central viewer 4.x

- ECDA option for ODBC 12.6

- ECDA option for Informix 12.6

- MainframeConnect DirectConnect for OS/390 12.6

- ECDA option for Oracle 12.6

- ECDA option for Microsoft SQL Server 12.6

- ECDA option for DB2 Universal Database 12.6

- ECDA option for AS/400 12.6

- OpenSwitch 12.5

   Note OpenSwitch 12.5 does not support SSL.

- jConnect for JDBC 4.5

- jConnect for JDBC 5.5

- Open Server™ 12.5.1

- SDK 12.5.1

- Open ServerConnect™ (CICS, IMS/MVS) 4.0

- Open ClientConnect™ (CICS, IMS/MVS) 4.0

- ODBC Driver for Adaptive Server 12.5

- OLE DB Provider for Adaptive Server 12.5

- InfoMaker 7.0.3

- Replication Server® 12.5, 12.6

- SQL Remote 7.0.02

- Physical Architect 8.0

- XA-Library for CICS/ENCINA 11.1.1

- XA-Server for Tuxedo 11.1.1

Note Backup Server 12.5 is compatible with Backup Server 11.5.1 and later. Either server can be local or remote. Backup Server 12.5 is compatible with versions of Backup Server earlier than 11.9.2.1 *only* if the Backup Server 12.5 is the remote server.

7.1 Known compatibility issues

7.1.1 Installing Replication Server with other Sybase software

You have to install the RepServer 12.5 in a separate product directory. If the RepServer is 12.6 or later, a separate product directory is not necessary. This includes the Replication Server Manager.

7.1.2 Using Job Scheduler templates

Sybase recommends upgrading to the Job Scheduler templates provided with Adaptive Server 12.5.3a. The templates contain an important change that handles the 12.5.3a version number. To upgrade, install the XML from the *$Sybase/JS-12_5/Templates/xml* directory and the template stored procedures from the *$Sybase/JS-12_5/Templates/sprocs* directory. For more information on installing the templates, see *Job Scheduler User's Guide*.

This upgrade should not interfere with any existing jobs as there were no interface or functional changes. Essentially all that happens is that existing jobs will use the updated template stored procedures, and will run as they have in the past.

Note If you have existing jobs created from templates delivered with a pre-12.5.2 Adaptive Server, you will need to refer to the 12.5.2 Release Bulletin for your platform and follow the upgrade steps there for the Job Scheduler templates. Then you can upgrade Job Scheduler templates using the above information.

---

8. Documentation updates and clarifications

This section describes changes and additions to the Adaptive Server documentation set.

8.1 Web Services User's Guide

The following are updates for Adaptive Server for *Adaptive Server Enterprise Web Services User's Guide*.

8.1.1 Remote server class definition setting

Include the following in the "Troubleshooting Issues" section of Chapter 7, "Troubleshooting" in the *Adaptive Server Enterprise Web Services User's Guide*.

Issue   The sp_webservices add command may return the following error when generating proxy tables:

```
Warning: Row size (3347 bytes) could exceed row size limit, which is 1962
bytes.
Msg 208, Level 16, State 1:
Server 'JMALVARADO', Line 1:
tempdb..ws_4338e6e122cd4ef0a not found. Specify owner.objectname or uses to
check whether the object exists (sp_help may produce lots of output).
No proxy tables were created for the WSDL URL:
[http://www.xignite.com/xquotes.asmx?WSDL]
(return status = 0)
```

This error occurs because the remote server representing the Web Services Consumer has been added using sp_addserver with a class other than "sds." To verify that this is so, use sp_helpserver in isql:

```
1> sp_helpserver ws
2> go
```

Here, *ws* is the name of the Web Services Consumer. This is the default. The remote server class is returned in the indicated column of the result:

```
name network_name class ...
---- ------------ ----- ...
ws   ws           null  ...
```

User action   Change the class of the remote server to "sds" by using sp_dropserver and sp_addserver in isql:

```
1> sp_dropserver ws_name
2> go
...
1> sp_addserver ws_name, sds, ws_name
2> go
```

Here, *ws_name* is the name chosen for the Web Services Consumer.

8.2 Updates for Using Sybase Failover in a High Availability System

The following are updates for Adaptive Server for *Using Sybase Failover in a High Availability System.*

8.2.1 Configuring Adaptive Server resource groups

Step 2 of the section titled "Configuring Adaptive Server resource groups" in Chapter 11, "Active-Active Configuration for Sun Cluster 3.0" and in Chapter 12, "Active-Passive Configuration for Sun Cluster 3.0" is replaced with:

If you use another file at a different location, specify the full path for the resource extension property *Dataserver_login_file* when configuring the *SY.ase* resource. Create or edit a file that contains Adaptive Server login information for system administrator and the user you added for the fault monitor. The default file is *$SYBASE/$SYBASE_ASE/SC-3_0/etc/ase_login_file*.

The file consists of two lines; the first line is the login and password of the System Administrator, and the second line is the login and password of monitor_user. The fault monitoring program, ase_monitor, performs the thorough probe as user monitor_user.

```
                    login_type <tab> login string
                    login_type <tab> login_string
```

Valid values for login type are "encrypted" and "normal". If you set *login_type* to "normal", the value of the *login_string* is in the form "login_name/password". If you set *login_type* to "encrypted", the value of *login_string* is the encrypted string you get from the haisql utility (located in *$SYBASE/$SYBASE_ASE/bin*). Sybase recommends usage of "encrypted" *login_type* so the sensitive information in the file is well protected. To use haisql to generate the encrypted login string:

1   Run haisql with no arguments to generate the encrypted string for a given *login_name* and *password*:

```
/$SYBASE/ASE-12_5/bin/haisql
Enter Username: sa
Enter Password:
TWAS8n1jSF2gBsvayUlw97861.cyTKaS1YhavBRQ2qKcJwtx.TmFBarGS2Kl553WDR7g8m5
vrf86t@K4CU62HEccm4zkeexsP9E=FeuvX
```

2   Copy and then paste the encrypted string to the *ase_login_file* file.

The following is an example of the *ase_login_file* using the "encrypted" login type:

```
encrypted
TWAS8n1jSF2gBsvayUlw97861.cyTKaS1YhavBRQ2qKcJwtx.TmFBarGS2Kl553WDR7g8m5vrf86t
@K4CU62HEccm4zkeexsP9E=FeuvX
encrypted
rX2S8n1jSF2gBuD0q=AXEXKCZvzGcK5K3kWnp_P+e4avf=67kYVSzy7+h640@97FSP_dlkH_oV2Zi
ma5+7tUyHnsm4zmSIHIUnKSTPoTD
```

The following is an example of the *ase_login_file* file using "normal" login type:

```
normal     sa/sa_password
normal      monitor_user/monitor_user_password
```

Note The two lines of the *ase_login_file* may use different login types.

You should protect the *ase_login_file* file with proper access permissions, particularly if you are not using the encrypted login strings. Perform the following to make the file readable only to the root user after editing the file with proper *login_type* and *login_string* values:

```
chmod 400 ase_login_file
chown root ase_login_file
chgrp sys ase_login_file
```

8.3 Utility Guide

The following are updates for Adaptive Server for the *Utility Guide*.

8.3.1 bcp modes

Correction   In the section "bcp modes" in Chapter 3, "Using bcp to Transfer Data to and from Adaptive Server" of the *Utility Guide*, the description should read:

bcp in works in one of two modes:

• Slow bcp – logs each row insert that it makes, used for tables that have one or more indexes or triggers.

• Fast bcp – logs only page allocations, copying data into tables without indexes or triggers at the fastest speed possible.

Version 12.5.1 of the book erroneously reversed the descriptions.

8.3.2 ddlgen

ddlgen, the Java-based tool that generates definitions for server- and database-level objects in Adaptive Server, has expanded its list of filters to include indexes, triggers, and constraints out of table and database definitions in the DDL of database- as well as table-level objects. The valid filters are:

-F   filters out indexes, triggers, and constraints out of table and database definitions in the DDL of table- and database-level objects. The valid filters are:

• *For tables* – [% | I | RI | KC | TR]

• *For databases* – [% | SGM | GRP | USR | R | D | UDD | U | V | P | XP | I | RI | KC | TR]

The filter options are:

Filter option	Filters out:
%	Everything, and retrieves the schema-only definition of a database or table.
SGM	Segments
GRP	Groups
USR	Users
R	Rules
D	Defaults

Filter option	Filters out:
UDD	User-defined datatypes
U	User tables
V	Views
P	Stored procedures
XP	Extended stored procedures
I	Indexes
RI	Referential integrity constraints
KC	Primary- and unique-key constraints
TR	Triggers

Examples

Generates DDL for the authors table in the pubs2 database, filtering for all indexes (I), and referential integrity constraints (RI), primary and unique key constraints (KC), and triggers (TR) from the DDL of a table:

```
ddlgen -Uroy -Proy123 -TU -Nauthors -Dpubs2 -F%
```

Alternatively, you can specify each of the filters individually:

```
ddlgen -Ulogin -Ppassword -TU -Ndbname.owner.table
     -FI,RI,KC,TR
```

Note When you use the -F parameter to filter a table, then indexes, referential integrity, key constraints and triggers automatically get filtered, as they are a subset of table object.

The following generates the definition of *table_name* while filtering out foreign keys and primary-unique keys:

```
ddlgen -Ulogin -Ppassword -TU -Ntable_name -Ddbname
     -FRI,KC
```

Both of these generate foreign keys for a specified user in the entire database:

```
ddlgen -Ulogin -Ppassword -TRI -N%.%.% -Ddbname
```

Or:

```
ddlgen -Ulogin -Ppassword -TRI -Ndbname%.%.%
```

Both of these generate DDL for the primary and unique keys of all the tables in a database that begin with "PK":

```
ddlgen -Ulogin -Ppassword -TKC -Ndbname.%.%.PK%
```

Or:

```
ddlgen -Ulogin -Ppassword -TKC -N%.%.PK% -Ddbname
```

Note Although you can normally generate all indexes only for a table, the -T object type parameter with the RI and KC value allows you to generate foreign keys as well as primary and unique keys for an entire database.

The following generates schema-only definition of a database:

```
ddlgen -Ulogin -Ppassword -Sserver:port -TDB -Ndbname
-F%
```

Alternatively, you can specify each of the filters individually:

```
ddlgen -Ulogin -Ppassword -Sserver:port -TDB -Ndbname
    -FSGM,GRP,USR,R,D,UDD,V,P,XP,I,RI,KC,TR
```

The following generates the database DDL skipping the compiled object:

```
ddlgen -Ulogin -Ppassword -Sserver:port -TDB -Ndbname
-FTR,D,XP,V,R
```

The following generates database definition without a table definition:

```
ddlgen -Ulogin -Ppassword -Sserver:port -TDB -Ndbname
    -FU
```

ddlgen update

Servers   The existing description of the -S parameter in ddlgen is:

• -S*host_name* : *port_number*

specifies the host name or IP address of Adaptive Server, as well as its port number. Separate *host_name* and *port_number* with a colon, without spaces before or after it.

Note You must use the -S option because ddlgen does not connect to a default server.

The updated description is as follows:

• -S*server* – specifies the name of the Adaptive Server. ddlgen looks this name up in the interfaces file or LDAP configuration file. If you specify:

• -S [*host_name*:*port_number*] – ddlgen uses the *host_name* and *port_number* provided, and neither interfaces nor LDAP configuration files are read or parsed.

- • -S[*server*] -I – ddlgen parses the interfaces file specified at the user location for the server name (see the -I parameter description for more information).

- • -S[*server*] – without specifying an interfaces file, ddlgen:

  1 Tries to read the LDAP configuration file from the standard location.

  2 If the LDAP file does not exist, or exists but does not contain an Adaptive Server entry, then the interfaces file is parsed at its standard location for the server name.

  3 If the LDAP file exists, then ddlgen uses it to search the server name. The interfaces file is not parsed, and the LDAP configuration file is parsed.

Separate *host_name* and *port_number* with a colon, without spaces before or after it.

Note You must use the -S option because ddlgen does not connect to a default server.

Interfaces files   -I – specifies the interfaces file name, and corresponds to *$SYBASE/interfaces* for UNIX, and *%SYBASE%\ini\sql.ini* for Windows. Use this optional parameter with -S.

Indexes   You can now run the ddlgen utility for all indexes of all tables in a database in the following command:

```
ddlgen -Ulogin -Ppassword -Sserver:port -TI
   -Ndbname.%.%.%
```

For example, this generates DDL for all indexes for all tables in the pubs2 database:

```
ddlgen -Usa -P -SHARBOR:1955 -TI -Npubs2.%.%.%
```

8.3.3 sp_sproc_columns

There is a new column in the result set for the sp_sproc_columns catalog stored procedure called mode:

Column	Datatype	Description
mode	varchar(20)	The parameter mode information stored in syscolumns that contains: • *For SQL procedures* – in, out, or "return value". • *For SQLJ procedures (Java)* – in, out, inout, or "return value".

8.3.4 sqldbgr

Add the following to the description of the sqldbgr SQL debugger utility:

Note You do not have the ability to view sqldbgr version strings.

8.3.5 *dataserver* clarification

In the dataserver reference page in the *Utility Guide*, Example 2 is incorrect. It currently reads:

Example 2 rewrites a corrupt model database:

```
dataserver -d my_master_device -w model
```

The correct example is:

Example 2 rewrites a corrupt model database:

```
dataserver -d d_master -w model -s server_name
```

8.3.6 Omission from *sybmigrate*

The following information was omitted from the "sybmigrate" Chapter, in the *Utility Guide*.

sybmigrate requires allow resource limits be set to 0.

Note If metadata already exists on the target Adaptive Server, you cannot migrate server data.

SYBASE_JRE – defines the location of the Java runtime environment. This is generally set to *$SYBASE/shared-1_0/jre-1_3* in the Adaptive Server release area. This environment variable overrides JAVA_HOME.

SYBASE_JRE defaults to *$SYBASE/shared-1_0/jre-1_3*.

8.3.7 Utilities moved

The following three utilities have moved from *$SYBASE/$SYBASE_ASE/bin* to *$SYBASE/$SYBASE_OCS/bin*:

• certauth

• certpk12

• certreq

8.3.8 *bcp* clarification

In the section "bcp modes" in Chapter 3, "Using bcp to Transfer Data to and from Adaptive Server" in the *Utility Guide*, the definitions of bcp in were reversed and incorrectly stated as:

bcp in works in one of two modes:

• Fast bcp – logs each row insert that it makes, used for tables that have one or more indexes or triggers.

• Slow bcp – logs only page allocations, copying data into tables without indexes or triggers at the fastest speed possible.

The correct definitions are as follows:

bcp in works in one of two modes:

• Slow bcp – logs each row insert that it makes, used for tables that have one or more indexes or triggers.

• Fast bcp – logs only page allocations, copying data into tables without indexes or triggers at the fastest speed possible.

8.4 Transact-SQL User's Guide

In "Sorting Query results" in Chapter 3, the word "aggregates" has been dropped from this sentence:

"Adaptive Server does not allow subqueries, variables and constant expressions in the order by list." A successful example in the following section, order by and group by, uses the aggregate function avg(price) in an order by clause:

```
order by avg(price)
```

8.5 Reference Manual: Building Blocks

8.5.1 *str_replace*

The str_replace function now accepts NULL in the third parameter and treats it as an attempt to replace *string_expression2* with NULL, effectively turning str_replace into a "string cut" operation.

For example, the following returns "abcghijklm":

```
str_replace("abcdefghijklm", "def", NULL)
```

8.5.2 @@*version_as_integer* update

In Chapter 3, "Global Variables" in *Reference Manual: Building Blocks*, the definition for @@version_as_integer states:

"Returns the version of the current release of Adaptive Server as an integer."

This information should read:

"Returns the number of the last upgrade version of the current release of Adaptive Server as an integer. For example, @@version_as_integer returns 12500 if you are running Adaptive Server version 12.5, 12.5.0.3, or 12.5.1."

8.5.3 *set_appcontext* update

In the reference page for set_appcontext in Chapter 2, "Transact-SQL Functions" in *Reference Manual: Building Blocks*, the parameter for *attribute_value* is incorrectly stated as being a char(2048). The correct datatype is char(30), and should appear as follows:

attribute_value – is a row that specifies and application attribute value. It is saved as the datatype char(30).

8.6 Reference Manual: Commands

8.6.1 where clause syntax

The following syntax is no longer applicable in the where clause.

where [not] *time_period1* overlaps *time_period2*

The following example in the where clause reference pages is also no longer applicable:

Example 9   Compares two time periods and determines whether they overlap each other. The first period begins March 16, 1994 and lasts for one month. The second period begins March 31, 1994 and lasts until December 31, 1994. The predicate returns a value of TRUE because the two periods have points in common:

```
where (date "1994-03-16", interval +"1" month) overlaps
(date "1994-03-31", date "1994-12-31")
```

8.6.2 *dbcc upgrade object* **has a new parameter** *"check"*

The following description of the dbcc check command should be included in *Reference Manual: Commands*.

Syntax

```
dbcc upgrade_object( {dbid | dbname},
{ compiled_object_name |
"view" | "procedure" | "default" |
"rule" | "default" | "trigger" },
[ "force" | "check" ] )
```

Keywords and options   check – checks syntax for the specified *compiled_object* in syscomments in the specified database. Does not raise errors on occurrences of select.

Comments

- check is used to detect syscomments text corruption which was caused by Adaptive Server defects that occurred before the upgrade. This syscomments text corruption is serious because it causes upgrade to fail.

- If any error is reported by dbcc *upgrade_object* with check option, you must drop and re-create the *compiled_object*.

8.6.3 *create index* **clarification**

The create index reference page in Chapter 1, "Commands" of *Reference Manual: Commands* incorrectly states that the max_rows_per_page and fillfactor parameters are exclusive.

"max_rows_per_page – max_rows_per_page and fillfactor are mutually exclusive. Unlike fillfactor, the max_rows_per_page value is maintained until it is changed with sp_chgattribute."

It should read:

max_rows_per_page – limits the number of rows on data pages and the leaf level pages of indexes. Unlike fillfactor, the max_rows_per_page value is maintained until it is changed with sp_chgattribute.

8.6.4 *bcp* **reference page clarification**

In the bcp reference page in Chapter 8, "Utility Commands Reference" of the *Reference Manual: Commands*, the description of the -b batchsize parameter has been clarified. It used to read:

"-b batchsize is the number of rows per batch of data copied (default is to copy all the rows in one batch)."

The text now reads:

"-b batchsize is the number of rows per batch of data copied. By default, bcp in copies n rows in one batch, where n is equal to the batch size."

8.6.5 *set* command option *explicit_transaction_require* not supported

The set command option explicit_transaction_require is not currently supported, and should not appear in the *Adaptive Server Reference Guide* version 12.5.1.

8.6.6 New *set* parameters *proc_output_params* and *set proc_return_status*

The following new parameters should be included in the set command reference section of *Reference Manual: Commands*.

Parameters

- proc_output_params – controls sending of output parameters that a stored procedure generates back to the client. set proc_output_params off suppresses sending the output parameters back to the client. The default for this parameter is on.

- proc_return_status – controls sending of a return status TDS token back to the client. set proc_return_status off suppresses sending the return status token to the client, and isql client does not display the (return status = 0) message. The default for this parameter is on.

> **Warning!** If the client application that executes a procedure relies on the success or failure of the procedure based on the return status, then do not use the set proc_return_status off option.

Example 1

Suppresses the output of both parameters and the return status TDS token:

```
1> set proc_output_params OFF
2> go

1> set proc_return_status OFF
2> go

1> declare @x int
2> select @x = 2
3> exec sp_pout @x output
4> print "Value of @x returned from sproc is: %1!", @x
5> go
```

```
(1 row affected)
Value of @x returned from sproc is: 3
(1 row affected)
```

In addition, you can also suppress the lines reporting the number of rows affected to generate output with no extra messages using the set nocount on option before running this batch.

Example 2

Suppresses the output of parameter information:

```
1> create procedure sp_pout (@x int output) as select
@x = @x + 1
2> go

1> set proc_output_params off
2> go
1> declare @x int
2> select @x = 1
3> exec sp_pout @x output
4> print "Value of @x returned from sproc is: %1!", @x
5> go

(1 row affected)
(return status = 0)

Value of @x returned from sproc is: 1
```

If you do not perform set proc_output_params off, the output after (return status = 0) includes the following:

```
Return parameters:

 ----------
          2
```

8.7 Reference Manual: Procedures

8.7.1 sp_monitorconfig

There are numerous changes and corrections to sp_monitorconfig. Replace the reference pages in *Reference Manual: Procedures* for sp_monitorconfig with this text.

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, in which to save the stored procedure results. This is an optional parameter.

                               • "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
------------------------------ ------------ ----------
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
```
                               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, you need to open an additional database. 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:

```
create table sample_table(
    Name varchar(35), Num_free int,
    Num_active int, Pct_act char(6),
    Max_Used int, Reuse_cnt int,
    Date varchar(30))
```

The name of the table created becomes the second parameter of sp_monitorconfig:

```
sp_monitorconfig "number of alarms", sample_table

--------------
(return status = 0)

select * from sample_table

---------------
Name             Num_free Num_active Pct_act Max_Used Reuse_cnt  Date
------------ -------- ---------- ------- -------- --------- -------
number of alarms   29    11         27.50   11        -1 Dec 4 2002 10:20AM
(1 row affected)


sp_monitorconfig "number of devices", sample_table

--------------------
(return status = 0)

select * from sample_table

-----------------
Name            Num_free Num_active Pct_act MaxUsed Reuse_cnt  Date
------------ --------- ---------- ------- ------- -------- -------
number of alarms  29       11        27.50   11       -1 Dec 4 2002 10:20AM
number of devices 9        1         10.00   1        -1 Dec 4 2002 10:20AM
(2 rows affected)
```

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
    audit queue size
    heap memory per user
    max cis remote connection
    max memory
    max number network listeners
    memory per worker process
    max online engines
    number of alarms
    number of aux scan descriptors
    number of devices
    number of dtx participants
    number of java sockets
    number of large i/o buffers
    number of locks
    number of mailboxes
    number of messages
    number of open databases
    number of open indexes
    number of open objects
    number of open partitions
    number of remote connections
    number of remote logins
    number of remote sites
    number of sort buffers
    number of user connections

number of worker processes
partition groups
permission cache entries
procedure cache size
size of global fixed heap
size of process object heap
size of shared class heap
size of unilib cache
txn to pss ratio

- 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 you need to reuse descriptors, 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 sy_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.

See also   **System procedures**   sp_configure, sp_countmetadata, sp_helpconfig, sp_helpconstraint, sp_sysmon

8.7.2 sp_autoformat

sp_autoformat is a stored procedure introduced in Adaptive Server version 12.5.1.

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 @fulltabname [, @selectlist , @whereclause , @orderby]

Parameters   @fulltabname

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.

@selectlist

specifies the comma-separated list of columns selected in the result set. Columns in the table can be renamed using the *<name>* = *<column>* notation. See examples. If @selectlist is not provided, all columns in the table specified are output in column ID order.

@whereclause

is a search predicate, specified as a where clause, that filters out rows from the table being selected.

@orderby

is an optional order by clause that specifies the order in which the output result set is presented.

Examples   **Example 1**   Returns a result set from a select statement similar to `select id, colid, name from syscolumns where id = 3`, where the character columns are autoformatted:

```
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 To generate 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
- 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 @fulltabname 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, you must:

  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.

8.7.3 sp_helpdb

The sp_helpdb stored procedure now includes the order parameter. Add the following to the reference page for sp_helpdb in *Reference Manual: Procedures*. The full syntax of sp_helpdb is:

> sp_helpdb [*dbname*, *order*]

The default order of the output is by lstart, which is the order in which the databases were created or altered. Use device_name along with *dbname* to display the output of sp_helpdb ordered by device_name.

Example   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
```

8.8 System Administration Guide

8.8.1 Table information incomplete

In the *System Administration Guide*, Chapter 12, "Auditing," Table 12-6, Values in event and extrainfo columns, is incomplete.

Table 12-6 should include these lines for the create index entry under:

"Other Information: Index name"

8.8.2 Size information incorrect in procedure

In the *System Administration Guide*, Chapter 26, "Checking Database Consistency," some size information is incorrect in the "Creating the dbccdb database" procedure. The procedure should read:

```
* In step 1, output:
Recommended size for dbccdb is 23MB (data = 21MB, log
= 2MB)
* In step 3, user input:
...
size = "4096"
...
size="1024"
* In step 7 user input:
use dbccdb|
go|
sp_dbcc_createws dbccdb, scanseg, scan_pubs2, scan,
"64K"|
sp_dbccvreatews dbccdb, textseg, text_pubs2, text,
"64K"|
```

8.9 Performance and Tuning Guide

8.9.1 OAM-scans on DOL tables

OAM-pages are used when performing a table scan on a DOL-table. These OAM-pages refer to allocation-units, which must then be scanned to find the extents on the pages for the table being scanned. When the scan is started, a list of pages is generated the information in the allocation-page. Any newly allocated pages produced by another process in this allocation-unit are not seen by the scanning process as they were not allocated when the scan began. This is due to the way DOL-tables are implemented. If you want to include the newly allocated pages, perform one of the following:

- Use isolation level 3 type of scans (select with holdlock)

- Add an index to the DOL-table which can be used to prevent a table-scan

- Convert the DOL-table to an APL-table

8.9.2 Multiple temporary databases

The information on multiple tempdbs was inadvertently included in the *Performance and Tuning Guide*. This information is being moved to the *System Administration Guide* in the next update.

Login bindings to multiple tempdbs

In prior versions only a user with the "sa" role could be bound to a tempdb.

As of this version of Adaptive Server, any user can also be bound to an application at the time of login. For example:

If there is a binding for login "user1" and for application isql, when "user1" logs in with application isql the "user1" binding determines the tempdb assigned to the session, not the isql binding.

8.9.3 Optimizer and Abstract Plans

Correction: In Chapter 11, "Multiple Temporary Databases," the "Unchanged yet notable procedures" section noted the following for the sp_changedowner stored procedure:

> You cannot map system databases, including tempdb to a default location. However, you can map user-created temporary databases.

This information is incorrect.

8.10 XA Interface Integration Guide for CICS, Encina, and TUXEDO

In Chapter 4, "Application Programming Guidelines in the *XA Interface Integration Guide for CICS, Encina, and TUXEDO*, the introductory paragraph for the section, "Tightly coupled transactions," has been revised. The new text is emphasized.

8.10.1 Tightly coupled transactions

The XA environment treats each thread or process that works on a transaction as a transaction branch. Each transaction branch is assigned a different xid and works independently of the other branches. However, all branches are committed or rolled back as a unit.

Note This applies to MTS/COM+ environments only, and only if you are using ctlib-based drivers that are older than version 3.6.

9. Technical support

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 have any questions about this installation or if you need assistance during the installation process, ask the designated person to contact Sybase Technical Support or the Sybase subsidiary in your area.

10. Other sources of information

Use the Sybase Getting Started CD, the Sybase Technical Library CD, and the Technical Library 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 Technical Library CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader (downloadable at no charge from the Adobe Web site, using a link provided on the CD).

*   The Technical Library CD contains product manuals and is included with your software.

    Refer to the *Technical Library Installation Guide* in your documentation package for instructions on installing and starting the Technical Library.

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

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

10.1 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   Select Products from the navigation bar on the left.

3   Select a product name from the product list and click Go.

4   Select the Certification Report filter, specify a time frame, and click Go.

5   Click a Certification Report title to display the report.

❖ **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.

10.2 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.