

SYBASE®

Reference Manual

Replication Agent™

15.1

[Linux, Microsoft Windows, and UNIX]

DOCUMENT ID: DC00268-01-1510-01

LAST REVISED: February 2008

Copyright © 1998-2008 by Sybase, Inc. All rights reserved.

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

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

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

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

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

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

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

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

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

Contents

About This Book	vii
-----------------------	-----

CHAPTER 1	Command Reference	1
	Command reference table	1
	log_system_name	6
	pdb_capabilities	7
	pdb_date	7
	pdb_execute_sql	8
	pdb_gen_id	9
	pdb_get_columns	10
	pdb_get_databases	12
	pdb_get_primary_keys	12
	pdb_get_procedure_parms	13
	pdb_get_procedures	15
	pdb_get_sql_database	17
	pdb_get_tables	18
	pdb_ownerfilter	19
	pdb_set_sql_database	21
	pdb_setrepcol	22
	pdb_setrepcddl	27
	pdb_setrepproc	28
	pdb_setrepseq	39
	pdb_setreptable	41
	pdb_skip_op	52
	pdb_truncate_xlog	54
	pdb_version	56
	pdb_xlog	56
	quiesce	61
	ra_config	62
	ra_date	64
	ra_devicepath	65
	ra_dump	65
	ra_help	66
	ra_helpparticle	67

ra_helpdb	69
ra_helpdevice	69
ra_helpfield	71
ra_helplocator	73
ra_helpuser	74
ra_locator	75
ra_maintid	77
ra_marker	78
ra_migrate	79
ra_set_login	80
ra_statistics	80
ra_status	86
ra_truncatearticles	87
ra_truncateusers	88
ra_updatedevices	89
ra_version	91
ra_version_all	91
rasd_backup	92
rasd_restore	93
resume	94
rs_create_repdef	95
rs_drop_repdef	97
rs_ticket	98
shutdown	100
suspend	101
test_connection	102
trace	104

CHAPTER 2	Configuration Parameters	109
	Configuration parameter overview	109
	Replication Agent configuration file	109
	Changing configuration parameters	110
	Copying a Replication Agent configuration	111
	Configuration parameter reference	111
	admin_port	117
	asm_password	117
	asm_tns_connection	118
	asm_tns_filename	118
	asm_username	119
	column_compression	120
	compress_ltl_syntax	120
	connect_to_rs	121
	ddl_password	121
	ddl_username	122

dump_batch_timeout.....	123
filter_maint_userid.....	123
function_password.....	124
function_username.....	124
log_backup_files.....	125
log_directory.....	125
log_trace_verbos.....	126
log_wrap.....	127
lr_n.....	127
lri_batch_mode.....	129
lri_max_buffer_size.....	130
lri_update_trunc_point.....	131
lri_batch_size.....	131
lri_big_endian_unitext.....	132
lri_character_case.....	132
lri_origin_time_required.....	133
lri_send_only_primary_keys.....	134
lri_admin_pw.....	135
lri_admin_user.....	135
max_ops_per_scan.....	136
pdb_archive_path.....	136
pdb_archive_remove.....	137
pdb_auto_create_repdefs.....	138
pdb_automark_tables.....	140
pdb_auto_run_scripts.....	141
pdb_convert_datetime.....	142
pdb_dflt_column_repl.....	143
pdb_dflt_object_repl.....	144
pdb_include_archives.....	145
pdb_support_large_identifier.....	145
pdb_timezone_file.....	146
pdb_xlog_device.....	146
pdb_xlog_prefix.....	147
pdb_xlog_prefix_chars.....	147
pds_connection_type.....	148
pds_dac_port_number.....	150
pds_database_name.....	150
pds_datasource_name.....	151
pds_host_name.....	151
pds_integrated_security.....	151
pds_password.....	152
pds_port_number.....	152
pds_retry_count.....	153
pds_retry_timeout.....	153

pds_server_name..... 153
pds_tns_connection 154
pds_tns_filename 154
pds_username..... 155
ra_retry_count 155
ra_retry_timeout 156
rasd_backup_dir..... 156
rasd_database..... 157
rasd_mirror_tran_log..... 158
rasd_trace_log_dir..... 158
rasd_tran_log 159
rasd_tran_log_mirror..... 160
rs_charset..... 161
rs_host_name..... 162
rs_packet_size 163
rs_password 163
rs_port_number 164
rs_retry_count 164
rs_retry_timeout 164
rs_source_db..... 165
rs_source_ds..... 165
rs_username 166
rssd_charset..... 166
rssd_database_name..... 167
rssd_host_name..... 167
rssd_password 168
rssd_port_number 168
rssd_username..... 169
scan_sleep_increment 169
scan_sleep_max 170
skip_ltl_errors 170
structured_tokens..... 171
truncation_interval..... 171
truncation_type..... 172
use_rssd..... 173

Glossary 175

Index 183

About This Book

Sybase® Replication Agent™ version 15.1 extends the capabilities of Replication Server® to support the following non-Sybase primary data servers in a Sybase replication system:

- DB2 Universal Database (on UNIX and Microsoft Windows platforms)
- Microsoft SQL Server
- Oracle Database Server

Audience

This book is for anyone who needs to manage or administer a Sybase replication system with non-Sybase primary databases, or administer the non-Sybase primary databases in a Sybase replication system. This may include:

- Database Administrators
- Network Administrators
- System Administrators

How to use this book

Use the Replication Agent *Reference Manual* to look up detailed information about Replication Agent commands and configuration parameters.

This book is organized as follows:

Chapter 1, “Command Reference,” describes all Replication Agent commands, including syntax, options, examples, and detailed command usage notes.

Chapter 2, “Configuration Parameters,” describes the Replication Agent configuration file, and provides a configuration parameter reference.

Related documents

Replication Agent Refer to the following documents to learn more about the Replication Agent:

- Replication Agent *Administration Guide* – for an overview of the Replication Agent, information about configuring and administering Replication Agent instances, and information about configuring the other components in a Sybase replication system.

-
- Replication Agent *Primary Database Guide* – for detailed, database-specific information about each non-Sybase database that is supported by the Replication Agent.
 - Replication Agent *Installation Guide* – for information about installing the Replication Agent software.
 - Replication Agent *Release Bulletin* – for last-minute information that was too late to be included in the books.

Note A more recent version of the Replication Agent *Release Bulletin* may be available on the World Wide Web. To check for critical product or document information that was added after the release of the product CD, use the Sybase Product Manuals Web site.

Replication Server Refer to the following documents for more information about transaction replication systems and the Replication Server software:

- Replication Server *Design Guide* – for an introduction to basic transaction replication concepts and Sybase replication technology.
- Replication Server *Heterogeneous Replication Guide* – for detailed information about configuring Replication Server and implementing a Sybase replication system with non-Sybase databases.

Primary data server Make sure that you have appropriate documentation for the non-Sybase primary data server that you use with the Sybase replication system.

Java environment The Replication Agent requires a Java Runtime Environment (JRE) on the Replication Agent host machine.

- The Replication Agent release bulletin contains the most up-to-date information about Java and JRE requirements.
- Java documentation available from your operating system vendor describes how to set up and manage the Java environment on your platform.

Other sources of information

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

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

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

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

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

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

Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ Finding the latest information on product certifications

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

❖ Finding the latest information on component certifications

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

-
- 3 Select Search to display the availability and certification report for the selection.

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

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

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

Sybase EBFs and software maintenance

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

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

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

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

Style conventions

The following style conventions are used in this book:

- In a sample screen display, commands that you should enter exactly as shown appear like this:

```
pdb_xlog
```

- In the regular text of this document, variables or user-supplied words appear like this:

Specify the *value* option to change the setting of the configuration parameter.

- In a sample screen display, variables or words that you should replace with the appropriate value for your site appear like this:

```
resume connection to pds.pdb
```

where *pds* and *pdb* are the variables you should replace.

- In the regular text of this document, names of programs, utilities, procedures, and commands appear like this:

Use the `pdb_xlog` command to initialize the primary database.

- In the regular text of this document, names of database objects (tables, columns, stored procedures, etc.) appear like this:

Check the price column in the widgets table.

- In the regular text of this document, names of datatypes appear like this:

Use the date or datetime datatype.

- In the regular text of this document, names of files and directories appear like this:

Log files are located in the `$SYBASE/RAX-15_1/inst_name/log` directory.

Syntax conventions

The following syntax conventions are used in this book:

Table 1: Syntax conventions

Key	Definition
{ }	Curly braces indicate that you must choose at least one of the enclosed options. Do not type the braces when you enter the command.
[]	Brackets mean that choosing one or more of the enclosed options is optional. Do not type the brackets when you enter the command.
()	Parentheses are to be typed as part of the command.
	The vertical bar means you can select only one of the options shown.
,	The comma means you can choose as many of the options shown as you like, separating your choices with commas that you type as part of the command.

In reference sections of this document, statements that show the syntax of commands appear like this:

```
ra_config [param [, value]]
```

The words *param* and *value* in the syntax are variables or user-supplied words.

Character case conventions

The following character case conventions are used in this book:

- All command syntax and command examples are shown in lowercase. However, Replication Agent command names are *not* case sensitive. For example, RA_CONFIG, Ra_Config, and ra_config are equivalent.
- Names of configuration parameters are case sensitive. For example, Scan_Sleep_Max is not the same as scan_sleep_max, and the former would be interpreted as an invalid parameter name.
- Database object names are *not* case sensitive in Replication Agent commands. However, if you need to use a mixed-case object name in a Replication Agent command (to match a mixed-case object name in the primary database), you must delimit the object name with quote characters. For example:

```
pdb_get_tables "TableName"
```

Accessibility features

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

Replication Agent version 15.1 and the HTML documentation have been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

The online help for this product is also provided in HTML, which you can navigate using a screen reader.

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

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

For a Section 508 compliance statement for Replication Agent version 15.1, see Sybase Accessibility at http://www.sybase.com/detail_list?id=52484.

If you need help

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



This chapter describes the Replication Agent commands including targets, syntax, options, examples, and command usage.

Command reference table

In Table 1-1, the targets column indicates when the command is used for “All” targets or specific targets; Oracle, Microsoft SQL Server (MSSQL), or DB2 UDB (UDB).

Table 1-1: Replication Agent commands

Command name	Target	Description	Page
log_system_name	All	Returns the path to the Replication Agent system log file.	6
pdb_capabilities	All	Returns a list of the Replication Agent capabilities.	7
pdb_date	All	Returns the current date and time from the primary data server.	7
pdb_execute_sql	All	Executes the specified SQL statement in the current database.	8
pdb_gen_id	All	Returns the current value of the database generation ID; updates the value of the database generation ID.	9
pdb_get_columns	All	Returns a list of all the columns in the specified table.	10
pdb_get_databases	All	Returns a list of all the databases in the primary data server.	12

Command name	Target	Description	Page
pdb_get_primary_keys	All	Returns a list of all the columns that make up the primary keys in the specified table.	12
pdb_get_procedure_parms	Oracle MSSQL	Returns a list of the parameters for the specified procedure.	13
pdb_get_procedures	Oracle MSSQL	Returns a list of all the procedures in the specified database.	15
pdb_get_sql_database	All	Returns the name of the database specified for SQL statement execution.	17
pdb_get_tables	All	Returns a list of all the tables in the specified database.	18
pdb_ownerfilter	Oracle MSSQL	Returns a list of owners whose objects will be filtered for initialization; adds and removes owners to the list.	19
pdb_set_sql_database	All	Specifies the database to be used for SQL statement execution.	21
pdb_setrepcol	All	Returns replication marking status; enables or disables replication for all marked columns or a specified column.	22
pdb_setrepddl	Oracle MSSQL	Returns DDL replication status; enables or disables replication for DDL statements.	27
pdb_setrepproc	Oracle MSSQL	Changes and reports stored procedure marking status.	28
pdb_setrepseq	Oracle	Changes and reports sequence replication marking status.	39
pdb_setreptable	All	Changes and reports table replication marking status.	41

Command name	Target	Description	Page
pdb_skip_op	Oracle MSSQL	Returns, adds, or removes record identifiers from a list of records to skip in processing.	52
pdb_truncate_xlog	All	Truncates the Replication Agent transaction log.	54
pdb_version	All	Returns the type and version of the primary data server.	56
pdb_xlog	All	Returns names of transaction log objects; creates transaction log base objects in the primary database; removes transaction log base objects from the primary database.	56
quiesce	All	Stops current Log Reader activity after all data remaining in the transaction log and Replication Agent internal queues is processed and puts Replication Agent in <i>Admin</i> state.	61
ra_config	All	Returns help information for configuration parameters; sets the value of a configuration parameter.	62
ra_date	All	Returns the current date and time from the Replication Agent server.	64
ra_devicepath	Oracle MSSQL	Changes the disk device path for a log device recorded in the RASD.	65
ra_dump	All	Records a dump marker in the primary database transaction log.	65
ra_help	All	Returns help information for Replication Agent commands.	66
ra_helparticle	Oracle MSSQL	Returns information about articles from the RASD.	67

Command name	Target	Description	Page
ra_helpdb	Oracle MSSQL	Returns information about the primary database from the RASD.	69
ra_helpdevice	Oracle MSSQL	Returns information about primary database log devices from the RASD.	69
ra_helpfield	Oracle MSSQL	Returns information about fields (columns in tables, or input parameters in stored procedures) from the RASD.	71
ra_helplocator	Oracle MSSQL	Returns LTM locator field values.	73
ra_helpuser	Oracle MSSQL	Returns information about primary database users from the RASD.	74
ra_locator	All	Returns and changes the current value of the LTM Locator stored by Replication Agent.	75
ra_maintid	All	Returns the Maintenance User for the Replication Agent connection.	77
ra_marker	All	Records a marker in the primary database transaction log.	78
ra_migrate	All	Performs migration tasks (as necessary) between releases of Replication Agent.	79
ra_set_login	All	Sets the Replication Agent admin user login and password.	80
ra_statistics	All	Returns statistics for either a specified Replication Agent component or all components, and resets statistics for all components.	80
ra_status	All	Returns the current Replication Agent state.	86

Command name	Target	Description	Page
ra_truncatearticles	Oracle MSSQL	Truncates older versions of primary database articles in the system data repository in the RASD.	87
ra_truncateusers	Oracle MSSQL	Truncates older versions of primary database users in the system data repository in the RASD.	88
ra_updatedevices	Oracle MSSQL	Updates the log device repository in the RASD.	89
ra_version	All	Returns the Replication Agent version.	91
ra_version_all	All	Returns Replication Agent, primary data server, Replication Server, and communications driver versions.	91
rasd_backup	Oracle MSSQL	Backs up the Replication Agent System Database (RASD).	92
rasd_restore	Oracle MSSQL	Restores the Replication Agent System Database (RASD).	93
resume	All	Starts replication for the current active log and puts Replication Agent in <i>Replicating</i> state.	94
rs_create_repdef	Oracle MSSQL	Creates a replication definition at Replication Server for a marked table and procedure, or for all marked tables and procedures.	95
rs_drop_repdef	Oracle MSSQL	A replication definition for a table is dropped at the Replication Server.	97
rs_ticket	All	Supports Replication Server rs_ticket processing by placing an rs_ticket marker in the Primary database transaction log.	98

Command name	Target	Description	Page
shutdown	All	Shuts down Replication Agent.	100
suspend	All	Immediately stops all Log Reader activity, drops connections, and puts Replication Agent in <i>Admin</i> state.	101
test_connection	All	Tests Replication Agent connectivity.	102
trace	All	Returns current trace flag settings; changes a specified trace flag.	104

The remaining sections in this chapter describe each Replication Agent command in detail.

log_system_name

Description	Returns the full path of the Replication Agent instance log file.
Syntax	log_system_name
Usage	<ul style="list-style-type: none">When you create a Replication Agent instance, a log directory is created automatically as part of the instance directory structure. The default value of the log_directory parameter points to that directory.The default path of the Replication Agent log directory is: <pre>%SYBASE%\RAX-15_1\inst_name\log\</pre>where:<ul style="list-style-type: none"><code>%SYBASE%</code> is the Replication Agent installation directory.<code>inst_name</code> is the name of the Replication Agent instance.If you specify a valid directory path as the value of the log_directory parameter, the Replication Agent instance places its system log file in the directory you specify.

If you change the value of the `log_directory` parameter with the `ra_config` command, the new value is recorded in the configuration file immediately, but you must shut down and restart the Replication Agent instance to make the new value take effect.

See the `log_directory` parameter in Chapter 2, “Configuration Parameters,” for more information.

- The `log_system_name` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `ra_config`, `trace`

pdb_capabilities

Description	Returns a list of Replication Agent capabilities, which is used by the replication management tools.
Syntax	<code>pdb_capabilities</code>
Usage	<ul style="list-style-type: none"> • When <code>pdb_capabilities</code> is invoked, it returns a list of the capabilities of the Replication Agent instance. • The purpose of the <code>pdb_capabilities</code> command is to support the replication management tools. • The <code>pdb_capabilities</code> command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.

pdb_date

Description	Returns the current date and time from the primary data server.
Syntax	<code>pdb_date</code>
Usage	<ul style="list-style-type: none"> • When <code>pdb_date</code> is invoked, it returns the current date and time from the primary data server in the form of a Sybase datetime datatype, as follows:

```
Current PDB Date
-----
          Jan 12 2008 12:09:47.310
(1 row affected)
```

- The `pdb_date` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `ra_date`

pdb_execute_sql

Description Executes a SQL statement in the current database at the primary data server.

Syntax `pdb_execute_sql statement`

Parameters *statement*

A string in the form of a SQL statement enclosed in double quotes.

Usage

- The Replication Agent instance executes the specified SQL statement against the “current” database.

The current database is either:

- The *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter, or
- The database specified in the `pdb_set_sql_database` command (to which the Replication Agent instance is currently connected).
- To set or change the current database, use the `pdb_set_sql_database` command.
- To find the name of the current database, use the `pdb_get_sql_database` command.

Note If the `pdb_set_sql_database` command has not been invoked to set or change the current database, the `pdb_get_sql_database` command returns the name of the default current database.

- The SQL statement specified in the `pdb_execute_sql` command must be a single SQL command enclosed in double quotes. For example:

```
pdb_execute_sql "select * from Authors"
```

The string is passed directly to the database for execution. No command to terminate is required and no syntax or other validation is performed.

- Any results returned from execution of the SQL statement are passed to the Replication Agent administrative client, by way of the Replication Agent administration port.
- The `pdb_execute_sql` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `pdb_get_sql_database`, `pdb_set_sql_database`

pdb_gen_id

Description	Returns the current value of the database generation ID, or updates the value of the database generation ID.
Syntax	<code>pdb_gen_id [number]</code>
Parameters	<i>number</i> The value of the new database generation ID to be used when the database generation ID is updated. It must be a number between 0 and 32767.
Examples	<p>Example 1</p> <pre>pdb_gen_id</pre> <p>This command returns the current value of the database generation ID.</p> <p>Example 2</p> <pre>pdb_gen_id 10</pre> <p>This command updates the database generation ID to the value 10.</p>
Usage	<ul style="list-style-type: none"> • When <code>pdb_gen_id</code> is invoked with no option, it returns the current value of the database generation ID stored in the Replication Agent transaction log system table (DB2 UDB) or in the RASD (Oracle or Microsoft SQL Server). • When <code>pdb_gen_id</code> is invoked with the <code>number</code> option, it updates the value of the database generation ID in the Replication Agent transaction log system table (DB2 UDB) or in the RASD (Oracle or Microsoft SQL Server). Changing the database generation ID takes effect immediately. • The database generation ID is the first 2 bytes of the origin queue ID. The database generation ID is used by Replication Server to support recovery operations, which may require the Replication Agent to re-send transactions.

During recovery, if the Replication Agent must re-send operations that the Replication Server has already processed, you can change the database generation ID to prevent the Replication Server from recognizing the operations as already processed.

- For more information about the origin queue ID, see `ra_helplocator` on page 73, or refer to the chapter for your specific primary data server in the Replication Agent *Primary Database Guide*.
- If the Replication Agent transaction log (DB2 UDB) or the RASD (Oracle or Microsoft SQL Server) does not exist, the `pdb_gen_id` command returns an error.
- The `pdb_gen_id` command with no parameters is valid when the Replication Agent instance is in the *Admin* state.

See also `ra_locator`, `pdb_truncate_xlog`

pdb_get_columns

Description Returns a list of columns in tables in the current database at the primary data server.

Syntax `pdb_get_columns [ownername, tablename[, colname]]`

Parameters *ownername*

The user name of the owner of the table specified in the *tablename* option. This option can be delimited with quote characters to specify character case.

tablename

The name of the table in the current database for which information is returned. This option can be delimited with quote characters to specify character case.

colname

The name of the column for which information is returned. This option can be delimited with quote characters to specify character case.

Examples

Example 1

```
pdb_get_columns
```

This command returns a list of all of the columns in all of the user tables in the current database.

Example 2


```
pdb_get_columns bob, authors
```

This command returns a list of all of the columns in the table `authors`, owned by the user “bob” in the current database.

Example 3

```
pdb_get_columns bob, authors, au_fname
```

This command returns information about the column `au_fname` in the table `authors`, owned by the user “bob” in the current database.

Usage

- When `pdb_get_columns` is invoked with no option, it returns a result set that lists all of the columns in all of the user tables in the current database.
- When `pdb_get_columns` is invoked with the *ownername* and *tablename* options, it returns a result set that lists all of the columns in the specified table with the specified owner in the current database.
- When `pdb_get_columns` is invoked with the *ownername*, *tablename*, and *colname* options, it returns a result set with information about the specified column in the specified table with the specified owner in the current database.
- The `pdb_get_columns` command accepts the % wildcard character in the *ownername*, *tablename*, and *colname* options.
- The current database is either:
 - The *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter, or
 - The database specified in the `pdb_set_sql_database` command (to which the Replication Agent instance is currently connected).
- To set or change the current database, use the `pdb_set_sql_database` command.

Note If the `pdb_set_sql_database` command has not been invoked to set or change the current database, the `pdb_get_columns` command returns information from the current database.

- To find the name of the current database, use the `pdb_get_sql_database` command.
- The `pdb_get_columns` command returns 0 rows if the specified table (with the specified owner) does not exist in the current database or if the specified column does not exist in the specified table.

- The `pdb_get_columns` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `pdb_get_databases`, `pdb_get_primary_keys`, `pdb_get_procedure_parms`, `pdb_get_procedures`, `pdb_get_tables`

pdb_get_databases

Description Returns a list of all user databases in the primary data server.

Note The Oracle data server does not support multiple user databases. The `pdb_get_databases` command returns the name of the database instance.

Syntax `pdb_get_databases`

Usage

- When `pdb_get_databases` is invoked, it returns a result set that lists all of the user databases in the primary data server.

Note System databases may or may not be returned by some primary data servers. See the chapter for your specific primary data server in the Replication Agent *Primary Database Guide* for more information.

- The `pdb_get_databases` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `pdb_get_columns`, `pdb_get_primary_keys`, `pdb_get_procedure_parms`, `pdb_get_procedures`, `pdb_get_tables`

pdb_get_primary_keys

Description Returns a list of primary key columns in a specified table in the current database at the primary data server.

Syntax `pdb_get_primary_keys ownername, tablename`

Parameters *ownername*

The user name of the owner of the table specified in *tablename*. This option can be delimited with quote characters to specify character case.

tablename

The name of the table in the current database for which primary key column information is returned. This option can be delimited with quote characters to specify character case.

Usage

- When `pdb_get_primary_keys` is invoked, it returns a result set that lists all of the columns that are defined as primary keys in the specified table with the specified owner in the current database.
- The `pdb_get_primary_keys` command accepts the % wildcard character in the *ownername* option, but not in the *tablename* option.
- The current database is either:
 - The *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter, or
 - The database specified in the `pdb_set_sql_database` command to which the Replication Agent instance is currently connected. (This is not valid for Oracle.)
- To set or change the current database, use the `pdb_set_sql_database` command.

Note In Oracle, you cannot change the current database.

- To find the name of the current database, use the `pdb_get_sql_database` command.
- The `pdb_get_primary_keys` command returns 0 rows if the specified table with the specified owner does not exist in the current database.
- The `pdb_get_primary_keys` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`pdb_get_columns`, `pdb_get_databases`, `pdb_get_procedure_parms`, `pdb_get_procedures`, `pdb_get_tables`

pdb_get_procedure_parms

Description

Note This command is available only for Oracle and Microsoft SQL Server.

Returns a list of input parameters for procedures in the current database at the primary data server.

Syntax `pdb_get_procedure_parms [ownername, procname [, paramname]]`

Parameters *ownername*

The user name of the owner of the procedure specified in *procname*. This option can be delimited with quote characters to specify character case.

procname

The name of the procedure in the current database for which information is returned. This option can be delimited with quote characters to specify character case.

paramname

The name of the input parameter for which information is returned. This option can be delimited with quote characters to specify character case.

Examples

Example 1

```
pdb_get_procedure_parms
```

This command returns a list of all of the input parameters for all of the procedures in the current database.

Example 2

```
pdb_get_procedure_parms bob, sp_foo
```

This command returns a list of all of the input parameters for the procedure named `sp_foo`, owned by the user “bob” in the current database.

Example 3

```
pdb_get_procedure_parms bob, sp_foo, foo_count
```

This command returns information about the input parameter `foo_count` for the procedure `sp_foo`, owned by the user “bob” in the current database.

Usage

- When `pdb_get_procedure_parms` is invoked with no option, it returns a result set that lists all of the input parameters for all the procedures in the current database.
- When `pdb_get_procedure_parms` is invoked with the *ownername* and *procname* options, it returns a result set that lists all of the input parameters for the specified procedure with the specified owner in the current database.

- When `pdb_get_procedure_parms` is invoked with the *ownername*, *procname*, and *paramname* options, it returns a result set with information about the specified input parameter for the specified procedure with the specified owner in the current database.
- The `pdb_get_procedure_parms` command accepts the % wildcard character in both the *ownername* and *procname* options.
- The current database is either:
 - The *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter, or
 - The database specified in the `pdb_set_sql_database` command to which the Replication Agent instance is currently connected. (This is not valid for Oracle.)
- To set or change the current database, use the `pdb_set_sql_database` command.

Note In Oracle, you cannot change the current database.

- To find the name of the current database, use the `pdb_get_sql_database` command.
- The `pdb_get_procedure_parms` command returns 0 rows if the specified procedure (with the specified owner) does not exist in the current database.
- The `pdb_get_procedure_parms` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`pdb_get_columns`, `pdb_get_databases`, `pdb_get_primary_keys`,
`pdb_get_procedures`, `pdb_get_tables`

pdb_get_procedures

Description

Note This command is available only for Oracle and Microsoft SQL Server.

Returns a list of procedures in the current database at the primary data server.

Syntax

`pdb_get_procedures` [*ownername*, *procname*]

Parameters

ownername

The user name of the owner of the procedure specified in *procname*. This option can be delimited with quote characters to specify character case.

procname

The name of the procedure in the current database for which information is returned. This option can be delimited with quote characters to specify character case.

Examples

Example 1

```
pdb_get_procedures
```

This command returns a list of all of the procedures in the current database.

Example 2

```
pdb_get_procedures bob, sp_foo
```

This command returns information about the procedure named *sp_foo*, owned by the user “bob” in the current database.

Usage

- When *pdb_get_procedures* is invoked with no option, it returns a result set that lists all of the procedures in the current database.
- When *pdb_get_procedures* is invoked with the *ownername* and *procname* options, it returns a result set with information about the specified procedure with the specified owner in the current database.
- The *pdb_get_procedures* command accepts the % wildcard character in both the *ownername* and *procname* options.
- The current database is either:
 - The *default* current database, which is the primary database specified in the Replication Agent *pds_database_name* configuration parameter, or
 - The database specified in the *pdb_set_sql_database* command to which the Replication Agent instance is currently connected. (This is not valid for Oracle.)
- To set or change the current database, use the *pdb_set_sql_database* command.

Note In Oracle, you cannot change the current database.

- To find the name of the current database, use the *pdb_get_sql_database* command.

- The `pdb_get_procedures` command returns 0 rows if the specified procedure (with the specified owner) does not exist in the current database.
- The `pdb_get_procedures` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `pdb_get_columns`, `pdb_get_databases`, `pdb_get_primary_keys`, `pdb_get_procedure_parms`, `pdb_get_tables`

pdb_get_sql_database

Description Returns the name of the current database, if any.

Syntax `pdb_get_sql_database`

Usage

- When `pdb_get_sql_database` is invoked, it returns the name of the current database.
- If the `pdb_set_sql_database` command has not been invoked to set the current database, the `pdb_get_sql_database` command returns the default current database.
- The current database is either:
 - The *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter, or
 - The database specified in the `pdb_set_sql_database` command to which the Replication Agent instance is currently connected. (This is not valid for Oracle.)
- To set or change the current database, use the `pdb_set_sql_database` command.

Note In Oracle, you cannot change the current database.

- The `pdb_get_sql_database` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `pdb_execute_sql`, `pdb_set_sql_database`

pdb_get_tables

Description Returns a list of user tables in the current database at the primary data server.

Syntax `pdb_get_tables [ownername, tablename]`

Parameters *ownername*

The user name of the owner of the table specified in *tablename*. This option can be delimited with quote characters to specify character case.

tablename

The name of the table in the current database for which information is returned. This option can be delimited with quote characters to specify character case.

Examples

Example 1

```
pdb_get_tables
```

This command returns a list of all of the user tables in the current database.

Example 2

```
pdb_get_tables bob, authors
```

This command returns information about the table authors, owned by the user “bob” in the current database.

Usage

- When `pdb_get_tables` is invoked with no option, it returns a result set that lists all of the user tables in the current database.

Note System tables may or may not be returned by some primary data servers when the `pdb_get_tables` command is invoked.

- When `pdb_get_tables` is invoked with the *ownername* and *tablename* options, it returns a result set with information about the specified table with the specified owner in the current database.
- The `pdb_get_tables` command accepts the % wildcard character in the both the *ownername* and *tablename* options.
- The current database is either:
 - The *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter, or
 - The database specified in the `pdb_set_sql_database` command to which the Replication Agent instance is currently connected. (This is not valid for Oracle.)

- To set or change the current database, use the `pdb_set_sql_database` command.

Note In Oracle, you cannot change the current database.

- To find the name of the current database, use the `pdb_get_sql_database` command.
- The `pdb_get_tables` command returns 0 rows if the specified table (with the specified owner) does not exist in the current database.
- The `pdb_get_tables` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`pdb_get_columns`, `pdb_get_databases`, `pdb_get_primary_keys`,
`pdb_get_procedure_parms`, `pdb_get_procedures`

pdb_ownerfilter

Description

Note This command is available only for Oracle and Microsoft SQL Server.

Returns a list of the owners whose objects will be filtered for initialization; adds, removes owners to the list.

Syntax

To return a list of the owners whose objects will be filtered for initialization:

```
pdb_ownerfilter
```

To add or remove an owner whose objects will be filtered for initialization:

```
pdb_ownerfilter {add | remove}, owner
```

Parameters

add

The `add` keyword filters out any objects that are owned by the owner you specify. Any objects that are owned by this owner cannot be marked for initialization.

remove

The `remove` keyword removes the filter for the owner you specify. Any objects that are owned by this owner can be marked for initialization. You cannot remove the “SYS” owner.

owner

The name of the owner that is used for filtering.

The *owner* option can be delimited with quote characters to specify the character case.

If mixed case (uppercase and lowercase) is required, the name must be delimited. This parameter can be delimited with quotes to specify the character case. If mixed case is required, the name must be delimited. For example:

```
"Owner", "oWnEr"
```

Examples

Example 1

```
pdb_ownerfilter
```

This command returns a list of all owners whose objects will be filtered for initialization.

Example 2

```
pdb_ownerfilter add, SYSTEM
```

This command adds the “system” user to the list of owners whose objects will be filtered for replication.

Example 3

```
pdb_ownerfilter remove, SYSTEM
```

This command removes the “system” user from the list of owners whose objects will be filtered for replication.

Usage

- When `pdb_ownerfilter` is invoked, its function is determined by the keywords and options you specify.
- When multiple keywords and options are specified, each must be separated by a comma. Blank space before or after a comma is optional. For example:

```
pdb_ownerfilter add, system
```

- When `pdb_ownerfilter` is invoked with no keyword, it returns a list of users whose objects will be filtered.
- The `pdb_ownerfilter` command is valid only when the Replication Agent instance is in *Admin* state.
- For Oracle, you cannot remove the “SYS” owner.

- For Oracle, after initialization you can replicate any object with `pdb_setreptable` and `pdb_setrepproc`, *except* for the following objects which *cannot* be replicated at any time:
 - Objects that are owned by “SYS” owner.
 - Any system table whose name begins with V\$.
 - Any system procedure or package whose name begins with DBMS.

See also `pdb_setrepproc`, `pdb_setreptable`, `ra_config`

pdb_set_sql_database

Description	Sets the current database to be used for SQL statement execution.
Syntax	<code>pdb_set_sql_database database</code>
Parameters	<p><i>database</i></p> <p>The name of the database in the primary data server against which the Replication Agent can execute SQL statements (queries). This parameter can be delimited with quote characters to specify character case.</p>
Usage	<ul style="list-style-type: none"> • When <code>pdb_set_sql_database</code> is invoked, it sets the “current” database, in which the Replication Agent can execute SQL queries. <hr/> <p>Note The <code>pdb_set_sql_database</code> command has no affect for Oracle, but it is included to provide continuity with other Replication Agents that support database servers with multiple databases.</p> <hr/> <ul style="list-style-type: none"> • The Replication Agent does <i>not</i> validate the database name you specify with the <code>pdb_set_sql_database</code> command. <p>If you specify an invalid database name, no error is returned until one of the following Replication Agent commands is invoked:</p> <ul style="list-style-type: none"> • <code>pdb_execute_sql</code> • <code>pdb_get_columns</code> • <code>pdb_get_primary_keys</code> • <code>pdb_get_procedure_parms</code> • <code>pdb_get_procedures</code> • <code>pdb_get_tables</code>

- To find the name of the current database, use the `pdb_get_sql_database` command.

Note If the `pdb_set_sql_database` command has not been invoked to set the current database, the `pdb_get_sql_database` command returns the *default* current database, which is the primary database specified in the Replication Agent `pds_database_name` configuration parameter.

- The `pdb_set_sql_database` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`pdb_execute_sql`, `pdb_get_sql_database`

pdb_setrepcol

Description	Returns LOB column replication status; enables or disables replication for LOB columns within marked tables.
Syntax	<p>To return replication status of all columns in all tables or all columns in a specific table:</p> <pre> pdb_setrepcol [<i>tablename</i> enable disable]</pre> <p>To return replication status of a specific column in a specific table:</p> <pre> pdb_setrepcol <i>tablename</i>, <i>colname</i></pre> <p>To enable or disable all LOB columns in all marked tables:</p> <pre> pdb_setrepcol all, {enable disable [, force]}</pre> <p>To enable or disable replication for a specified LOB column:</p> <pre> pdb_setrepcol <i>tablename</i>, <i>colname</i>, {enable disable [, force]}</pre>
Parameters	<p><i>tablename</i></p> <p>The name of the user table in the primary database that contains the column specified in the <i>colname</i> option.</p> <p>The <i>tablename</i> option can be owner-qualified (include the owner name), with each element separated by a period. For example:</p>

```
owner.table
```

The *tablename* option can be delimited with quote characters to specify the character case.

If mixed case (uppercase and lowercase) is required, the name must be delimited. For example:

```
"Owner".table  
"Owner"."Table"
```

Each mixed-case element of the *tablename* option must be delimited separately, as shown in the previous example.

Note If you must use an object name case that does not match the value of the `ttl_character_case` parameter, the object name must be delimited.

If an object name contains any non-alphanumeric characters, such as spaces or periods, it must be delimited with quote characters. For example:

```
"table name"  
owner."table name"
```

If an object name contains a period, it must be *both* owner-qualified and delimited with quote characters. For example:

```
owner."table.name"  
"table.owner"."table.name"
```

colname

The name of a LOB column in the user table specified in the *tablename* option.

The *colname* option can be delimited with quote characters to specify the character case.

If mixed character case (both uppercase and lowercase) is required, the name must be delimited. For example:

```
"Colname"  
"COLname"
```

Note If you must use a column name case that does not match the value of the `ttl_character_case` parameter, the column name must be delimited. See “`ttl_character_case`” on page 132 for more information.

all

A keyword that refers to all LOB columns in marked tables in the primary database. By using the all keyword, you can apply an enable or disable operation to all LOB columns in marked tables.

enable

A keyword that refers to enabling replication for LOB columns.

disable

A keyword that refers to disabling replication for LOB columns.

force

A keyword that refers to forcing replication to be disabled for LOB columns.

When the force keyword follows the disable keyword, the `pdb_setrepcol` command immediately disables replication for the specified LOB column, without first checking for pending operations in the transaction log. When the force keyword follows the disable keyword and the all keyword, the `pdb_setrepcol` command immediately disables replication for all marked LOB columns in marked tables in the primary database, regardless of any pending operations in the transaction log.

Examples

Example 1

```
pdb_setrepcol
```

This command returns replication information for all enabled LOB columns in marked tables in the primary database.

Example 2

```
pdb_setrepcol authors
```

This command returns replication information for all LOB columns defined for the table `authors` in the primary database.

Example 3

```
pdb_setrepcol authors, picture
```

This command returns replication information for the column called “picture” in the table `authors` in the primary database.

Example 4

```
pdb_setrepcol authors, picture, enable
```

This command enables replication for the column “picture” in the table “authors” in the primary database.

Example 5

```
pdb_setrepcol all, disable
```

This command disables replication for all LOB columns in all marked tables in the primary database.

Usage

- When `pdb_setrepcol` is invoked, its function is determined by the keywords and options you specify.
- When multiple keywords or options are specified, each must be separated by a comma. Blank space before or after a comma is optional. For example:

```
pdb_setrepcol all, disable
```

- When you specify a column name in the `pdb_setrepcol` command, you must use the name of a valid LOB column.
- You cannot specify the following items as a table name in the `pdb_setrepcol` command:
 - Primary database system tables
 - Aliases or synonyms
 - Views
 - Replication Agent transaction log objects
- If a column name in the primary database is the same as a keyword, it can be identified by adding the string `col=` to the beginning of the column name. For example:

```
pdb_setrepcol tablename, col=enable, disable
```

- If you enable LOB column replication with the `pdb_setrepcol` command do not configure the Replication Agent to convert date or time datatypes in the primary database. See “`pdb_convert_datetime`” on page 142 for more information.
- When `pdb_setrepcol` is invoked with either no option or a single option, it returns information about the enabled status of LOB columns in the primary database.
 - If `pdb_setrepcol` is invoked with no option, it returns a list of all LOB columns for which replication is enabled in the primary database.

Note Invoking the `pdb_setrepcol` command with no option produces the same result as invoking the `pdb_setrepcol` command with the `enable` keyword.

- If `pdb_setrepcol` is invoked with a table name, it returns information about the enabled status of all the LOB columns in the specified primary table.
- If `pdb_setrepcol` is invoked with the `enable` keyword, it returns a list of all LOB columns for which replication is enabled in the primary database.
- If `pdb_setrepcol` is invoked with the `disable` keyword, it returns a list of all LOB columns for which replication is disabled in the primary database.

For LOB columns listed as disabled, transactions are not captured for replication.

- When `pdb_setrepcol` is invoked with a valid primary table name and valid LOB column name, with no keywords, it returns information about the enabled status of the specified LOB column in the specified table in the primary database.
- When `pdb_setrepcol` is invoked with the `all` keyword, the operation specified by the following keyword (`enable` or `disable`) is applied to all LOB columns in marked tables in the primary database.
 - If `pdb_setrepcol` is invoked with the `all` keyword and the `enable` keyword, it enables replication for all LOB columns in marked tables in the primary database.
 - If `pdb_setrepcol` is invoked with the `all` keyword and the `disable` keyword, it disables replication for all LOB columns in marked tables in the primary database.
- When `pdb_setrepcol` is invoked with a valid primary table name and valid LOB column name followed by one or more keywords, the operation specified by the keyword (`enable` or `disable`) is applied to the specified LOB column in the specified primary table.
 - If `pdb_setrepcol` is invoked with a table name and LOB column name and the `enable` keyword, it enables replication for the specified LOB column in the primary database.
 - If `pdb_setrepcol` is invoked with a table name and LOB column name and the `disable` keyword, it disables replication for the specified LOB column in the primary database.

If the table name and LOB column name combination you specify does not exist in the primary database, the `pdb_setrepcol` command returns an error.

- If the Replication Agent transaction log does not exist in the primary database (DB2 UDB) or the RASD is not initialized (Oracle or Microsoft SQL Server), the `pdb_setrepcol` command returns an error.
- If `pdb_setrepcol` is invoked with a table containing a “DATE” column, the primary key in the primary table must *not* include the “DATE” column. This is true for Replication Agent for UDB but not for Replication Agent for Oracle or Microsoft SQL Server.

See also `pdb_setrepproc`, `pdb_setreptable`, `ra_config`

pdb_setrepddl

Description	Note This command is available only for Oracle and Microsoft SQL Server.
	Returns DDL replication status; enables or disables replication for DDL statements.
Syntax	<p>To return replication status of DDL:</p> <pre>pdb_setrepddl</pre> <p>To enable or disable DDL replication:</p> <pre>pdb_setrepddl {enable disable}</pre> <p>The default setting is disable.</p>
Examples	<p>Example 1</p> <pre>pdb_setrepddl</pre> <p>This command returns the current DDL replication status for the primary database.</p> <p>Example 2</p> <pre>pdb_setrepddl enable</pre> <p>This command enables replication of DDL commands issued into the primary database after this point in time.</p> <p>Example 3</p> <pre>pdb_setrepddl disable</pre> <p>This command disables replication of DDL commands issued into the primary database after this point in time.</p>

- Usage
- This is the flag that turns DDL replication on or off. By default, it is set to off (*disable*).
 - In addition to enabling DDL replication using `pdb_setreppddl` command, you must set the Replication Agent `ddl_username` and `ddl_password` parameters.
 - If the Replication Agent has not been initialized, the `pdb_setreppddl` command returns an error.
 - The `pdb_setreppddl` command with `enable/disable` option is valid only when the instance is in *Admin* state.
 - The `pdb_setreppddl` command with no option is valid when the instance is in *Admin* or *Replicating* state.

Note Some DDL commands are filtered even when DDL replication is enabled. See the Replication Agent *Primary Database Guide* for more information.

See also `ddl_password`, `ddl_username`

pdb_setrepproc

Description **Note** This command is available only for Oracle and Microsoft SQL Server.

Returns stored procedure replication marking status; marks specified procedures for replication; unmarks all marked procedures or a specified procedure; enables or disables replication for all marked procedures or a specified procedure.

Syntax To return stored procedure replication marking status:

```
pdb_setrepproc [procname]|mark|unmark|enable|disable]
```

To unmark, enable, or disable all marked stored procedures:

```
pdb_setrepproc all, {unmark[, force]}|enable|disable}
```

To mark, unmark, enable, or disable a specified stored procedure:

```
pdb_setrepproc procname, {mark|unmark[, force]]enable|disable}
```

Note For Microsoft SQL Server, the `pdb_dflt_object_repl` configuration parameter has no impact on `pdb_setrepproc` command.

Parameters

procname

The name of a user stored procedure in the primary database.

The *procname* option can be delimited with quote characters to specify the character case.

If mixed character case (both uppercase and lowercase) is required, the name must be delimited. For example:

```
"Proc"
```

Note If you must use an object name case that does not match the setting of the `lcl_character_case` parameter, the object name must be delimited.

If an object name contains any non-alphanumeric characters, such as spaces, periods, and so forth, it must be delimited with quote characters. For example:

```
"proc name"  
"proc.name"
```

If an object name contains a period, it must be *both* owner-qualified and delimited with quote characters. For example:

```
owner."proc.name"  
"proc.owner"."proc.name"
```

repname

The *replicated name* of the stored procedure specified in a function replication definition for the primary stored procedure.

The *repname* option can be delimited with quote characters to specify character case. See the previous description of the *procname* option for details.

By specifying a replicated name, stored procedure invocations can be replicated to a stored procedure invocation in the replicate database that has a different stored procedure name from the primary database.

Note The replicated name you specify with the `pdb_setrepproc` command must match the name of a Replication Server function replication definition for the primary database connection. The Replication Agent cannot validate the function replication definition, but if it does not exist, function replication from the primary database will fail.

all

A keyword that refers to all user stored procedures in the primary database. By using the `all` keyword, you can mark all user stored procedures, or apply an `unmark`, `enable`, or `disable` operation to all *marked* stored procedures.

mark

A keyword that refers to marking user stored procedures for replication.

unmark

A keyword that refers to unmarking marked stored procedures.

force

A keyword that refers to the `unmark` operation. When the `force` keyword follows the `unmark` keyword, the `pdb_setrepproc` command immediately unmarks the specified stored procedure in the primary database, without first checking the `enable` status of the stored procedure or checking for pending operations in the transaction log. When the `force` keyword follows the `unmark` keyword and the `all` keyword, the `pdb_setrepproc` command immediately removes replication marking from all marked stored procedures in the primary database, regardless of their `enable` status or pending operations in the transaction log.

The `force` keyword also forces complete execution of the unmarking script, even if errors occur during the unmarking process. Normally, when errors occur during script execution, the script terminates immediately without completing.

Note Sybase recommends that you read the “Usage” section that follows to better understand how scripts are used in Oracle procedure marking and unmarking.

The `force` keyword can be useful when a previous script execution failed and left the unmarking operation incomplete. When errors occur during a forced script execution, the `pdb_setrepproc` command returns the following message:

```
Errors were encountered and ignored during FORCED script
```

execution. See error log for details.

enable

A keyword that refers to enabling replication for marked stored procedures.

disable

A keyword that refers to disabling replication for marked stored procedures.

Examples

Example 1

```
pdb_setrepproc
```

This command returns replication marking information for all marked stored procedures in the primary database.

Example 2

```
pdb_setrepproc authors
```

This command returns replication marking information for the user stored procedure named “authors” in the primary database.

Example 3

```
pdb_setrepproc authors, mark
```

This command marks the user stored procedure named “authors” in the primary database.

Example 4

```
pdb_setrepproc authors, enable
```

This command enables replication for the marked stored procedure named “authors” in the primary database.

Example 5

```
pdb_setrepproc all, unmark
```

This command unmarks all marked stored procedures in the primary database.

Usage

- How you use the `pdb_setrepproc` command depends on the type of replication definition that you have created at Replication Server. If you have created a database replication definition with no function replication definition, then the replicate procedure in the `pdb_setrepproc` command refers to the procedure in the replicate database. However, if you have created a function replication definition, then the replicate procedure in the `pdb_setrepproc` command refers to the name of the function replication definition, and it is the function replication definition that must map to the procedure in the replicate database.

If *no* function replication definition exists and will not be added prior to replication, but only a database replication definition exists, use the following commands to mark a procedure for replication:

- When the procedure in the replicate database has the same name as the procedure in the primary database:

```
    pdb_setrepproc pdb_proc, mark
```

where:

pdb_proc is the name of the procedure in the primary database that you want to mark for replication.

- When the procedure in the replicate database has the different name than the procedure in the primary database:

```
    pdb_setrepproc pdb_proc, rep_proc, mark
```

where:

pdb_proc is the name of the procedure in the primary database that you want to mark for replication.

rep_proc is the name of the procedure in the replicate database.

If a function replication definition exists or will be added prior to replication, regardless of whether or not a database replication definition exists, use the following commands to mark a procedure for replication:

- When the function replication definition has the same name as the procedure in the primary database:

```
    pdb_setrepproc pdb_proc, mark
```

where:

pdb_proc is the name of the procedure in the primary database that you want to mark for replication.

- If the procedure in the replicate database also has the *same* name as the function replication definition, then there is no need to use the “deliver as” clause in the replication definition in the primary Replication Server. For example:

```
    create function replication definition  
    pdb_proc with primary at data_server.  
    database ...
```

- If the procedure in the replicate database has a *different* name than the name of function replication definition, then the function replication definition must map to the procedure in the replicate database. For example:

```
create function replication definition
  pdb_proc with primary at data_server.database
  deliver as 'rep_proc' ...
```

- When the name of the function replication definition is different than the procedure in the primary database:

```
pdb_setrepproc pdb_proc , rdpri_proc, mark
```

where:

`pdb_proc` is the name of the procedure in the primary database that you want to mark for replication.

`rdpri_proc` is the name of the function replication definition.

- If the procedure in the replicate database also has the *same* name as the function replication definition, then there is no need to use the “deliver as” clause in the replication definition in the primary Replication Server. For example:

```
create function replication definition
  rdpri_proc with primary at
  data_server.database ...
```

- If the procedure in the replicate database has a *different* name from the function replication definition, then the function replication definition must map to the procedure in the replicate database. For example:

```
create function replication definition
  rdpri_proc with primary at
  data_server.database deliver as 'rep_proc' ...
```

- When multiple keywords and options are specified, each must be separated by a comma. Blank space before or after a comma is optional. For example:
- ```
 pdb_setrepproc all, unmark, force
```
- When you specify a stored procedure name in the `pdb_setrepproc` command, you must use the name of a valid user stored procedure.
  - You cannot specify the following items as a stored procedure name in the `pdb_setrepproc` command:

- System procedures
- Replication Agent transaction log procedures
- If a stored procedure name in the primary database is the same as a keyword, it can be identified by adding the string `proc=` to the beginning of the stored procedure name. For example:

```
 pdb_setrepproc proc=unmark, mark
```

- When you use the `unmark` keyword to remove replication marking from a stored procedure, the Replication Agent verifies that replication is disabled for that stored procedure and there are no pending (unprocessed) operations for that stored procedure in the transaction log. If replication is not disabled for that procedure, or if there is a pending operation for that procedure in the transaction log, `pdb_setrepproc` returns an error.
- When `pdb_setrepproc` is invoked with either no option or a single option, it returns marking information about the stored procedures in the primary database.
  - If `pdb_setrepproc` is invoked with no option, it returns a list of all marked procedures in the primary database.

---

**Note** Invoking the `pdb_setrepproc` command with no option produces the same result as invoking the `pdb_setrepproc` command with only the `mark` keyword.

---

- If `pdb_setrepproc` is invoked with a procedure name, it returns complete marking information about the specified procedure.
- If `pdb_setrepproc` is invoked with the `mark` keyword, it returns a list of all marked procedures in the primary database.
- If `pdb_setrepproc` is invoked with the `unmark` keyword, it returns a list of all unmarked procedures in the primary database.
- If `pdb_setrepproc` is invoked with the `enable` keyword, it returns a list of all marked procedures in the primary database, for which replication is currently enabled.
- If `pdb_setrepproc` is invoked with the `disable` keyword, it returns a list of all marked procedures in the primary database, for which replication is currently disabled.



Stored procedures marked for replication are recorded in the RASD. All other user procedures are considered unmarked.

---

**Note** The Replication Agent system procedures are not included in the list of unmarked procedures. Also not included are any synonyms or aliases for these procedures.

---

For procedures listed as unmarked or disabled, their invocations will not be captured for replication.

- When `pdb_setrepproc` is invoked with the `all` keyword and an action keyword (`unmark`, `enable`, or `disable`), the action specified is applied to either all user stored procedures in the primary database, or to all marked procedures in the primary database.
  - If `pdb_setrepproc` is invoked with the `all` and `unmark` keywords, it removes replication marking from all marked procedures in the primary database.

You can specify the `force` keyword after the `unmark` keyword to force immediate unmarking of all marked procedures, including procedures for which replication is still enabled or pending operations remain in the transaction log.
  - If `pdb_setrepproc` is invoked with the `all` and `enable` keywords, it enables replication for all marked procedures in the primary database.
  - If `pdb_setrepproc` is invoked with the `all` and `disable` keywords, it disables replication for all marked procedures in the primary database.

- 
- **Note** For Microsoft SQL Server, Sybase recommends the use of `[mark | unmark]` instead of `[enable | disable]` since the results are the same.
- 

When `pdb_setrepproc` is invoked with a valid user stored procedure name and followed by an action keyword (`mark`, `unmark`, `enable`, or `disable`), the action specified is applied to the specified procedure.

- If `pdb_setrepproc` is invoked with a procedure name and the `mark` keyword, it marks the specified procedure in the primary database for replication.
- If `pdb_setrepproc` is invoked with a procedure name and the `unmark` keyword, it removes replication marking from the specified procedure in the primary database.

- If `pdb_setrepproc` is invoked with a procedure name and the `enable` keyword, it enables replication for the specified marked procedure in the primary database.
- If `pdb_setrepproc` is invoked with a procedure name and the `disable` keyword, it disables replication for the specified marked procedure in the primary database.
- If you specify a stored procedure name that does not exist in the primary database, the `pdb_setrepproc` command returns an error.
- When `pdb_setrepproc` is invoked with a procedure name and a replicated name, followed by the `mark` keyword, the primary procedure is marked for replication with the specified replicated name.

If the primary procedure name you specify does not exist in the primary database, the `pdb_setrepproc` command returns an error.

By specifying a replicated name, procedure invocations can be replicated to a procedure in the replicate database that has a different name from the primary procedure.

---

**Note** The replicated name you specify with the `pdb_setrepproc` command must match the name of a Replication Server function replication definition for the primary database connection. The Replication Agent cannot validate the function replication definition, but if it does not exist, function replication from the primary database will fail.

---

- If RASD is not initialized (Oracle and Microsoft SQL Server), the `pdb_setrepproc` command returns an error.

*For Oracle only:*

To support stored procedure replication in Oracle, a stored procedure that is marked for replication must be modified. The modification is required to record the stored procedures execution in the Oracle transaction log. As a result of the modifications, the following behavior should be considered when marking and unmarking stored procedures in Oracle:

- You must disable DDL replication before marking or unmarking a procedure, and re-enable it after marking or unmarking to prevent modifications from replicating to standby.

- Marking and unmarking a stored procedure for replication requires that the Replication Agent drop, and then re-create the procedure. However, Replication Agent sets all the same privileges on the re-created procedure as those defined on the original procedure.

---

**Note** Do not remove or alter the Replication Agent comments in a marked stored procedure.

---

- When `pdb_setreproc` is invoked to mark a procedure for replication, Replication Agent does the following:
  - Modifies the user procedure to add code that captures input parameter values and generates Replication Agent transaction log records.
  - Generates a SQL script that creates the procedures required for the Replication Agent transaction log in the primary database.
  - Saves the generated script in a file called *partmark.sql* in the `RAX-15_I\inst_name\scripts\procname` directory, where *inst\_name* is the name of the Replication Agent instance, and *procname* is the name of the stored procedure being marked. This script can *not* be manually executed—it is for informational purposes only.

---

**Note** If the value of the `pdb_auto_run_scripts` configuration parameter is `false`, the *partmark.sql* script will be saved but not executed automatically. You cannot manually run the script. To complete marking the procedure, you must first set `pdb_auto_run_scripts` to `true`, then re-run the `pdb_setreproc` command.

---

- Executes the script to mark the stored procedure and create the transaction log objects in the primary database (if the value of the `pdb_auto_run_scripts` configuration parameter is `true`).
  - After the script completes successfully, moves the *partmark.sql* file to the `RAX-15_I\inst_name\scripts\procname\installed` directory.
  - If the mark script fails, it is stored in a file (*partmark.sql*) in the `RAX-15_I\inst_name\scripts\procname` directory, the stored procedure is not marked, and transaction log objects are not created. You can examine the script by viewing the *mark.sql* file.
- When `pdb_setreproc` is invoked to unmark a marked stored procedure, Replication Agent does the following:

- Modifies the user procedure to remove Replication Agent code that captures input parameter values and generates transaction log records.
- Generates a SQL script that removes the tables and procedures required for the transaction log in the primary database.
- Saves the generated script in a file called *partunmark.sql* in the *RAX-15\_1\inst\_name\scripts\procname* directory, where *inst\_name* is the name of the Replication Agent instance and *procname* is the name of the stored procedure being unmarked. For Oracle, this script named *partunmark.sql* because it can *not* be manually executed—it is for informational purposes only.

---

**Note** If the value of the `pdb_auto_run_scripts` configuration parameter is `false`, the *partunmark.sql* script will be saved but not executed automatically. You cannot manually run the script. To complete unmarking the procedure, you must first set `pdb_auto_run_scripts` to `true`, then re-run the `pdb_setrepproc` command.

---

- Executes the script to unmark the stored procedure and remove the transaction log objects in the primary database (if the value of the `pdb_auto_run_scripts` configuration parameter is `true`).
- After the script completes successfully, moves the *partunmark.sql* file to the *RAX-15\_1\inst\_name\scripts\procname\installed* directory.
- If the unmark script fails, it is stored in a file (*partunmark.sql*) in the *RAX-15\_1\inst\_name\procname\scripts* directory and the stored procedure is not unmarked and the transaction log objects are not removed. You can examine the script by viewing the *partunmark.sql* file.

When the unmark script execution encounters a fatal error on any database object, the `pdb_setrepproc` command returns the following message:

```
Could not unmark the following objects: ...
See error log for details.
```

See also

`pdb_setrepcol`, `pdb_setreptable`, `ra_config`

## pdb\_setrepseq

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|             | <p>Returns the sequence replication marking status; marks specified sequence for replication; unmarks all marked sequences or a specified sequence; enables or disables replication for all marked sequences or a specified sequence.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax      | <p>To return sequence replication marking status:</p> <pre>pdb_setrepseq [sequence_name mark unmark enable disable]</pre> <p>To unmark, enable, or disable all marked sequences:</p> <pre>pdb_setrepseq all, {unmark[, force]  enable disable}</pre> <p>To mark, unmark, enable, or disable a specified sequence:</p> <pre>pdb_setrepseq sequence_name, {mark unmark[, force]  enable disable}</pre> <p>To mark a specified sequence for replication with a replicated name:</p> <pre>pdb_setrepseq sequence_name, repname, mark</pre>                                                                                                                                                                                                                                                                                                                                                                     |
| Parameters  | <p><i>sequence_name</i></p> <p>The name of a user sequence in the primary database. The <i>sequence_name</i> option can be delimited with quote characters to specify the character case. If mixed character case (both uppercase and lowercase) is required, the name must be delimited. For example:</p> <pre>"Sequence"</pre> <p>The <i>sequence_name</i> parameter can be owner-qualified to include the primary sequence owner name, with each element separated by a period. For example:</p> <pre>owner.sequence</pre> <hr/> <p><b>Note</b> If you must use an object name case that does not match the setting of the <code>lfl_character_case</code> parameter, the object name must be delimited. If an object name contains any non-alphanumeric characters, such as spaces and periods, it must be delimited with quote characters. For example, “sequence name” or owner.”sequence name.”</p> |

*rename*

The replicated name of the sequence to be updated at the replicate site, if desired to be different than the sequence name at the primary site. The *rename* option can be delimited with quote characters to specify character case. See the previous description of the *sequence\_name* parameter for details. By specifying a replicated name, sequence updates can be replicated to a sequence in the replicate database that has a different sequence name from the primary database.

The *rename* option can be owner-qualified to include the replicate sequence owner name, with each element separated by a period. For example:

```
repowner . rename
```

*all*

A keyword that refers to all user sequences in the primary database. By using the *all* keyword, you can unmark all user sequences, or apply an enable or disable operation to all marked sequences.

*mark*

A keyword that refers to marking user sequences for replication.

*unmark*

A keyword that refers to unmarking user sequences for replication.

*force*

A keyword that refers to the unmark operation. When the *force* keyword follows the *unmark* keyword, the *pdb\_setrepseq* command immediately unmarks the specified sequence in the primary database, without first checking the enable status of the sequence. When the *force* keyword follows the *unmark* keyword and the *all* keyword, the *pdb\_setrepseq* command immediately removes replication marking from all marked sequences in the primary database, regardless of their enable status

*enable*

A keyword that refers to enabling replication for marked sequences.

*disable*

A keyword that refers to disabling replication for marked sequences.

Usage

- When *pdb\_setrepseq* is invoked, its function is determined by the keywords and options you specify.
- When multiple keywords and options are specified, each must be separated by a comma. Blank space before or after a comma is optional. For example:

```
pdb_setrepseq all, unmark, force
```

- When you specify a sequence in the `pdb_setrepseq` command, you must use the name of a valid user sequence.

## pdb\_setreptable

**Description** Returns replication marking status; marks all user tables or a specified table for replication; unmarks all marked tables or a specified table; enables or disables replication for all marked tables or a specified table.

**Syntax** To return replication marking status:

```
pdb_setreptable [tablename]|mark|unmark|enable|disable]
```

To mark all user tables (available only for Oracle and Microsoft SQL Server):

```
pdb_setreptable all, mark
```

To unmark, enable, or disable all marked tables:

```
pdb_setreptable all, {unmark[, force]}|enable|disable}
```

To mark, unmark, enable, or disable a specified table:

```
pdb_setreptable tablename, {mark[, owner]}
unmark[, force] |enable|disable}
```

To mark a specified table for replication with a replicated name:

```
pdb_setreptable tablename, repname, mark[, owner]
```

**Parameters** *tablename*

The name of a user table in the primary database.

The *tablename* parameter can be owner-qualified to include the primary table owner name, with each element separated by a period. For example:

```
owner.table
```

This parameter can be delimited with quote characters to specify the character case.

If mixed character case (both uppercase and lowercase) is required, the name must be delimited. For example:

```
"Owner".table
```

```
"Owner" . "Table"
```

Each mixed case element of the *tablename* option must be delimited separately, as shown in the previous example.

If an object name contains any non-alphanumeric characters, such as spaces or periods, it must be delimited with quote characters. For example:

```
"table name"
owner."table name"
```

If an object name contains a period, it must be *both* owner-qualified and delimited with quote characters. For example:

```
owner."table.name"
"table.owner"."table.name"
```

#### *rename*

The name of the table specified in the replication definition for a primary table.

---

**Note** The replicated name you specify with the *pdb\_setreptable* command must match a table name specified by a *with primary table named* clause in a Replication Server replication definition for the primary database connection. The Replication Agent cannot validate the replication definition, but if it does not exist, or if the *with primary table named* clause does not match the replicated name specified with *pdb\_setreptable*, replication from the primary table will fail.

---

The *rename* option can be owner-qualified to include the replicate table owner name, with each element separated by a period. For example:

```
repowner.reptable
```

The *rename* option can also be delimited with quote characters to specify the character case. See the previous description of the *tablename* option for details.

---

**Note** If the replicate table name contains a period (for example, *table.name*), without owner qualification, you must set the value of the Replication Agent *use\_rssd* parameter to true.

---

#### *all*

A keyword that refers to all tables in the primary database. By using the *all* keyword, you can mark all user tables, or apply an *unmark*, *enable*, or *disable* operation to all marked tables.



**mark**

A keyword that refers to replication marking.

**owner**

A keyword that refers to the mark operation.

The owner keyword turns on the SEND OWNER mode. When you specify the owner of a table in a replication definition, you must always use the owner keyword if you want to enable the SEND OWNER mode.

**unmark**

A keyword that refers to unmarking a marked table.

**force**

A keyword that refers to the unmark operation.

When the force keyword follows the unmark keyword, the `pdb_setreptable` command immediately removes replication marking for the specified table in the primary database, without first checking the enable status of the table or checking for pending operations in the transaction log. When the force keyword follows the unmark keyword and the all keyword, the `pdb_setreptable` command immediately removes replication marking from all marked tables in the primary database, regardless of their enable status or any pending operations in the transaction log.

The force keyword also forces complete execution of the unmarking script, even if errors occur during the unmarking process (Microsoft SQL Server only). Normally, when errors occur during script execution, the script terminates immediately without completing. The force keyword can be useful when a previous script execution failed and left the unmarking operation incomplete.

When errors occur during a forced script execution, the `pdb_setreptable` command returns the following message:

```
Errors were encountered and ignored during FORCED script
execution. See error log for details.
```

**enable**

A keyword that refers to enabling replication for marked tables.

**disable**

A keyword that refers to disabling replication for marked tables.

**Examples****Example 1**

```
pdb_setreptable authors
```

This command returns replication marking information for the table named “authors” in the primary database.

**Example 2**

```
pdb_setreptable mark
```

This command returns replication marking information for all marked tables in the primary database.

**Example 3**

```
pdb_setreptable disable
```

This command returns replication marking information for all marked tables for which replication has been disabled in the primary database.

**Example 4**

```
pdb_setreptable all, unmark, force
```

This command forces unmarking for all marked tables in the primary database.

**Example 5**

```
pdb_setreptable all, enable
```

This command enables replication for all marked tables in the primary database.

**Example 6**

```
pdb_setreptable authors, mark
```

This command marks for replication the table named “authors” in the primary database.

**Example 7**

```
pdb_setreptable authors, mark, owner
```

This command marks for replication the table named “authors” in the primary database so that the OWNER\_MODE is enabled in the LTL.

**Example 8**

```
pdb_setreptable ptable, rtable, mark, owner
```

The table in the replication definition will be:

```
powner.rtable
```

**Example 9**

```
pdb_setreptable ptable, rowner.rtable, mark,owner
```

The table in the replication definition will be:

```
rowner.rtable
```

#### Example 10

```
pdb_setreptable ptable, rowner.rtable, mark,owner
```

The table in the replication definition will be:

```
rowner.rtable
```

#### Example 11

```
pdb_setreptable authors, enable
```

This command enables replication for the marked table “authors” in the primary database.

#### Example 12

```
pdb_setreptable table=mark, enable
```

This command enables replication for the marked table named “mark” in the primary database.

#### Example 13

```
pdb_setreptable authors, unmark, force
```

This command forces unmarking for the marked table “authors” in the primary database.

## Usage

- How you use the `pdb_setreptable` command depends on the type of replication definition that you have created at the Replication Server. If you have created a database replication definition with no table replication definition, then the `replicate` procedure in the `pdb_setreptable` command refers to the table in the replicate database. However, if you have created a table replication definition, then the `replicate table` in the `pdb_setreptable` command refers to the name of the table replication definition, and it is the table replication definition that must map to the table in the replicate database.

If *no* table replication definition exists and will not be added prior to replication, but only a database replication definition exists, use the following commands to mark a table for replication:

- When the table in the replicate database has the same name as the table in the primary database:

```
pdb_setreptable pdb_table, mark
```

where:

`pdb_table` is the name of the table in the primary database that you want to mark for replication.

- When the table in the replicate database has the different name than the table in the primary database:

```
pdb_setreptable pdb_table, rep_table, mark
```

where:

`pdb_table` is the name of the table in the primary database that you want to mark for replication.

`rep_table` is the name of the table in the replicate database.

If a table replication definition exists or will be added prior to replication, regardless of whether or not a database replication definition exists, use the following commands to mark a table for replication:

- When the primary table in the table definition has the *same* name as the table in the primary database:

```
pdb_setreptable pdb_table, mark
```

where:

`pdb_table` is the name of the table in the primary database that you want to mark for replication.

- If the table in the replicate database also has the *same* name as the table replication definition, then you can use the “with all tables named” clause in the replication definition in the primary Replication Server. For example:

```
create replication definition my_table_repdef
with primary at data_server.database
with all tables named pdb_table ...
```

- If the table in the replicate database has a *different* name than the primary table in the table replication definition, then the table replication definition must map to the table in the replicate database. For example:

```
create replication definition my_table_repdef
with primary at data_server.database
with primary table named pdb_table
with replicate table name rep_table ...
```

- When the name of the table replication definition is *different* than the table in the primary database:

```
pdb_setreptable pdb_table, rdpri_table, mark
```

where:

*pdb\_table* is the name of the table in the primary database that you want to mark for replication.

*rdpri\_table* is the name of the primary table in the replication definition.

- If the table in the replicate database also has the *same* name as the primary table in the table replication definition, then you can use the “with all tables named” clause in the replication definition in the primary Replication Server. For example:

```
create replication definition my_table_repdef
with primary at data_server.database
with all tables named rdpri_table ...
```

- If the table in the replicate database has a *different* name from the primary table in the table replication definition, then the table replication definition must map to the table in the replicate database. For example:

```
create replication definition my_table_repdef
with primary at data_server.database
with primary table named rdpri_table
with replicate table name rep_table ...
```

- When multiple keywords and options are specified, each must be separated by a comma. Blank space before or after a comma is optional. For example:

```
pdb_setreptable all, unmark, force
```

- When you specify a primary table in the `pdb_setreptable` command, you must use the name of a valid user table.
- You cannot specify the following items as a primary table in the `pdb_setreptable` command:
  - System tables
  - Views
  - Replication Agent transaction log tables
- If you specify an alias or synonym as a primary table in the `pdb_setreptable` command, the actual table that the alias or synonym refers to is acted upon. The actual table name is the table name sent to the primary Replication Server.

- If a table name in the primary database is the same as a keyword, it can be identified by adding the `table=string` to the beginning of the name. For example:

```
 pdb_setreptable table=unmark, mark
```

This is true for both primary table names and replicated names.

- For UDB only, if the `mark` script fails, it is stored in a file (`mark.sql`) in the `RAX-15_I\inst_name\scripts\tablename` directory, the table is not marked, and transaction log objects are not created. You can examine the script by viewing the `mark.sql` file.
- For UDB only, if the `unmark` script fails, it is stored in a file (`unmark.sql`) in the `RAX-15_I\inst_name\tablename\scripts` directory, the table is not unmarked, and the transaction log objects are not removed. You can examine the script by viewing the `unmark.sql` file. When the `unmark` script execution encounters a fatal error on any database object, the `pdb_setreptable` command returns the following message:

```
 Could not unmark the following objects: ...
 See error log for details.
```

- If you create a new table using a table name that was previously marked you must mark the new table by executing the `pdb_setreptable` command with the `mark` option, even if you did not unmark the previous table.
- When you use the `unmark` keyword to remove replication marking from a primary table, the Replication Agent verifies that replication is disabled for that table and checks to make sure that there are no pending (unprocessed) operations for that table in the transaction log. If replication is not disabled, or there is a pending operation for that table in the transaction log, `pdb_setreptable` returns an error.
- When you use the `unmark` keyword to remove replication marking from primary tables, you can also specify the `force` keyword to immediately remove replication marking from primary tables, without regard to whether replication is disabled or pending operations exist in the transaction log.

The `force` keyword also ignores script execution errors. If the `unmark` script execution encounters a fatal error on any database object, the `pdb_setreptable` command returns the following message:

```
 Could not unmark the following objects: ...
 See error log for details.
```

- When `pdb_setreptable` is invoked with either no option or a single option, it returns marking information about the user tables in the primary database:
  - If `pdb_setreptable` is invoked with no option, it returns a list of all marked tables in the primary database.

---

**Note** Invoking the `pdb_setreptable` command with no option produces the same result as invoking the `pdb_setreptable` with the `mark` keyword.

---

- If `pdb_setreptable` is invoked with a table name, it returns complete marking information about the specified primary table.
- If `pdb_setreptable` is invoked with the `mark` keyword, it returns a list of all marked tables in the primary database.
- If `pdb_setreptable` is invoked with the `unmark` keyword, it returns a list of all unmarked tables in the primary database.
- If `pdb_setreptable` is invoked with the `enable` keyword, it returns a list of all marked tables in the primary database for which replication is enabled.
- If `pdb_setreptable` is invoked with the `disable` keyword, it returns a list of all marked tables in the primary database for which replication is disabled.

Tables marked for replication are listed in the marked objects table. All other user tables are considered unmarked.

---

**Note** The Replication Agent transaction log tables and shadow tables are not included in the list of unmarked tables. Also not included are any synonyms, views, or aliases of these database objects.

---

For tables listed as unmarked or disabled, transactions will not be captured for replication.

- When `pdb_setreptable` is invoked with the `all` keyword and an action keyword (`mark`, `unmark`, `enable`, or `disable`), the action specified is applied to either all tables in the primary database, or all marked tables in the primary database.

- If `pdb_setreptable` is invoked with the `all` and `mark` keywords, all user tables in the primary database are marked for replication.

---

**Note** Tables owned by users contained in the owner filter list will not be marked. However, you will be able to mark any individual table.

---

- If `pdb_setreptable` is invoked with the `all` and `unmark` keywords, it removes replication marking from all marked tables in the primary database.

You can specify the `force` keyword after the `unmark` keyword to force immediate unmarking of all marked tables, or to unmark tables for which replication is still enabled or pending operations remain in the transaction log, or to force the script execution to ignore errors and continue an unmarking operation that failed previously.

- If `pdb_setreptable` is invoked with the `all` and `enable` keywords, it enables replication for all marked tables in the primary database.
- If `pdb_setreptable` is invoked with the `all` and `disable` keywords, it disables replication for all marked tables in the primary database.
- When `pdb_setreptable` is invoked with a valid user table name, followed by an action keyword (`mark`, `unmark`, `enable`, or `disable`), the action specified is applied to the specified table.
- If `pdb_setreptable` is invoked with a table name and the `mark` keyword, it marks the specified table in the primary database for replication.

---

**Note** When an individual table is marked the owner filter list is not checked. This allows users to mark a table that has an owner in the owner filter list.

---

- If `pdb_setreptable` is invoked with a table name and the `unmark` keyword, it removes replication marking from the specified table in the primary database.

---

**Note** If you want to use owner-qualified table names for either primary tables or replicate tables, you must set the value of the Replication Agent `use_rssd` parameter to `true`.

---



You can specify the `force` keyword after the `unmark` keyword to force immediate unmarking of the specified table, to unmark a table for which replication is still enabled or pending operations remain in the transaction log, or to force the script execution to ignore errors and continue an unmarking operation that failed previously.

- If `pdb_setreptable` is invoked with a table name and the `enable` keyword, it enables replication for the specified marked table in the primary database.

If the `enable` script execution encounters a fatal error on any database object, the `pdb_setreptable` command returns the following message:

```
Could not enable the following objects: ...
See error log for details.
```

- If `pdb_setreptable` is invoked with a table name and the `disable` keyword, it disables replication for the specified marked table in the primary database.

If the `disable` script execution encounters a fatal error on any database object, the `pdb_setreptable` command returns the following message:

```
Could not disable the following objects: ...
See error log for details.
```

- If the table name you specify does not exist in the primary database, the `pdb_setreptable` command returns an error.
- When `pdb_setreptable` is invoked with a primary table name and a replicated name, followed by the `mark` keyword, the primary table is marked for replication with the specified replicated name.

If the primary table name you specify does not exist in the primary database, the `pdb_setreptable` command returns an error.

By specifying a replicated name, transactions can be replicated to a table in the replicate database that has a different name from the primary table.

---

**Note** The replicated name you specify with the `pdb_setreptable` command must match a table name specified by a `with all tables named` clause in a Replication Server replication definition for the primary database connection. The Replication Agent cannot validate the replication definition, but if it does not exist, or if the `with all tables named` clause does not match the replicated name specified with `pdb_setreptable`, replication from the primary table will fail.

---

You can also specify the owner keyword after the mark keyword so that when operations against the primary table are replicated, the primary table owner name will be attached to the replicate table name in the form owner.tablename.

---

**Note** If you want to use an owner-qualified replicate table name with the replicate owner's name, use the owner keyword with the `pdb_setreptable` command. If you specify an unqualified replicate table name, the primary table owner name is sent with the replicate table name in the LTL.

---

- If the Replication Agent transaction log does not exist in the primary database (DB2 UDB) or the RASD is not initialized (Oracle and Microsoft SQL Server), the `pdb_setreptable` command returns an error.
- To replicate a table that contains column names that have spaces, you must set `structured_tokens` to true.

See also `pdb_setrepcol`, `pdb_setrepproc`, `ra_config`

## pdb\_skip\_op

---

Description

**Note** This command is available only for Oracle and Microsoft SQL Server.

---

Returns, adds, or removes record identifiers from a list of records to skip in processing. The format of the identifier is database-specific.

Syntax

`pdb_skip_op [add | remove], [identifier] [remove, all]`

Parameters

`add`

Adds a specified ID to the list of identifiers of records to skip.

`remove`

Removes a specified ID from the list of identifiers to skip.

`identifier`

Identifies the log record to skip. The syntax is database specific

`all`

Allows you to add or remove all IDs in the list of identifiers to skip.

Examples

**Example 1**

```
pdb_skip_op
```

This command with no parameters returns a list of the identifiers for the records you want to skip.

**Example 2**

```
pdb_skip_op add, id
```

This command adds an ID to the list of identifiers you want to skip.

**Example 3**

```
pdb_skip_op remove, id
```

To remove an ID to the list of identifiers you want to skip:

**Example 4**

```
pdb_skip_op remove, all
```

This command removes all the IDs on the list of identifiers you want to skip.

Usage

- The `pdb_skip_op` command allows you to skip problem records, thereby avoid having to reinitialize the Replication Agent.
- Skipped records are written to the system log as a warning message.
- The `pdb_skip_op` command is valid when the Replication Agent is in *Admin* state.
- The format of the identifier is database specific:
  - For Microsoft SQL Server, the identifier is Log Sequence Number (LSN) and it has the following form:

```
virtualfileseqno:pageid:operationsseqno
```

where:

- `virtualfileseqno` is the virtual log sequence number.
- `pageid` is the page number.
- `operationsseqno` is the sequence number of the operation.

You can get the LSN using the Microsoft SQL Server DBCC command, or you can parse it from the locator. For example:

- LSN in decimal format

```
'489:112:27'
```

- LSN in hexadecimal format

```
'0x00000489:00000112:0027'
```

- For Oracle, the identifier contains, SCN (System Change Number), redo log Thread, and Record Byte Address (RBA) and it has the following form:

*scn, thread, lsn.blknum.blkoffset*

where:

- *scn* is the System Change Number.
- *thread* is the thread being used.
- *lsn* is the log sequence number.
- *blknum* is the block number.
- *blkoffset* is the offset into the block where this record resides.

The values must be specified in the `pdb_skip_op` command together, enclosed in quotes, each item separated by a period.

For example:

```
'0000.012345678', '1', '0012.0000444.0000123'
```

All values can be described as a hexadecimal by prefixing the identifier with an '0x' as follows:

```
'0x000c.00001bc.000007b'
```

or

```
'0x000.00BC614E'
```

See also `ra_helplocator`, `ra_locator`

## **pdb\_truncate\_xlog**

Description Truncates the Replication Agent primary database transaction log on demand:

- For Oracle, the behavior of this command changes based on the value of configuration parameter `pdb_include_archives`:
  - When `pdb_include_archives` is `false`, this command triggers the archive process to archive any online redo logs that have already been processed by Replication Agent.

- When `pdb_include_archives` is true, removes old archive redo log files from the path specified by `pdb_archive_path`.

---

**Note** For Oracle, truncation of the old archive log files from the `pdb_archive_path` directory is performed only if the `pdb_archive_remove` property is set to true.

---

- For UDB, if the `pdb_archive_path` is not set, then archived transaction log files are truncated from the location specified by the `pdb_archive_path` configuration parameter, when `pdb_archive_remove` property is set to true.

The primary transaction log files will be deleted up to, but not including, the log file that contains the lsn found.

---

**Warning!** For UDB, if `pdb_archive_path` is not set, then Replication Agent deletes the *primary database* log files that it no longer needs. For more information, see the Replication Agent *Primary Database Guide*

---

- For Microsoft SQL Server, the primary database log is truncated. Based on the LTM locator from the Replication Server, Replication Agent queries the primary database to obtain the newest transaction ID that can be truncated, and marks the transaction log space prior to the newest transaction as reusable.

For more information on how Replication Agent affects each type of database when `pdb_truncate_xlog` is executed, see the Replication Agent *Primary Database Guide*

#### Syntax

`pdb_truncate_xlog`

#### Usage

- When `pdb_truncate_xlog` is invoked, Replication Agent immediately truncates the primary database transaction log based on the most recent truncation point received from the primary Replication Server. The truncation point is part of the information contained in the LTM Locator.
- To update the LTM Locator from the primary Replication Server, use the `ra_locator` command.
- The `pdb_truncate_xlog` command is asynchronous and it does not return success or failure (unless an immediate error occurs). You must examine the Replication Agent system log to determine success or failure of the `pdb_truncate_xlog` command.

- If the Replication Agent primary database log does not exist or if a connection failure occurs, the `pdb_truncate_xlog` command returns an error message.
- You can use the `ra_config` command to specify the type of automatic truncation you want. You can use the `pdb_truncate_xlog` command to truncate the transaction log if automatic truncation is not sufficient to manage the size of the transaction log.
- The `pdb_truncate_xlog` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `ra_config`, `ra_locator`

## **pdb\_version**

**Description** Returns the type and version of the primary data server.

**Syntax** `pdb_version`

**Usage** The actual results returned vary depending on the type of primary data server.

**See also** `ra_version`, `ra_version_all`

## **pdb\_xlog**

**Description** Returns the names of transaction log base objects; creates transaction log base objects in the primary database; or removes transaction log base objects from the primary database.

For Oracle and Microsoft SQL Server, this command verifies permissions are valid for the Replication Agent to obtain system data from the primary database. It also checks the condition of the primary database to determine if archiving is turned on or off, and then loads the RASD with system data from the primary database.

---

**Note** Because the `pdb_xlog create` command is deprecated, Sybase recommends that you use `pdb_xlog init`.

---

**Syntax** `pdb_xlog [[init |create | remove] [, force]] | move_truncpt]`

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameters | <p><b>init</b><br/>The keyword for moving the truncation point to the end of the transaction log.</p> <p><b>create</b><br/>The keyword for creating a transaction log. Deprecated; use the <code>init</code> keyword instead.</p> <p><b>remove</b><br/>The keyword for removing a transaction log.</p> <p><b>force</b><br/>A keyword that refers to the <code>remove</code> or the <code>init</code> operation.</p> <p><b>move_truncpt</b><br/>A keyword that moves the truncation point; for Oracle and Microsoft SQL Server only.</p>                                                                                                                                                                                                     |
| Examples   | <pre>pdb_xlog init</pre> <p>This command initializes the Replication Agent, creating any required xlog base components.</p> <pre>pdb_xlog init, force</pre> <p>This command re-initializes the Replication Agent, creating or re-loading any required xlog base components.</p> <pre>pdb_xlog remove</pre> <p>This command removes any Replication Agent xlog base components.</p> <pre>pdb_xlog remove, force</pre> <p>This command removes any Replication Agent xlog base components and ignores any individual errors that occur during removal.</p> <pre>pdb_xlog init, move_truncpt</pre> <p>This command moves the transaction log truncation point to the end of the current transaction log (Oracle and Microsoft SQL Server).</p> |

Usage

- When `pdb_xlog` is invoked with no option, it returns the actual names (not synonyms or aliases) of all Replication Agent transaction log base objects in the primary database. For Oracle and Microsoft SQL Server, if you have initialized the Replication Agent, it returns the name of the component and the primary database instance name.

---

**Note** See the chapter for your specific primary data server in the Replication Agent *Primary Database Guide* for more information on Replication Agent object names.

---

- If `pdb_xlog` is invoked with no option, and the Replication Agent transaction log base objects do not exist in the primary database, or the RASD has not been initialized (for Oracle and Microsoft SQL Server), the command returns no information.
- If `pdb_xlog` is invoked with the `init` keyword, the truncation point is established at the end of the primary database transaction log.

---

**Note** For Microsoft SQL Server, during the `pdb_xlog` `init` process, Replication Agent may connect to the Microsoft SQL Server using `pds_dac_port_number`. For more information, see the Replication Agent *Primary Database Guide*.

---

- If `pdb_xlog` is invoked with the `init`, `force` keywords, the truncation point is moved to the end of the log if the Replication Agent is not already initialized. However, if the Replication Agent is already initialized, the truncation point is not moved.

---

**Note** `pdb_xlog` `init` with the `force` keyword should only be used when advised by Sybase Technical support.

---

- If `pdb_xlog` is invoked with the `move_truncpt` keyword, the truncation point is moved to the end of the log without change or modification to any Replication Agent components. (For Oracle, this is the end of the current online redo log.) The `move_truncpt` option has no effect if the Replication Agent has not been initialized.



---

**Note** To prevent Replication Server from requesting a log starting point that occurs earlier in the log than the location established by the `move_trunctp` option, the Replication Server's LTM locator value for the primary connection must be zeroed. Execute Replication Server System Database (RSSD) command `rs_zerohtm` against the primary database connection to zero the LTM locator.

---

- When `pdb_xlog` is invoked with the `init` keyword, Replication Agent does the following:
  - Generates a SQL script that creates the Replication Agent tables and procedures in the primary database.
  - Saves the generated script in a file called *partinit.sql* in the `RAX-15_I\inst_name\scripts\xlog` directory, where *inst\_name* is the name of the Replication Agent instance.

---

**Note** If the value of the `pdb_auto_run_scripts` configuration parameter is `false`, the *partinit.sql* script will be saved but not executed. However, you cannot manually run the script. To complete initializing Replication Agent, you must first set `pdb_auto_run_scripts` to `true`, then re-run the `pdb_xlog init` command.

---

- Executes the script to create the Replication Agent transaction log base objects in the primary database (if the value of the `pdb_auto_run_scripts` configuration parameter is `true`).
- After the script completes successfully, moves the *partinit.sql* file to the `RAX-15_I\inst_name\scripts\xlog\installed` directory.
- If the create script fails, it is stored in a file (*partinit.sql*) in the `RAX-15_I\inst_name\scripts\xlog` directory and the transaction log is not created. You can examine the script by viewing the *partinit.sql* file.
- If `pdb_xlog` is invoked with the `init` keyword and the Replication Agent objects already exist in the primary database or the RASD has been initialized (for Oracle and Microsoft SQL Server), then `pdb_xlog` returns an error message.
- When `pdb_xlog` is invoked with the `remove` keyword, Replication Agent does the following:

- For UDB, `pdb_xlog remove` command will uninstall the jar files from the primary database (the jars are installed by the `pdb_xlog init` command).

It is necessary to use `pdb_xlog remove` command to de-initialize Replication Agent for UDB, and remove the truncation stored procedures and jars from the database.

- Generates a SQL script that deletes the tables and procedures required for the transaction log base objects in the primary database.
- Saves the generated script in a file called *partdeinit.sql* in the *RAX-15\_I\inst\_name\scripts\xlog* directory, where *inst\_name* is the name of the Replication Agent instance.

---

**Note** If the value of the `pdb_auto_run_scripts` configuration parameter is false, the *partdeinit.sql* script will be saved but not executed automatically. You cannot manually run the script. To complete de-initializing Replication Agent, you must first set `pdb_auto_run_scripts` to true, then re-run the `pdb_xlog remove` command.

---

- Executes the script to delete the Replication Agent objects from the primary database (if the value of the `pdb_auto_run_scripts` configuration parameter is true).
- After the script completes successfully, moves the *partdeinit.sql* file to the *RAX-15\_I\inst\_name\scripts\xlog\installed* directory.
- If the script fails, it is stored in a file (*partdeinit.sql*) in the *RAX-15\_I\inst\_name\scripts\xlog* directory and the Replication Agent objects are not deleted from the primary database. You can examine the script by viewing the *partdeinit.sql* file.
- When `pdb_xlog` is invoked with the `remove` keyword followed by the `force` keyword, the *partdeinit.sql* script continues executing, even if errors occur. The `force` keyword may be useful when a previous `remove` operation failed and the *partdeinit.sql* script terminated with an error.
- If `pdb_xlog` is invoked with the `remove` keyword, and Replication Agent objects do not exist in the primary database or the RASD has not been initialized (for Oracle or Microsoft SQL Server), then `pdb_xlog` returns an error message.

- If `pdb_xlog` is invoked with the `remove` keyword and any objects in the primary database are still marked for replication, then `pdb_xlog` returns an error message.

You can use the `pdb_setrepproc` and `pdb_setreptable` commands to determine which stored procedures and tables in the primary database are still marked. You also can use the `pdb_setrepddl` command to determine if DDL is enabled.

Even if objects are marked in the primary database, you can use the `pdb_xlog` command with the `remove` keyword followed by the `force` keyword to unmark any marked objects, and then remove the transaction log objects.

- If `pdb_xlog` is invoked with no option, the command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.
- If `pdb_xlog` is invoked with either the `init` or `remove` keyword, the command is valid only when the Replication Agent instance is in the *Admin* state.
- For more information about the Replication Agent transaction log, see the chapter for your specific primary data server in the Replication Agent *Primary Database Guide*.

See also

`pdb_setrepcol`, `pdb_setrepproc`, `pdb_setreptable`, `pds_dac_port_xlog`, `ra_config`

## quiesce

Description

Stops all Replication Agent processing in *Replicating* state, and puts the Replication Agent instance in *Admin* state.

Syntax

`quiesce`

Usage

- When the `quiesce` command is invoked, it stops all current replication processing in the Replication Agent instance:
  - The Log Reader component stops reading operations from the transaction log when the scan reaches the end of the log. It continues to send change-set data to the Log Transfer Interface component until it finishes processing the last operation scanned.
  - The Log Transfer Interface component stops sending LTL commands to the Replication Server as soon as it finishes processing the last change set it receives from the Log Reader.

- When the Log Transfer Interface component is finished processing its input queue and sending the resulting LTL, the Replication Agent instance releases all of its connections to the primary database, and drops its connection to the primary Replication Server (and RSSD, if connected).
- The Replication Agent instance goes from *Replicating* state to *Admin* state.
- If the Replication Agent internal queues are full when the quiesce command is invoked, the quiesce processing may take a while to complete, and there may be a delay before the Replication Agent instance completes its transition to *Admin* state.
- Before moving the Replication Agent to the *Admin* state, the quiesce command waits until all data in the primary log has been read and sent to the Replication server.
- If the Replication Agent instance is in *Admin* state, the quiesce command returns an error.
- The quiesce command is valid only when the Replication Agent instance is in *Replicating* state.

---

**Note** The action of the suspend command is similar to that of the quiesce command, except that the suspend command stops Replication Agent processing immediately and flushes all data in the internal queues.

---

See also `ra_status`, `resume`, `shutdown`, `suspend`

## ra\_config

|             |                                                                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns help information for Replication Agent configuration parameters, or sets the value of a specified configuration parameter.                                                                                                                                                                             |
| Syntax      | <code>ra_config [param [, value]]</code>                                                                                                                                                                                                                                                                       |
| Parameters  | <p><i>param</i></p> <p>The name of a Replication Agent configuration parameter.</p> <p><i>value</i></p> <p>The value to be assigned to the configuration parameter specified in the <i>param</i> option. You can use the keyword <code>default</code> to set the specified parameter to its default value.</p> |

## Examples

**Example 1**

```
ra_config
```

When this command is issued with *no* parameters, it returns a list of all Replication Agent configuration parameters.

**Example 2**

```
ra_config use_rssd
```

This command returns the current value of the `use_rssd` configuration parameter.

**Example 3**

```
ra_config scan_sleep_max, 60
```

This command changes the value of the `scan_sleep_max` parameter to 60.

## Usage

- If `ra_config` is invoked with no option, it returns a list of all Replication Agent configuration parameters.
- If `ra_config` is invoked with the *param* option, it returns information only for the specified configuration parameter.
- If `ra_config` is invoked with the *param* and *value* options, it changes the setting of the specified configuration parameter to the value specified in the *value* option.
- You can use the keyword `default` in place of the *value* option to reset a configuration parameter to its default value. For example:

```
ra_config use_rssd, default
```

- The following information is returned for each configuration parameter:
  - Parameter name – the name of the parameter.
  - Parameter type – the datatype of the parameter’s value (for example, string, numeric, or Boolean).
  - Current value – the value of the parameter in effect at the time `ra_config` is invoked.
  - Pending value – if different from the current value, the value to which the parameter was set by a previous invocation of the `ra_config` command, but which has not yet taken effect.
  - Default value – the value of the parameter when the Replication Agent instance configuration file is created.

- Legal values – the values that are allowed for the parameter, for example, a range of numbers or a list of specific strings.
- Category – refers to the Replication Agent component affected by the value of the parameter.
- Restart – refers to parameters that require the Replication Agent instance to be shut down and restarted before a change in value takes effect.
- When `ra_config` is invoked with either no option, or only the `param` option, the command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.
- If `ra_config` is invoked when the Replication Agent instance is in *Replicating* state, with the `param` and `value` options for a parameter that can be changed only in *Admin* state, it returns an error.
- When `ra_config` is invoked with the `param` and `value` options, the command is always valid when the Replication Agent instance is in *Admin* state.
- See Chapter 2, “Configuration Parameters,” for more information.

See also `ra_help`, `ra_set_login`

## ra\_date

**Description** Returns the current date and time from the Replication Agent instance.

**Syntax** `ra_date`

**Usage**

- When `ra_date` is invoked, it returns the current date and time from the Replication Agent instance in the form of a Sybase datetime datatype, as follows:

```
Current RA Date

Jan 12 2008 12:09:47.310
(1 row affected)
```

- The `ra_date` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `pdb_date`, `ra_config`

## ra\_devicepath

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <hr/> <p>Changes the disk device path for a log device recorded in the RASD.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Syntax      | <code>ra_devicepath device, dev_path</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Parameters  | <p><i>device</i><br/>The device ID is the Oracle redo log “Group number.”</p> <p><i>dev_path</i><br/>The path that points to the disk log device for the device specified in the <i>device</i> option.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Examples    | <p>Example 1</p> <pre>ra_devicepath 3, d:\software\oracle\devices\redo001.log</pre> <p>This command specifies the disk device path to the log device ID “3” as:</p> <pre>d:\software\oracle\devices\redo001.log</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Usage       | <ul style="list-style-type: none"> <li>• When <code>ra_devicepath</code> is invoked, Replication Agent records the specified disk device path for the specified log device in the RASD.</li> <li>• To get information about log devices stored in the RASD, use the <code>ra_helpdevice</code> command.</li> <li>• If you invoke <code>ra_updatedevices</code> after you set a device path using <code>ra_devicepath</code>, you must use <code>ra_devicepath</code> again to re-set the path if you need to alter the default path for a log device. The default device path is the device path returned by the primary data server.</li> <li>• If you invoke <code>ra_devicepath</code> when the Replication Agent instance is in <i>Replicating</i> state, it returns an error.</li> <li>• The <code>ra_devicepath</code> command is valid only when the Replication Agent instance is in <i>Admin</i> state.</li> </ul> |
| See also    | <code>ra_helpdevice</code> , <code>pdb_xlog</code> , <code>ra_updatedevices</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## ra\_dump

Description Emulates the Replication Server `rs_dumppdb` and `rs_dumptran` system functions.

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Syntax     | <code>ra_dump [database transaction,] <i>dbname</i>, <i>dump_label</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters | <p><b>database</b><br/>A keyword that causes the primary Replication Server to apply the function string associated with the <code>rs_dumpdb</code> system function.</p> <p><b>transaction</b><br/>A keyword that causes the primary Replication Server to apply the function string associated with the <code>rs_dumptran</code> system function.</p> <p><b><i>dbname</i></b><br/>The name of the database to be dumped.</p> <p><b><i>dump_label</i></b><br/>A <code>varchar(30)</code> value that contains information to identify the database dump.</p>                                                                                                                                                    |
| Usage      | <ul style="list-style-type: none"><li>• When <code>ra_dump</code> is invoked, Replication Agent places a dump marker in the Replication Agent transaction log to facilitate coordinated dumps.</li><li>• The <code>ra_dump</code> command returns an error message if the transaction log does not exist.</li><li>• The <code>ra_dump</code> command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li><li>• For more information about the Replication Server <code>rs_dumpdb</code> and <code>rs_dumptran</code> system functions, refer to the Replication Agent <i>Administration Guide</i> and Replication Agent <i>Reference Manual</i>.</li></ul> |
| See also   | <code>ra_config</code> , <code>ra_migrate</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## ra\_help

|             |                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns help information for Replication Agent commands.                                                                                |
| Syntax      | <code>ra_help [<i>command</i>]</code>                                                                                                   |
| Parameters  | <p><b><i>command</i></b><br/>The name of a Replication Agent command for which you want to view help information.</p>                   |
| Examples    | <p><b>Example 1</b></p> <pre>ra_help</pre> <p>This command returns help for all Replication Agent commands.</p> <p><b>Example 2</b></p> |



```
ra_help pdb_gen_id
```

This command returns help for the `pdb_gen_id` command.

Usage

- If `ra_help` is invoked with no option, it returns help information for all Replication Agent commands.
- If `ra_help` is invoked with the *command* option, it returns help information only for the specified command.
- The `ra_help` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`ra_config`

## ra\_helparticle

Description

**Note** This command is available only for Oracle and Microsoft SQL Server.

Returns information about primary database articles from the RASD.

Syntax

```
ra_helparticle [article, [version]]
```

Parameters

*article*

The name or object ID of an article (table or procedure) in the primary database. Article names can be qualified with an owner name in the following form:

```
owner.article
```

Owner qualification of article names is optional.

*version*

A hexadecimal locator value that identifies the version of the article specified in the *article* option.

Examples

**Example 1**

```
ra_helparticle
```

This command returns information about all versions of all articles in the RASD.

**Example 2**

```
ra_helparticle table1
```

This command returns information about the current version of the article named “table1” in the RASD.

**Example 3**

```
ra_helparticle table1,
00000000000210a400003334000700003334000699940000d413c50000000000
```

This command returns information about version 00000000000210a400003334000700003334000699940000d413c50000000000 of the article named “table1” in the RASD.

Usage

- The ra\_helparticle command returns the following information for articles (tables and procedures):
  - Article object ID
  - Primary database name
  - Article owner name or alias
  - Article name
  - Article type (table or procedure)
  - Article status (Current, Archived, or Dropped)
  - Article version number

All information except the article type, article status, and article version number are the values returned by the primary database when the Replication Agent is initialized with the ra\_init command.

- If ra\_helparticle is invoked with no option, it returns information for all versions of all articles (tables and procedures) in the RASD.
- If ra\_helparticle is invoked with the *article* option, it returns information only for the current version of the specified article in the RASD.
- If ra\_helparticle is invoked with the *article* and *version* options, it returns information only for the specified version of the specified article in the RASD.
- The ra\_helparticle command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

ra\_helpdb, ra\_helpfield, ra\_helplocator, ra\_helpuser

## ra\_helppdb

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <hr/> <p>Returns information about the primary database from the RASD.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | ra_helppdb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Usage       | <ul style="list-style-type: none"> <li>When ra_helppdb is invoked, it returns the following information about the primary database: <ul style="list-style-type: none"> <li>Database object ID</li> <li>Database name</li> </ul> <p>The database ID and database name are the values returned by the primary database when the Replication Agent is initialized with the pdb_xlog init command.</p> </li> <li>The ra_helppdb command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li> <li>The ra_helppdb command is valid only after the RASD has been initialized, that is, only after you have executed pdb_xlog init.</li> </ul> |
| See also    | ra_devicepath, ra_helparticle, ra_helpdevice, ra_helpfield, ra_helplocator, ra_helpuser, ra_updatedevices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## ra\_helpdevice

|             |                                                                                                                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <hr/> <p>Returns information about primary database log devices from the RASD log device repository.</p> |
| Syntax      | ra_helpdevice [ <i>device</i> ]                                                                                                                                                                 |
| Parameters  | <p><i>device</i></p> <p>The device ID of the primary database log device.</p>                                                                                                                   |
| Examples    | <p><b>Example 1</b></p> <pre>ra_helpdevice</pre> <p>This command returns information about all primary database log devices recorded in the log device repository.</p>                          |

## Example 2

```
ra_helpdevice 1
```

This command returns information about the primary database log device ID “1” in the log device repository.

### Usage

- The `ra_helpdevice` command returns the following information for each primary database log device recorded in the RASD:

- Device ID – the log device ID defined by the primary data server.

---

**Note** For Oracle, the ID is the value of the Oracle Redo Log Group to which this file belongs.

---

- Database name – the name of the primary database associated with the log device.
- Device name – the logical name of the log device defined by the primary data server.
- Server device path – the path to a multiplexed version of the log device.
- Disk device path – the path to the log device (at the standby site).
- Disk device status – the current status of the server device path (ACCESSIBLE, NOT\_VALID, or OPEN).
- The log device ID, primary database name, log device name, and server log device path are values returned by the primary data server when the Replication Agent is initialized with the `pdb_xlog init` command, or when the log device repository is updated with the `ra_updatedevices` command.
- The disk device path is the current value recorded in the RASD. Replication Agent uses the disk device path recorded in its RASD to find each log device.

For each log device recorded in the RASD, you can set or change the disk device path with the `ra_devicepath` command.

If you do not specify a disk device path (using `ra_devicepath`), the value recorded for the disk device path is `DEFAULT`, and Replication Agent uses the value recorded for the server device path to find the log device.

- The disk device status is updated by the Log Reader component each time you invoke the `ra_helpdevice` command.

- If `ra_helpdevice` is invoked with no option, it returns information for all log devices recorded in the RASD log device repository.
- If `ra_helpdevice` is invoked with the `device` option, it returns information only for the specified log device.
- The `ra_helpdevice` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `ra_devicepath`, `ra_helpdb`, `ra_updatedevices`

## ra\_helpfield

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <hr/> <p>Returns information about primary database fields (columns in tables, or input parameters in stored procedures) from the RASD.</p>                                                                                                                                                                                                                                                                         |
| Syntax      | <code>ra_helpfield article [, version [, field]]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters  | <p><i>article</i></p> <p>The name or object ID of an article (table or procedure) in the primary database. Article names can be qualified with an owner name in the following form:</p> <pre>owner.article</pre> <p>Owner qualification of article names is optional.</p> <p><i>version</i></p> <p>A hexadecimal locator value that identifies the version of the specified article.</p> <p><i>field</i></p> <p>The name or object ID of a field (column or input parameter) in the specified article.</p> |
| Examples    | <p><b>Example 1</b></p> <pre>ra_helpfield authors</pre> <p>This command returns information about all fields in the current version of the article named <code>authors</code> in the RASD.</p> <p><b>Example 2</b></p> <pre>ra_helpfield authors,</pre>                                                                                                                                                                                                                                                    |

```
00000000000210a400003334000700003334000699940000d413c50000000000
```

This command returns information about all fields in version 00000000000210a400003334000700003334000699940000d413c50000000000 of the article named “authors” in the RASD.

**Example 3**

```
ra_helpfield authors,
00000000000210a400003334000700003334000699940000d413c50000000000, au_fname
```

This command returns information about the field named au\_fname in version 00000000000210a400003334000700003334000699940000d413c50000000000 of the article named “authors” in the RASD.

Usage

- The ra\_helpfield command returns the following information for fields:
  - Field (column or input parameter) object ID
  - Field name
  - Field type ID
  - Field datatype (with precision, length, and scale)
  - Field NULL mode
  - Field IDENTITY status
  - Field primary key status

All field information items are the values returned by the primary database when the Replication Agent is initialized with the pdb\_xlog init command.

- If ra\_helpfield is invoked with the *article* option, it returns information for all fields in the current version of the specified article in the RASD.
- If ra\_helpfield is invoked with the *article* and *version* options, it returns information for all fields in the specified version of the specified article in the RASD.
- If ra\_helpfield is invoked with the *article*, *version*, and *field* options, it returns information for the specified field in the specified version of the specified article in the RASD.
- The ra\_helpfield command is valid when the Replication Agent is in either *Admin* or *Replicating* state.
- No results are returned by this command if the RASD has not yet been initialized with the pdb\_xlog init command.

See also `ra_config`, `ra_help`, `ra_helpparticle`, `ra_helpdb`, `ra_helpdevice`, `ra_helplocator`, `ra_helpuser`

## ra\_helplocator

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <p>Returns information about fields in the LTM Locator value.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Syntax      | <code>ra_helplocator [locator_value]</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>locator_value</i></p> <p>The hexadecimal string value of an LTM Locator.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Examples    | <p><b>Example 1</b></p> <pre>ra_helplocator</pre> <p>This command returns information about fields in the current LTM Locator value.</p> <p><b>Example 2</b></p> <pre>ra_helplocator locator_value</pre> <p>This command returns information about fields in the specified LTM Locator value.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Usage       | <ul style="list-style-type: none"> <li>• The <code>ra_helplocator</code> command returns the following information about the LTM Locator value: <ul style="list-style-type: none"> <li>• Locator field names</li> <li>• Locator field hexadecimal values</li> <li>• Locator field decimal values</li> </ul> </li> <li>• If <code>ra_helplocator</code> is invoked with no option, it returns information about fields in the current LTM Locator value.</li> <li>• If <code>ra_helplocator</code> is invoked with the <i>locator_value</i> option, it returns information about fields in the specified LTM Locator value.</li> <li>• The <code>ra_helplocator</code> command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li> </ul> |
| See also    | <code>ra_config</code> , <code>ra_help</code> , <code>ra_locator</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

See the Replication Agent *Primary Database Guide* for more information about locator fields and contents.

## ra\_helpuser

|             |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p>                                                                                                                                                                                                                                                                                                               |
|             | <p>Returns information about primary database users from the RASD.</p>                                                                                                                                                                                                                                                                                                                               |
| Syntax      | <p>ra_helpuser [<i>user</i> [, <i>version</i>]]</p>                                                                                                                                                                                                                                                                                                                                                  |
| Parameters  | <p><i>user</i><br/>         The name or user ID of a user in the primary database.</p> <p><i>version</i><br/>         The version number of the database user in the RASD.</p>                                                                                                                                                                                                                       |
| Examples    | <p><b>Example 1</b></p> <pre>ra_helpuser</pre> <p>This command returns information about all users in the RASD.</p> <p><b>Example 2</b></p> <pre>ra_helpuser bob</pre> <p>This command returns information about all versions of the database user named “bob” in the RASD.</p> <p><b>Example 3</b></p> <pre>ra_helpuser bob, 00000000000210a400003334000700003334000699940000d413c50000000000</pre> |
|             | <p>This command returns information about version 00000000000210a400003334000700003334000699940000d413c50000000000 of the database user named “bob” in the RASD.</p>                                                                                                                                                                                                                                 |
| Usage       | <ul style="list-style-type: none"> <li>• The ra_helpuser command returns the following information about primary database users:             <ul style="list-style-type: none"> <li>• User ID</li> <li>• User name</li> <li>• User status (Current, Archived, or Dropped)</li> </ul> </li> </ul>                                                                                                     |



- Primary database version (locator value)

The user ID and user name are the values returned by the primary database when the Replication Agent is initialized with the `ra_init` command.

- If `ra_helpuser` is invoked with no option, it returns information about all users in the RASD.
- If `ra_helpuser` is invoked with the `user` option, it returns information about the specified user in all versions of the primary database in the RASD.
- If `ra_helpuser` is invoked with the `user` and `version` options, it returns information about the specified user in the specified version of the primary database in the RASD.
- The `ra_helpuser` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.
- No results are returned by this command if the RASD has not been initialized by the `ra_init` command.

See also

`ra_config`, `ra_help`, `ra_helpparticle`, `ra_helppdb`, `ra_helpdevice`, `ra_helpfield`, `ra_helplocator`

## ra\_locator

Description

Returns the current value of the LTM Locator maintained by the Replication Agent, requests an LTM Locator value from the primary Replication Server, or sets the value of the LTM Locator maintained by the Replication Agent to zero.

Syntax

```
ra_locator [update|zero]
```

Parameters

`update`

The optional keyword to request a new LTM Locator value from the primary Replication Server.

`zero`

The optional keyword to set the value of the LTM Locator stored in the Replication Agent transaction log to zero.

Examples

### Example 1

```
ra_locator
```

This command returns the current value of the LTM Locator maintained by the Replication Agent, as shown:

```
Locator

000000005200000000000000527FFFFFFFFFFFFFFFFF0022FB3B
(1 row affected)
```

**Example 2**

```
ra_locator update
```

This command requests a new LTM Locator value from the primary Replication Server.

**Example 3**

```
ra_locator zero
```

This command sets the value of the LTM Locator maintained by the Replication Agent to all zeros.

Usage

- When `ra_locator` is invoked with no option, it returns the current value of the LTM Locator maintained by the Replication Agent instance. For UDB, the Replication Agent stores the value of the LTM Locator in a table in the primary database; for Oracle and Microsoft SQL Server this value is stored in the RASD.

---

**Note** The value of the LTM Locator that is maintained by the Replication Agent is also known as the *origin queue ID*.

---

- When `ra_locator` is invoked with the `update` keyword, it requests a new LTM Locator value from the primary Replication Server, and the Replication Agent saves the value.

---

**Note** When the `ra_locator` command is invoked with the `update` keyword, the change takes effect only if the Replication Agent instance is in *Replicating* state.

---

- When `ra_locator` is invoked with the `zero` keyword, it sets the value of the LTM Locator maintained by the Replication Agent to zero.
- The LTM Locator contains information that the Replication Agent uses to determine where to start reading the transaction log.

Upon start-up or recovery from a connection failure, the Replication Agent automatically requests an LTM Locator value from the primary Replication Server.

- If the value of the LTM Locator returned from the primary Replication Server is zero, then Replication Agent uses the LTM Locator value stored in the transaction log system table.
- If the value of the LTM Locator in the transaction log system table is zero, then Replication Agent starts reading the transaction log from either the current beginning of the log, or from the end of the log for UDB.
- For more information about the format of the origin queue ID, see the chapter for your specific primary data server in the Replication Agent *Primary Database Guide*.
- If the Replication Agent transaction log does not exist, the `ra_locator` command returns an error message.
- The `ra_locator` command with the `zero` keyword is valid only when the Replication Agent instance is in *Admin* state.
- Without the `zero` keyword, the `ra_locator` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`pdb_gen_id`, `pdb_truncate_xlog`

## ra\_maintid

Description

Returns the login name of the primary database Maintenance User.

Syntax

`ra_maintid`

Usage

- Replication Server requires a Maintenance User login name for each database connection. The Maintenance User login name for a database connection is specified with the Replication Server `create connection` or `alter connection` command.

When the primary database Maintenance User login name is changed in the Replication Server (using the `alter connection` command), Replication Server automatically sends the new Maintenance User login name to the Replication Agent, if the Replication Agent is in *Replicating* state.

Each time the Replication Agent goes into *Replicating* state, it automatically retrieves the primary database Maintenance User login name from the primary Replication Server, and caches it.

- When `ra_maintid` is invoked, it returns the login name of the primary database Maintenance User that is cached, as follows:

```
Maintenance User

SYS
(1 row affected)
```

- If `ra_maintid` is invoked when the Replication Agent is in *Replicating* state, it always returns the correct Maintenance User login name.

If `ra_maintid` is invoked when the Replication Agent is in *Admin* state, it may not return the correct Maintenance User login name, because the Maintenance User login name could have changed in the Replication Server after the last time the Replication Agent retrieved the value and stored it.

- The `filter_maint_userid` configuration parameter is provided to support bidirectional replication, wherein the primary database also acts as a replicate database that has transactions applied to it by a Replication Server.

If the value of the `filter_maint_userid` parameter is true, database operations applied by the Maintenance User are *not* replicated from the primary database. When it reads the transaction log, the Replication Agent Log Reader component filters out data-changing operations applied by the Maintenance User.

- The `ra_maintid` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`ra_config`, `ra_statistics`

## ra\_marker

Description

Places a marker in the primary database transaction log.

Syntax

`ra_marker command_tag`

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameters | <i>command_tag</i><br>A varchar(255) value that contains information used for subscription materialization.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Examples   | <pre>ra_marker 'activate subscription 309 0 with suspension'</pre><br>This command places a marker object in the Primary Database transaction log that invokes the Replication Server <code>activate subscription</code> command.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage      | <ul style="list-style-type: none"> <li>• When <code>ra_marker</code> is invoked, the Replication Agent executes a transaction in the Primary Database that is captured in the Primary Database transaction log. The replicated transaction is sent as a marker object to the primary Replication Server.</li> <li>• The <code>ra_marker</code> command returns an error message if the Replication Agent transaction log does not exist.</li> <li>• The <code>ra_marker</code> command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li> <li>• For more information about the Replication Server <code>rs_marker</code> system function, refer to the Replication Server <i>Administration Guide</i> and Replication Agent <i>Reference Manual</i>.</li> </ul> |
| See also   | <code>ra_dump</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## ra\_migrate

|             |                                                                                                                                                                                                                                                                                                                            |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Performs any migration task (as necessary) between releases of Replication Agent.                                                                                                                                                                                                                                          |
| Syntax      | <code>ra_migrate</code>                                                                                                                                                                                                                                                                                                    |
| Parameters  | <i>None</i>                                                                                                                                                                                                                                                                                                                |
| Usage       | <ul style="list-style-type: none"> <li>• After upgrading to a new release of Replication Agent, you must first run this command to update to the latest version of the Replication Agent.</li> <li>• The <code>ra_migrate</code> command is valid when the Replication Agent instance is in <i>Admin</i> state.</li> </ul> |

## ra\_set\_login

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Sets the Replication Agent administrator login and password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Syntax      | <code>ra_set_login <i>username</i>, <i>password</i></code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Parameters  | <i>username</i><br>The login name of the Replication Agent administrator.<br><i>password</i><br>The password of the Replication Agent administrator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Examples    | <pre>ra_set_login bob3, bug3wag</pre> <p>This command sets the Replication Agent administrator login to “bob3” and the password to “bug3wag.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage       | <ul style="list-style-type: none"><li>• The Replication Agent administrator login has permission to log in to the Replication Agent instance through the administration port.</li><li>• Only one Replication Agent administrator login name is valid at any time.</li><li>• Any change in the Replication Agent administrator login or password takes place immediately, and you must use the new login and password the next time you log in to the Replication Agent instance.</li><li>• The password specified for the administrator login is encrypted in the Replication Agent configuration file.</li><li>• The <code>ra_set_login</code> command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li></ul> |
| See also    | <code>ra_config</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## ra\_statistics

|             |                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Returns performance-related statistics for Replication Agent components and the Java Virtual Machine (Java VM), or resets the statistics counters. |
|             | <hr/> <b>Note</b> The statistics counters may vary by primary database. <hr/>                                                                      |
| Syntax      | <code>ra_statistics [<i>component</i> reset]</code>                                                                                                |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameters | <p><i>component</i></p> <p>The optional keyword that identifies a Replication Agent component or the Java VM. Valid <i>component</i> keywords are:</p> <ul style="list-style-type: none"> <li>LR – Log Reader</li> <li>LTI – Log Transfer Interface</li> <li>LTM – Log Transfer Manager</li> <li>VM – Java Virtual Machine</li> </ul>                                                                                                                             |
|            | <p><i>reset</i></p> <p>The optional keyword that resets the statistics counters.</p>                                                                                                                                                                                                                                                                                                                                                                              |
| Examples   | <p><b>Example 1</b></p> <pre>ra_statistics</pre> <p>This command returns performance statistics for the Replication Agent instance and the Java VM.</p>                                                                                                                                                                                                                                                                                                           |
|            | <p><b>Example 2</b></p> <pre>ra_statistics reset</pre> <p>This command resets the statistics counters for the Replication Agent instance.</p>                                                                                                                                                                                                                                                                                                                     |
| Usage      | <ul style="list-style-type: none"> <li>• If you invoke <code>ra_statistics</code> with no option, it returns statistics for all Replication Agent components and the Java VM.</li> <li>• If you invoke <code>ra_statistics</code> with a <i>component</i> option, it returns statistics for the Log Transfer Manager component, as well as the component (or Java VM) you specify.</li> <li>• Table 1-2 lists the statistics returned for the Java VM.</li> </ul> |

**Table 1-2: Java VM statistics**

| Component | Statistic                 | Description                                                                                |
|-----------|---------------------------|--------------------------------------------------------------------------------------------|
| VM        | VM maximum memory         | Maximum memory (in bytes) available to the Java VM                                         |
| VM        | VM total memory allocated | Total memory (in bytes) allocated to the Java VM at start-up                               |
| VM        | VM free memory            | Memory (in bytes) allocated but not used by the Java VM                                    |
| VM        | VM memory usage           | Memory (in bytes) allocated and in use by the Java VM                                      |
| VM        | VM % max memory used      | Percentage of the maximum memory available to the Java VM, currently in use by the Java VM |

- Table 1-3 lists the statistics returned for the Log Transfer Manager component.

**Table 1-3: Log Transfer Manager statistics**

| Component | Statistic                     | Description                                                            |
|-----------|-------------------------------|------------------------------------------------------------------------|
| LTM       | Time statistics obtained      | Day, date, and time ra_statistics was invoked and information returned |
| LTM       | Time replication last started | Day, date, and time that <i>Replicating</i> state was entered          |
| LTM       | Time statistics last reset    | Day, date, and time that statistics counters were reset                |
| LTM       | Items held in Global LRUcache | Number of object references in the internal Least Recently Used cache  |

- Table 1-4 lists the Log Reader statistics for Microsoft SQL Server and UDB.

**Table 1-4: Log Reader statistics for Microsoft SQL Server and UDB**

| Component | Statistic                                    | Description                                                 |
|-----------|----------------------------------------------|-------------------------------------------------------------|
| LR        | Number of xlogs scanned                      | Number of operations read from log devices                  |
| LR        | Average unprocessed operations per XLog scan | Average number of unprocessed operations for each XLog scan |
| LR        | Average XLog scan time                       | Average XLog scan time for operations read from log devices |
| LR        | Number of operations replicated              | Number of operations that were successfully replicated      |



| Component | Statistic                                                       | Description                                              |
|-----------|-----------------------------------------------------------------|----------------------------------------------------------|
| LR        | Number of transactions replicated                               | Number of transactions that were successfully replicated |
| LR        | Number of XLog operations skipped (maint_user, unmarked tables) | Number of XLog operations that were skipped              |
| LR        | Average wait time on empty XLog                                 | Average time that the XLog was not in use                |
| LR        | Average PDB Service Time/Operations                             | Average service and operations time for each database    |
| LR        | Operation Queue Size                                            | The queue size used for the operations                   |
| LR        | Operation Data Hash Size                                        | The data hash size for the operations                    |
| LR        | Number of transactions truncated                                | Number of transactions that were truncated               |

- Table 1-5 lists the statistics returned for the Log Reader component for Oracle.

**Table 1-5: Log Reader statistics for Oracle**

| Component | Statistic                                  | Description                                                                                    |
|-----------|--------------------------------------------|------------------------------------------------------------------------------------------------|
| LR        | Total operations scanned                   | Number of operations read from log devices since last reset                                    |
| LR        | Total operations processed                 | Number of operations read from log devices and passed to LTI since last reset                  |
| LR        | Total operations skipped                   | Number of operations read from log devices and not processed for any reason since last reset   |
| LR        | Total maintenance user operations filtered | Number of Maintenance User operations read from log devices and skipped since last reset       |
| LR        | Avg operation processing time              | Average Log Reader operation processing time (in milliseconds) since last reset                |
| LR        | Total transactions processed               | Number of transactions read from log devices since last reset                                  |
| LR        | Total transactions skipped                 | Number of transactions read from log devices and not processed for any reason since last reset |
| LR        | Total transactions opened                  | Number of begin transaction commands read from log devices since last reset                    |

| <b>Component</b> | <b>Statistic</b>                              | <b>Description</b>                                                                                                                         |
|------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| LR               | Total transactions closed                     | Number of commit and rollback commands read from log devices since last reset                                                              |
| LR               | Total transactions committed                  | Number of commit commands read from log devices since last reset                                                                           |
| LR               | Total transactions aborted (rolled back)      | Number of rollback commands read from log devices since last reset                                                                         |
| LR               | Total system transactions skipped             | Number of system transactions read from log devices and skipped since last reset                                                           |
| LR               | Avg operations per transaction                | Average number of operations in each transaction read from log devices since last reset                                                    |
| LR               | Current scan buffer size                      | Current size (in bytes) of the Log Reader scan buffer                                                                                      |
| LR               | Current operation queue size                  | Current size (in bytes) of the Log Reader input queue                                                                                      |
| LR               | Current session cache size                    | Current size (in bytes) of the session cache                                                                                               |
| LR               | Log reposition point locator                  | Locator value of reposition point in log device                                                                                            |
| LR               | Last processed operation locator              | Locator value of most recently processed operation read from log devices                                                                   |
| LR               | Average xlog operation wait time (ms)         | Average time (in milliseconds) that Log Reader had to wait for each new operation to appear in the log since last reset                    |
| LR               | Average sender operation processing time (ms) | Average time (in milliseconds) that Log Reader sender took to process each operation since last reset                                      |
| LR               | Average sender operation wait time (ms)       | Average time (in milliseconds) that Log Reader sender had to wait to send each processed operation to the LTI input queue since last reset |
| LR               | Average ChangeSet send time (ms)              | Average time (in milliseconds) that Log Reader sender took to send each processed operation to the LTI input queue since last reset        |
| LR               | Total sender operations processed             | Number of operations that Log Reader sender processed since last reset                                                                     |
| LR               | Marked objects cache size                     | Current marked objects cache size                                                                                                          |

- Table 1-6 lists the statistics returned for the Log Transfer Interface component.

**Table 1-6: Log Transfer Interface statistics**

| <b>Component</b> | <b>Statistic</b>                           | <b>Description</b>                                                                                                                                     |
|------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| LTI              | Number of LTL commands sent                | Total number of LTL commands sent to Replication Server since last reset                                                                               |
| LTI              | Average LTL command size                   | Average size (in bytes) of each LTL command sent to Replication Server since last reset                                                                |
| LTI              | Average LTL commands/sec                   | Average number of LTL commands sent per second to Replication Server since last reset                                                                  |
| LTI              | Total bytes sent                           | Number of bytes sent to Replication Server since last reset                                                                                            |
| LTI              | Average Bytes/second during transmission   | Average bytes per second sent over connection to Replication Server since last reset                                                                   |
| LTI              | Average Replication Server turnaround time | Average time (in milliseconds) it takes Replication Server to acknowledge each LTL command buffer sent since last reset                                |
| LTI              | Average data arrival time                  | Average time (in milliseconds) LTI waits between receiving change sets from Log Reader since last reset                                                |
| LTI              | Average time to create distributes         | Average time (in milliseconds) LTI takes to convert a change-set into LTL since last reset                                                             |
| LTI              | Average LTL buffer cache time              | Average time (in milliseconds) it takes between placing the LTL commands into the LTL buffer to the time it is actually sent to the Replication Server |
| LTI              | Average LTL buffer size                    | Average size (in bytes) of each LTL buffer sent to Replication Server since last reset                                                                 |
| LTI              | Average LTM buffer utilization (%)         | Average utilization (in percentage of LTL buffer size) of each LTL buffer sent to Replication Server since last reset                                  |
| LTI              | Average LTL commands/buffer                | Average number of LTL commands per buffer sent to Replication Server since last reset                                                                  |
| LTI              | Input queue size                           | Current number of change sets in the LTI input queue                                                                                                   |
| LTI              | Output queue size                          | Current number of distributes in the LTI output queue                                                                                                  |

| Component | Statistic             | Description                                                         |
|-----------|-----------------------|---------------------------------------------------------------------|
| LTI       | Last QID sent         | Hex value of most recent origin queue ID sent to Replication Server |
| LTI       | Last transaction sent | Hex value of most recent transaction ID sent to Replication Server  |

- Statistics counters are reset automatically each time the Replication Agent instance goes into *Replicating* state.
- If you invoke `ra_statistics` with the `reset` keyword, Replication Agent immediately resets all of the statistics, except the following:
  - Time statistics obtained (LTM)
  - Time replication last started (LTM)
  - Time statistics last reset (LTM)
  - Last QID sent (LTI)
  - Last transaction ID sent (LTI)
  - All Java VM statistics

---

**Note** All Java VM statistics are refreshed each time you invoke `ra_statistics`.

---

- The `ra_statistics` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also `ra_status`

## ra\_status

**Description** Returns the current state of the Replication Agent instance.

**Syntax** `ra_status`

**Usage**

- When `ra_status` is invoked, it returns the current state of the Replication Agent instance, and a brief description of the current state, as follows:

```

State Action

ADMIN Waiting for operator command

```

(1 row affected)

---

**Note** If the first word in the description is “Transitioning,” the Replication Agent instance is in transition between states. Some commands are not valid when the Replication Agent instance is in state transition.

---

- Replication Agent states are:
  - *Admin* – in this state, the Replication Agent instance is running, but no connections are up. You can change any configuration parameter when the Replication Agent instance is in *Admin* state.
  - *Replicating* – in this state, the Log Reader component is scanning the transaction log for operations to replicate from the primary database. If there are operations to be replicated, the Log Transfer Interface component is sending LTL commands to the Replication Server.
  - *Replicating (Waiting at end of log)* – in this state, the Log Reader component has reached the end of the transaction log, the Replication Agent has finished processing all operations in the transaction log, and the Log Transfer Interface component has successfully sent LTL commands for all replicated operations to the Replication Server.

If the primary database is not quiesced or is otherwise inactive, transactions could arrive in the log immediately after the state is returned, so even though the state is returned as *Replicating (Waiting at end of log)*, the Replication Agent could actually be in *Replicating* state and processing log records.

See the Replication Agent *Administration Guide* for more information about Replication Agent states.

- The `ra_status` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`quiesce`, `ra_statistics`, `resume`, `shutdown`, `suspend`

## ra\_truncatearticles

Description

---

**Note** This command is available only for Oracle and Microsoft SQL Server.

---

Truncates unused articles in the RASD.

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Syntax     | ra_truncatearticles <i>locator</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters | <i>locator</i><br>The log locator value (LTM Locator) that identifies the cutoff point for truncating older versions of articles from the system data repository.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Usage      | <ul style="list-style-type: none"><li>When ra_truncatearticles is invoked, it truncates all non-current versions of all primary database articles in the system data repository older than the version identified by the <i>locator</i> value.<br/><br/>If the current (most recent) version of an article is older than the version identified by the <i>locator</i> value, it is not truncated.</li><li>Most common DDL commands and stored procedures executed in the primary database (such as alter table) are recorded in the transaction log, and replicated to the standby database. When it processes those DDL transactions for replication, Replication Agent updates its RASD automatically, creating a new version of the affected primary database articles.<br/><br/>Use ra_truncatearticles as part of a periodic maintenance procedure to prevent the RASD from growing indefinitely. See the Replication Agent <i>Administration Guide</i> for more information.</li></ul> <hr/> <p><b>Note</b> Be sure to back up the RASD using rasd_backup before you truncate it.</p> <hr/> <ul style="list-style-type: none"><li>The ra_truncatearticles command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li></ul> |
| See also   | ra_truncateusers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## ra\_truncateusers

---

|             |                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Note</b> This command is available only for Oracle and Microsoft SQL Server.<br><br>Truncates older versions of primary database users in the system data repository in the RASD. |
| Syntax      | ra_truncateusers <i>locator</i>                                                                                                                                                      |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameters | <i>locator</i><br>The log locator value (LTM Locator) that identifies the cutoff point for truncating older versions of database users from the system data repository.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Usage      | <ul style="list-style-type: none"> <li>When <code>ra_truncateusers</code> is invoked, it truncates all non-current versions of all primary database users in the system data repository older than the version identified by the <i>locator</i> value.</li> </ul> <p>If the current (most recent) version of a user is older than the version identified by the <i>locator</i> value, it is not truncated.</p> <ul style="list-style-type: none"> <li>The <code>ra_truncateusers</code> command is valid when the Replication Agent instance is in either <i>Admin</i> or <i>Replicating</i> state.</li> </ul> |
| See also   | <code>ra_truncatearticles</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## ra\_updatedevices

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <p>Updates information about primary database log devices in the RASD.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Syntax      | <code>ra_updatedevices</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Usage       | <ul style="list-style-type: none"> <li>For Oracle, when ASM manages the redo log files and the disk group is changed by either adding or dropping disks, you must invoke the <code>ra_updatedevices</code> command to be sure the log device repository is updated with correct ASM storage information.</li> <li>When <code>ra_updatedevices</code> is invoked, Replication Agent does the following: <ul style="list-style-type: none"> <li>Refreshes the archive log information</li> <li>Deletes all of the data in its log device repository</li> </ul> </li> </ul> <hr/> <p><b>Note</b> If the device location is set, it is not overwritten.</p> <hr/> <ul style="list-style-type: none"> <li>Queries the primary database for information about all of its log devices</li> <li>Re-populates the log device repository in the RASD with current information about primary database log devices returned by the primary database</li> </ul> |

- If any log device associated with the primary database is added, dropped, extended, or moved at the primary data server, you must:
  - Stop replication (using quiesce or suspend) to put the Replication Agent instance in *Admin* state
  - Invoke `ra_updateddevices` to update the log device repository in the RASD

See the Replication Agent *Administration Guide* for more information.

---

**Note** The primary database need not be quiesced when you update the log device repository.

---

- If the primary data server writes to a new (or altered) log device before you update the log device repository, the Replication Agent instance will stop replication processing and go to *Admin* state.

Sybase recommends that you coordinate all log device changes at the primary database with updating the Replication Agent log device repository.

- Because Replication Agent re-creates the entire log device repository when you invoke `ra_updateddevices`, any log device path that you modified previously (using `ra_devicepath`) is overwritten with the current log device information from the primary database.

For example:

```
ID=1 serverpath=/dev1 mirror=/dev1a
```

becomes the following when you change the `server` path to “dev44”:

```
ID=1 serverpath=/dev44 mirror=/dev1a
```

---

**Note** If you need to alter the “default” path for a log device (that is, the log device path returned by the primary database), you must use the `ra_devicepath` command *after* you invoke `ra_updateddevices`.

---

- For each log device recorded in the RASD, you can set or change the disk device path with the `ra_devicepath` command.

If you do not specify a disk device path (using `ra_devicepath`), the value recorded for the disk device path is `DEFAULT`, and Replication Agent uses the value recorded for the server device path to find the log device.



- The `ra_updatedevices` command is valid only when the Replication Agent instance is in *Admin* state.

See also `ra_devicepath`, `ra_helpdevice`

## ra\_version

**Description** Returns the version of the Replication Agent instance, the host operating system version, and the JRE version.

**Syntax** `ra_version`

**Usage** When `ra_version` is invoked, it returns the Replication Agent version string in a row, as follows:

```
Sybase Replication Agent for Unix &
Windows/15.1.0.5602/P/generic/JDK
5.0/main/5602/VM: Sun Microsystems Inc.
1.5.0_13/OPT/Fri Nov 30 03:42:03 MST 2007
```

See also `pdb_version`, `ra_status`, `ra_version_all`

## ra\_version\_all

**Description** Returns the name, type, and version of the Replication Agent instance, and version information for the primary data server, primary Replication Server, and communications drivers.

**Syntax** `ra_version_all`

---

**Note** For Oracle only. When the Replication Agent is configured to connect to ASM (an `asm_tns_connection` is configured with a non-null value that is not the default value), the `ra_version_all` command will include an additional line of output that describes the version of ASM that is being connected to. When `asm_tns_connection` is not configured, no ASM entry will be listed in the `ra_version_all` command output.

---

**Usage** • When `ra_version_all` is invoked, it returns the following information:

| Component | Version |
|-----------|---------|
|-----------|---------|

```

Instance: rao2 - Oracle
RepAgent: Sybase Replication Agent for Unix &
 Windows/15.1.0.5602/P/generic/JDK
 5.0/main/5602/VM: Sun Microsystems Inc.
 1.5.0_13/OPT/Fri Nov 30 03:03:03 MST 2007
JRE: Sun Microsystems Inc. Java(TM) 2 Runtime
 Environment, Standard Edition/1.5.0_13-b05/SunOS
 5.8/sparc/32
RASD: Sybase Adaptive Server
 Anywhere/9.0.2.3302/WindowsXP
Primary Data Server:Oracle Oracle9i Enterprise Edition Release
 10.2.0.1.0 - Production With the Partitioning, OLAP
 and ORACLE Data Mining options JServer
 Release 10.2.0.1.0 - Production
PDS JDBC Driver: Oracle JDBC driver 10.2.0.1.0
RepServer: Replication Server/15.0
 ESD#5/NT (IX86)/Windows 2000
 /1/OPT/Fri Jul 01 14:01:20 2005
RSSD: Sybase Adaptive ServerAnywhere/8.0.2.4322/WindowsXP

Sybase JDBC Driver:jConnect (TM) for JDBC(TM)/6.05(Build
 26169)/P/EBF15181/JDK14/Wed Oct 24 1:06:46 2007
```

See also `pdb_version`, `ra_status`, `ra_version`

## rasd\_backup

---

Description **Note** This command is available only for Oracle and Microsoft SQL Server.

---

Backs up the Replication Agent System Database (RASD).

Syntax `rasd_backup`

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Usage    | <ul style="list-style-type: none"> <li>When <code>rasd_backup</code> is invoked, it starts the database backup process for the RASD.</li> </ul> <hr/> <p><b>Note</b> Sybase recommends that you always back up the RASD before you truncate using <code>ra_truncatearticles</code> or <code>ra_truncateusers</code>.</p> <hr/> <ul style="list-style-type: none"> <li>Replication Agent places RASD backup files in the directory identified by the <code>rasd_backup_dir</code> configuration parameter.</li> </ul> <p>When you create a Replication Agent instance, a RASD backup directory is created automatically as part of the instance directory structure. The default value of the <code>rasd_backup_dir</code> parameter points to that directory.</p> <ul style="list-style-type: none"> <li>The <code>rasd_backup</code> command is valid when the Replication Agent instance is in <i>Admin</i> or <i>Replicating</i> state.</li> </ul> |
| See also | <code>rasd_restore</code> , <code>ra_truncatearticles</code> , <code>ra_truncateusers</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## rasd\_restore

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <p><b>Note</b> This command is available only for Oracle and Microsoft SQL Server.</p> <hr/> <p>Restores the RASD</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Syntax      | <p><code>rasd_restore</code></p> <hr/> <p><b>Note</b> After executing <code>rasd_restore</code>, Replication Agent should be restarted.</p> <hr/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Usage       | <ul style="list-style-type: none"> <li>When <code>rasd_restore</code> is invoked, it starts the restore process for the RASD.</li> <li>Replication Agent looks for the most recent RASD backup files in the directory identified by the <code>rasd_backup_dir</code> configuration parameter.</li> </ul> <p>When you create a Replication Agent instance, a RASD backup directory is created automatically as part of the instance directory structure. The default value of the <code>rasd_backup_dir</code> parameter points to that directory.</p> <ul style="list-style-type: none"> <li>If you invoke <code>rasd_restore</code> when the Replication Agent instance is in <i>Replicating</i> state, it returns an error.</li> <li>The <code>rasd_restore</code> command is valid only when the Replication Agent instance is in <i>Admin</i> state.</li> </ul> |

See also `rasd_backup`

## resume

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Starts replication processing in the Replication Agent instance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Syntax      | <code>resume</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Usage       | <ul style="list-style-type: none"><li>• When <code>resume</code> is invoked, the Replication Agent instance attempts to go to <i>Replicating</i> state and start replication operations, as follows:<ul style="list-style-type: none"><li>• Replication Agent attempts to open network connections to the primary database, primary Replication Server, and RSSD.<br/>If it fails to establish a connection, the Replication Agent logs a warning message in its system log, and it attempts to retry the connection, based on its configuration parameters for the connection.</li><li>• If the Replication Agent cannot establish a connection to the primary database after exhausting its configured retry attempts, it aborts all subsequent <code>resume</code> processing, returns to <i>Admin</i> state, and logs the error.</li><li>• Replication Agent requests the current LTM Locator value from the primary Replication Server, and it stores the value in the Replication Agent transaction log.</li><li>• The Log Reader component begins scanning the transaction log, looking for operations to be replicated. Log Reader begins scanning the log at the point identified by the LTM Locator value.</li><li>• When it finds transactions to replicate, Log Reader passes them (as change-set data) to the input queue of the Log Transfer Interface component.</li><li>• The Log Transfer Interface component reads the change-set data from its input queue, generates LTL commands, and places the LTL commands in its output queue for transmission to the Replication Server.</li></ul></li><li>• If any start-up operation fails, the Replication Agent instance returns to <i>Admin</i> state, and it logs the error.</li></ul> |

- If the resume command is successful, the Replication Agent instance goes to *Replicating* state. To determine the current state of the Replication Agent, use the `ra_status` command.
- The resume command returns an error under any of the following conditions:
  - The Replication Agent instance is already in *Replicating* state.
  - The system data repository in the RASD does not exist or is not initialized (Oracle and Microsoft SQL Server).
  - The Replication Agent connection configuration parameters are not set correctly, or it fails otherwise to connect with the primary database or the primary Replication Server.
  - The database connection for the primary database is not defined correctly in the primary Replication Server.
- If the resume command is successful, the Replication Agent instance goes into *Replicating* state.
- The resume command is valid only when the Replication Agent instance is in *Admin* state.

See also

`quiesce`, `ra_status`, `shutdown`, `suspend`

## rs\_create\_repdef

Description

**Note** This command is available only for Oracle and Microsoft SQL Server.

Creates a replication definition at Replication Server for a marked table and procedure, or for all marked tables and procedures.

**Note** Replication Agent 15.1 is pre-configured to match replication definition datatypes available in Replication Server 15.0 and later. If replication definitions are to be generated against an earlier version of Replication Server, this configuration needs to be changed. Contact Sybase Technical Support for assistance in making this adjustment.

Syntax

```
rs_create_repdef {all | name}
```

Parameters

*all*

A replication definition is created for all tables and procedures that are marked for replication.

*name*

A replication definition is created for the table or procedure specified by *name*.

---

**Note** This command always assumes that a database Replication definition exists for the primary database.

---

Usage

- This command always assumes that a database replication definition exists for the primary database. All replication definitions created by this command include the send standby clause, which means the replication definition will only be used by Replication Server if there is already a database level replication definition. The replication definition created by `rs_create_repdef` can not be individually subscribed to. If you do not wish to have a database level replication definition, you must use a different tool, or create replication definitions manually, and not use `rs_create_repdef`.
- Replication definitions created by `rs_create_repdef` will always define the datatypes using available UserDefinedDatatypes that are installed in Replication Server. This means that customers using `rs_create_repdef` should not set Replication Agent configuration property `pdb_convert_datetime` to true, as this will convert date and timestamp datatypes to Sybase format, instead of UDD format.
- Replication Agent configuration property `pdb_auto_create_repdefs` has the same result as executing command `rs_create_repdef`.
- When `rs_create_repdef` is invoked and the parameter “all” or “ALL” is entered, a replication definition is created for all tables or procedures that are marked for replication.
- When `rs_create_repdef` is invoked and the name of a table or procedure that is marked for replication is entered, a replication definition is created only for that table or procedure.
- For each table or procedure for which a replication definition create is attempted, a result set is returned. The result set contains the replication definition name and status of the create. If the replication definition was created, the status will be “created.” If an error occurred, an error message from Replication Server will be returned.

- The character case of the object names in the replication definition will be set according to the `tl_character_case` setting.
- The following applies to replication definition table and procedure names:
  - All non-alphanumeric characters and spaces are removed and are not part of the table or procedure name.
  - Underscores are kept as part of the name even though they are non-alphanumeric characters.
  - Periods are replaced with underscores.
- Replication definition names for tables always begin with the prefix “*ra\$*,” followed by a unique alphanumeric identifier (maximum of 8 characters), and ending with a table or object name. For example, for a replicate name of “My Table,” the resulting repdef name is “*ra\$0x7952\_mytable*.” For an especially long replicate name of “mytable89012345678901234567890” (30 characters), the resulting repdef name is “*ra\$0x7952\_mytable8901234567890*” (30 characters maximum).

See also `rs_drop_repdef`

## rs\_drop\_repdef

|             |                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <b>Note</b> This command is available only for Oracle and Microsoft SQL Server.<br><br>A replication definition at the configured Replication Server for a table and procedure is dropped.                                                                                                                                                                                             |
| Syntax      | <code>rs_drop_repdef name</code>                                                                                                                                                                                                                                                                                                                                                       |
| Parameters  | <i>name</i><br>A replication definition is dropped for that table or procedure.                                                                                                                                                                                                                                                                                                        |
| Usage       | <ul style="list-style-type: none"> <li>• When <code>rs_drop_repdef</code> is invoked, a replication definition for that table is dropped at the Replication Server.</li> <li>• When <code>rs_drop_repdef</code> is invoked and the name of a table or procedure that is marked for replication is entered, a replication definition is created for that table or procedure.</li> </ul> |

- For each table or procedure for which a replication definition is dropped, a result set is returned. The result set contains the table name and status of the create. If the replication definition was created, the status will be “dropped.” If an error occurred, an error message from Replication Server will be returned.
- The character case of the object names in the replication definition will be set according to the `tl_character_case` setting.
- The following applies to replication definition table and procedure names:
  - All non-alphanumeric characters and spaces are removed and are not part of the table or procedure name.
  - Underscores are kept as part of the name even though they are non-alphanumeric characters.
  - Periods are replaced with underscores.
- Replication definition names for tables always begin with the prefix “*ra\$*,” followed by a unique alphanumeric identifier (maximum of 8 characters), and ending with a table or object name. For example, for a replicate name of “My Table,” the resulting replication definition name is “*ra\$0x7952\_mytable*.” For an especially long replicate name of “mytable89012345678901234567890” (30 characters), the resulting replication definition name is “*ra\$0x7952\_mytable8901234567890*” (30 characters maximum).

See also `rs_create_repdef`

## rs\_ticket

**Description** Supports Replication Server `rs_ticket` processing by placing an `rs_ticket` marker in the Primary database transaction log. This command was created in support of the Replication Server `rs_ticket` feature.

**Syntax** `rs_ticket H1 [, H2[, H3 [, H4]]]`

**Parameters** *H1, H2, H3*

Each parameter contains from 1-10 characters. It is free form and is to be used as an identifier.

*H4*

It contains from 1-50 characters. It is free form and is also to be used as an identifier.



## Examples

**Example 1**

The following executes `rs_ticket` and monitors the processing time for the record identified by the four parameters (only one parameter is required):

```
rs_ticket test1, 1221, appxyz.monitoring_system
```

---

**Note** The parameters are optional, and can be used to identify or differentiate different executions of `rs_ticket` from one another.

---

It can be used independently or grouped with additional executions to allow processing times to be compared.

In this example, the following information will be sent to Replication Server.

```
rs_ticket 'V=1;H1=test1;H2=1221;H3=appxyz;
H4=monitoring_system;PDB(name)=hh:mm:ss.ddd'
```

where “name” is the name of the primary database.

When this command reaches the replicate database, Replication Server will add additional time values for the EXEC, DIST and DSI components of Replication Server. The final result seen by the replicate database will look similar to:

```
rs_ticket 'V=1;H1=test1;H2=1221;H3=appxyz;
H4=monitoring_system;PDB(name)=hh:mm:ss.ddd;
EXEC=hh:mm:ss.ddd;DIST=hh:mm:ss.ddd;
DSI(name)=hh:mm:ss.ddd;RDB(name)=hh:mm:ss.ddd'
```

You can use the information provided to monitor replication latency and performance. By using different or descriptive H1-H4 parameters, users can more easily identify which `rs_ticket` data matches the activity or timing of the command when entered at the primary database.

**Example 2**

To measure performance of a batch of work, you can surround the work with `rs_ticket` executions, similar to the following sequence:

(Execute in Replication Agent)

```
rs_ticket start
```

(Execute in primary data server)

```
execute replication benchmarks
```

(Execute in Replication Agent)

- `rs_ticket stop`
- Usage
- The Replication Server EXEC, DIST, and DSI modules parse and process `rs_ticket` subcommands.
  - There are no subscriptions for `rs_ticket`. DIST does not send `rs_ticket` to DSI unless there is at least one subscription from the replicate site.
- For more information regarding the `rs_ticket` usage in Replication Server, refer to the Replication Server documentation.

## shutdown

- Description Shuts down the Replication Agent instance, terminating its process.
- Syntax `shutdown [immediate]`
- Parameters `immediate`  
The optional keyword that shuts down the Replication Agent instance immediately.
- Usage
- When `shutdown` is invoked with no option, the Replication Agent starts a normal (graceful) shutdown.  
  
In a normal shutdown, the Replication Agent first quiesces, and then the process terminates. See `quiesce` on page 61 for more information about quiescing the Replication Agent.
  - When `shutdown` is invoked with the `immediate` keyword, the Replication Agent starts an immediate shutdown.  
  
In an immediate shutdown, the Replication Agent:
    - Stops all of its replication processing, without regard to transactions in process or in transit
    - Drops all of its connections
    - Terminates the application process
  - The `shutdown` command with the `immediate` keyword is valid at any time, when the Replication Agent instance is in any state, including transition between states.
  - The `shutdown` command with no keyword (normal shutdown) is valid when the Replication Agent instance is in either *Admin* or *Replicating* state, but not in state transition.

See also `quiesce`, `ra_status`, `resume`, `suspend`

## suspend

**Description** Stops all current replication processing and puts the Replication Agent instance into *Admin* state.

**Syntax** `suspend`

**Usage**

- When `suspend` is invoked, it stops all current replication processing in the Replication Agent instance.
  - The Log Reader component stops scanning the transaction log immediately, and the Log Transfer Interface component stops sending LTL to the Replication Server immediately.
  - Any data in the Replication Agent internal queues (input and output queues of the Log Reader and Log Transfer Interface components) is removed without further processing.
  - The Replication Agent instance immediately releases all of its connections to the primary database, and drops its connection to the primary Replication Server (and RSSD, if connected).
  - The Replication Agent instance goes from *Replicating* state to *Admin* state.

---

**Note** The action of the `quiesce` command is similar to that of the `suspend` command, except that `quiesce` allows pending transactions in the Replication Agent internal queues to be processed first, before putting the Replication Agent instance in *Admin* state.

---

- If the Replication Agent instance is in *Admin* state, the `suspend` command returns an error.
- The `suspend` command is valid only when the Replication Agent instance is in *Replicating* state.

See also `quiesce`, `ra_status`, `resume`, `shutdown`

## test\_connection

Description Tests Replication Agent connection configurations and network connectivity.

Syntax `test_connection [conn_name]`

Parameters *conn\_name*

The keyword for a Replication Agent connection to be tested. Valid keywords are:

- PDS – primary data server
- RS – primary Replication Server (and RSSD, if so configured)

---

**Note** If the value of the `use_rssd` configuration parameter is true, the `test_connection` command tests Replication Agent connectivity to the RSSD when it tests connectivity to the Replication Server. If the value of the `use_rssd` configuration parameter is false, the `test_connection` command does *not* test Replication Agent connectivity to the RSSD.

---

Examples

### Example 1

```
test_connection
```

This command tests all Replication Agent connections, including the primary data server connection, the primary Replication Server connection, and the RSSD connection (if so configured).

### Example 2

```
test_connection PDS
```

This command tests only the Replication Agent connection for the primary data server.

Usage

- When `test_connection` is invoked with no option, Replication Agent tests all of its connections by attempting to log in to the corresponding server for each connection, using the connection parameters stored in its configuration file.
- When `test_connection` is invoked with either the RS or PDS keyword, Replication Agent tests the specified connection.
- The `test_connection` command verifies both network connectivity and the following Replication Agent connection configuration parameters for the primary database:
  - connection type (connectivity driver and protocol) – `pds_connection_type`

- database name – pds\_database\_name
- data server name – pds\_server\_name
- Data source name (ODBC drivers only) – pds\_datasource\_name
- host machine name – pds\_host\_name
- port number – pds\_port\_number
- user login access – pds\_password and pds\_username

---

**Note** The test\_connection command does *not* validate Replication Agent user login permissions in the primary database. It verifies only that the user login and password specified in the pds\_username and pds\_password parameters can log in to the primary data server.

---

- The test\_connection command verifies both network connectivity and the following Replication Agent connection configuration parameters for the primary Replication Server (and RSSD, if so configured):
  - Database name – rssid\_database\_name (RSSD only)
  - Replication Server data source (as specified in the Replication Server primary database connection) – rs\_source\_db and rs\_source\_ds (Replication Server only)
  - Host machine name – rs\_host\_name (and rssid\_host\_name)
  - Network packet size – rs\_packet\_size (Replication Server only)
  - Port number – rs\_port\_number (and rssid\_port\_number)
  - User login access – rs\_password, rs\_username (and rssid\_password and rssid\_username)

---

**Note** The test\_connection command verifies that the Replication Agent user login (specified in the rs\_username and rs\_password parameters) has connect source permission in the primary Replication Server.

---

- The test\_connection command returns the connection type and its status, as follows:

```

Type Connection

PDS succeeded
RS succeeded

```

(2 rows affected)

If the connection status is failed, it indicates one of the following:

- The Replication Agent connection configuration parameters are not set correctly.
  - A network failure or communication error prevents the connection.
  - The server associated with the connection is down.
- If the connection status is failed, check the Replication Agent system log to determine the cause of the failure.

---

**Note** You may also need to check the system log of the server associated with the connection to determine the cause of the failure.

---

- See the Replication Agent *Administration Guide* for information about setting up Replication Agent connection configuration parameters.
- See Chapter 2, “Configuration Parameters,” for information about specific connection configuration parameters.
- The `test_connection` command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

`ra_config`, `ra_statistics`, `ra_status`

## trace

Description

Returns current trace flag settings, or changes trace flag settings for the Replication Agent instance.

Syntax

`trace [flag]all, [switch]`

Parameters

*flag*

The name of the trace flag to change the setting for.

*all*

A keyword that allows you to apply a switch value to all of the trace flags at once.

*switch*

A Boolean (true or false) value that enables or disables tracing for the trace point identified in the *flag* option.

## Usage

- The trace command is intended for use by Sybase Technical Support engineers when troubleshooting Replication Agent.
- When trace is invoked with no option, it returns the current settings for all Replication Agent trace flags.
- When trace is invoked with the *flag* and *switch* options, it changes the setting of the trace flag identified, and it returns the current (new) setting for the trace flag.
- When trace is invoked with the all keyword and a *switch* option, it sets all Replication Agent trace flags to the value specified in the *switch* option, and it returns the current (new) setting for all of the trace flags.
- Changes made with the trace command take effect immediately.
- When a trace flag is set to true, tracing is enabled for the trace points identified by the flag. When set to false, tracing is disabled for the trace points.
- Output from all trace points (except *LTITRACELTL*) is sent to the Replication Agent system log file. Use the *log\_system\_name* command to find the name and path of the Replication Agent system log file.
- Output from the *LTITRACELTL* trace point is sent to a separate trace output file named *LTITRACELTL.log*. To view the contents of the *LTITRACELTL.log* file, your file viewer must be capable of handling very long lines.

---

**Note** The *LTITRACELTL.log* file contains a human-readable representation of the LTL, not the actual LTL commands sent to the primary Replication Server.

---

- Table 1-7 lists Replication Agent trace flags:

**Table 1-7: Replication Agent trace flags**

| Trace flag        | Description                                                                |
|-------------------|----------------------------------------------------------------------------|
| <i>BMGRTRACE</i>  | When set to “true,” this flag enables Bean Management event tracing.       |
| <i>CACHETRC</i>   | When set to “true,” this flag enables tracing of internal cache events.    |
| <i>DBCCONTEXT</i> | When set to “true,” this flag turns on tracing of database context events. |
| <i>LATRC</i>      | When set to “true,” this flag traces general Log Administrator operations. |

| <b>Trace flag</b>  | <b>Description</b>                                                                                                             |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <i>LATRCSQL</i>    | When set to “true,” this flag traces SQL conversations between Log Administrator and the primary database.                     |
| <i>LICTRACE</i>    | When set to “true,” this flag traces feature license check-in/checkout events.                                                 |
| <i>LOGREADTRC</i>  | When set to “true”, turns on trace of database log reading.                                                                    |
| <i>LRTRACE</i>     | When set to “true,” this flag traces general execution of the Log Reader component.                                            |
| <i>LTITRACE</i>    | When set to “true,” this trace flag enables tracing operations of the Log Transfer Interface component.                        |
| <i>LTITRACELTL</i> | When set to “true,” this trace flag enables LTL statement tracing in the <i>LTITRACELTL.log</i> file.                          |
| <i>LTMCI</i>       | When set to “true,” causes tracing of LTM component interface invocations and LTM invocations of other components’ interfaces. |
| <i>LTLFMTTRC</i>   | When set to “true” this trace flag enables tracing of the LTL formatter.                                                       |
| <i>LTMHL</i>       | When set to “true,” causes highlights in the LTM execution path to be noted.                                                   |
| <i>LTMSC</i>       | When set to “true,” causes tracing of all Replication Agent state changes.                                                     |
| <i>RACONTRC</i>    | When set to “true,” causes tracing of connection and query execution.                                                          |
| <i>RACONTRCSQL</i> | When set to “true,” causes tracing of SQL statements to be executed.                                                           |
| <i>RASDTRC</i>     | (For Oracle and Microsoft SQL Server) When set to “true,” turns on tracing of Replication Agent System Data Repository events. |
| <i>RATRACE</i>     | When set to “true,” causes tracing of Replication Agent events.                                                                |
| <i>STMTRACE</i>    | When set to “true,” causes tracing of LTM state monitor events.                                                                |
| <i>THREADTRC</i>   | When set to “true,” logs ThreadPool trace events.                                                                              |

- You *cannot* change the settings of SYSTEM trace flags.

Table 1-8 lists Replication Agent SYSTEM trace flags:



**Table 1-8: Replication Agent SYSTEM trace flags**

| <b>Trace flag</b>  | <b>Description</b>                                                              |
|--------------------|---------------------------------------------------------------------------------|
| <i>CONFIG</i>      | Configuration change event logged.                                              |
| <i>ERROR</i>       | Serious error; manual intervention may be needed to recover.                    |
| <i>FATAL</i>       | Critical error; application shut down; manual intervention required to recover. |
| <i>INFORMATION</i> | Information only; no action required.                                           |
| <i>WARNING</i>     | Minor error; operation not affected, or problem is recoverable.                 |

- The trace command is valid when the Replication Agent instance is in either *Admin* or *Replicating* state.

See also

log\_system\_name



# Configuration Parameters

This chapter describes the Replication Agent configuration file and configuration parameters.

| Topic                             | Page |
|-----------------------------------|------|
| Configuration parameter overview  | 109  |
| Configuration parameter reference | 111  |

## Configuration parameter overview

Configuration parameters record the user-configurable settings that control how a Replication Agent instance operates. The current values of all configuration parameters are stored in the *configuration* file of each Replication Agent instance.

## Replication Agent configuration file

The configuration file is created automatically when you create a Replication Agent instance. It resides in the instance subdirectory, under the Replication Agent base directory.

The configuration file is named after the Replication Agent instance, with the extension *.cfg* (for example, if the instance is named “my\_ra,” the configuration file is *my\_ra.cfg*).

Each time a Replication Agent instance starts up, it reads the configuration file to get the configuration information it needs to run. After start-up, the only time the Replication Agent accesses the configuration file is when the *ra\_config* or *ra\_set\_login* command is invoked to change the value of a configuration parameter.

When the value of a configuration parameter is changed, Replication Agent saves the new value, overwriting the entire configuration file.

## Configuration file format

The configuration file is a flat ASCII file that contains configuration information for a single Replication Agent instance.

The first two lines in the configuration file identify the file as a Replication Agent configuration file and record the time that the file was last modified. For example:

```
#RA Property File
#Fri Jan 12 07:33:18 MST 2008
```

Each configuration parameter name appears on a separate line, followed by the equal symbol (=) and the current value of the parameter. For example:

```
compress_ltl_syntax=true
```

If the Replication Agent instance is not running, you can view the configuration file to examine the current Replication Agent configuration.

---

**Note** Sybase recommends that you do *not* edit the configuration file, because Replication Agent overwrites the entire configuration file every time the `ra_config` or `ra_set_login` command is invoked to change a parameter value.

---

If the Replication Agent instance is running, use the `ra_config` command to view the current Replication Agent configuration.

## Changing configuration parameters

To view, set, or change the current value of a Replication Agent configuration parameter, use the `ra_config` command.

To change the current Replication Agent administrator login (`ltm_admin_user`) or administrator password (`ltm_admin_pw`), you must use the `ra_set_login` command.

---

**Note** The `ltm_admin_user` and `ltm_admin_pw` parameters cannot be changed with the `ra_config` command, and they do not appear in the parameter list returned by `ra_config`.

---

See Chapter 1, “Command Reference,” for more information about using the `ra_config` and `ra_set_login` commands.

## Copying a Replication Agent configuration

When you create a new Replication Agent instance with the `ra_admin` utility, you can specify the new instance to use the same configuration parameter values as an existing Replication Agent instance.

---

**Note** When you copy an existing configuration instance when creating a new Replication Agent instance, certain configuration parameter values are not copied to the new configuration. See the Replication Agent *Administration Guide* for more information.

---

If you do not copy an existing configuration when you create a new Replication Agent instance, the `ra_admin` utility creates a default configuration file, with default values for all configuration parameters.

## Configuration parameter reference

Table 2-1 lists all of the Replication Agent configuration parameters and a brief description of each parameter. The `targets` column indicates when the parameter is used for “All” targets or specific targets; Oracle, Microsoft SQL Server (MSSQL), or DB2 UDB (UDB).

**Table 2-1: Replication Agent configuration parameters**

| Parameter name                  | Target | Description                                                                                                             |
|---------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------|
| <code>admin_port</code>         | All    | Port number that the Replication Agent will use to listen for administrative connections.                               |
| <code>asm_password</code>       | Oracle | Password for Oracle Automatic Storage Management (ASM) access for the user specified in the <code>asm_username</code> . |
| <code>asm_tns_connection</code> | Oracle | Identifies the Oracle ASM connection name found in the <code>tnsnames.ora</code> file.                                  |
| <code>asm_tns_filename</code>   | Oracle | Identifies the Oracle <code>tnsnames.ora</code> filename where the ASM connection information is located.               |
| <code>asm_username</code>       | Oracle | Identifies the Oracle user name to be used when connecting to the ASM server.                                           |
| <code>column_compression</code> | All    | Use minimal column information in LTL.                                                                                  |

| Parameter name         | Target          | Description                                                                                                                       |
|------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| compress_lti_syntax    | All             | Use abbreviated LTL syntax.                                                                                                       |
| connect_to_rs          | All             | Enable/disable connection from LTI to Replication Server.                                                                         |
| ddl_password           | Oracle<br>MSSQL | Password for ddl_username.                                                                                                        |
| ddl_username           | Oracle<br>MSSQL | The database user name included in LTL for replicating DDL commands to the replicate database.                                    |
| dump_batch_timeout     | All             | Number of seconds to wait before sending an incomplete LTL buffer to Replication Server.                                          |
| filter_maint_userid    | All             | Log Reader filters operations with maintenance user ID.                                                                           |
| function_password      | All             | Password for user ID passed in LTL with replicated stored procedure invocations.                                                  |
| function_username      | All             | User ID passed in LTL with replicated stored procedure invocations.                                                               |
| log_backup_files       | All             | Determines the number of log backup files kept in the log directory.                                                              |
| log_directory          | All             | Directory where Replication Agent system log file is located.                                                                     |
| log_trace_verbose      | All             | Switch on/off verbose mode in trace log file.                                                                                     |
| log_wrap               | All             | Number of 1KB blocks written to log file before wrapping.                                                                         |
| lr_ntext_byte_order    | Oracle<br>MSSQL | Specifies which byte order to use when replicating NCLOB for Oracle, and NTEXT for Microsoft SQL Server.                          |
| lti_batch_mode         | All             | Switches on/off LTI batch mode.                                                                                                   |
| lti_max_buffer_size    | All             | Maximum number of change sets stored in the LTI input buffer.                                                                     |
| lti_update_trunc_point | All             | Number of LTL commands sent before LTI requests new LTM Locator.                                                                  |
| ltl_batch_size         | All             | Size of the LTL batch buffer.                                                                                                     |
| ltl_big_endian_unitext | All             | Specifies whether unicode LOB data should be converted from little endian to big endian before sending LTL to Replication Server. |
| ltl_character_case     | All             | Case of database object names sent to Replication Server.                                                                         |

| Parameter name             | Target          | Description                                                                                                                                                                 |
|----------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ltl_origin_time_required   | All             | Specifies whether to send origin_time command tag in LTL.                                                                                                                   |
| ltl_send_only_primary_keys | All             | Controls whether the Replication Agent sends only primary key columns data for the <i>before</i> image for update and delete operations.                                    |
| ltm_admin_pw               | All             | Password for Replication Agent administrative port.                                                                                                                         |
| ltm_admin_user             | All             | User ID for Replication Agent administrative port.                                                                                                                          |
| max_ops_per_scan           | All             | Maximum number of operations Log Reader will read in a single log scan.                                                                                                     |
| pdb_archive_path           | Oracle<br>UDB   | Identifies the directory path where the Replication Agent expects to find archived Oracle redo log files or the archived UDB transaction log files.                         |
| pdb_archive_remove         | Oracle<br>UDB   | Enables or disables the removal of archived transaction log files from the path specified by <code>pdb_archive_path</code> .                                                |
| pdb_auto_create_repdefs    | Oracle<br>MSSQL | If set to true, when tables and procedures are marked for replication, a replication definition is automatically created at Replication Server for that table or procedure. |
| pdb_automark_tables        | Oracle<br>MSSQL | Determines if the Replication Agent automatically marks tables for replication during initialization or DDL replication.                                                    |
| pdb_auto_run_scripts       | All             | Automatic execution of SQL scripts used to create/remove transaction log objects and mark/unmark primary database objects.                                                  |
| pdb_convert_datetime       | All             | Converts native date/time formats to Sybase datetime format.                                                                                                                |
| pdb_dflt_column_repl       | All             | Enables replication for LOB columns by default when table is marked.                                                                                                        |
| pdb_dflt_object_repl       | Oracle<br>UDB   | Enables replication by default when object is marked.                                                                                                                       |
| pdb_include_archives       | Oracle          | Enables or disables the use of Oracle archive log files.                                                                                                                    |

| Parameter name               | Target | Description                                                                                                                                                    |
|------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pdb_support_large_identifier | All    | To support replication of large identifiers up to 255 characters in length with Replication Server 12.6 or later.                                              |
| pdb_timezone_file            | Oracle | Specifies the file to read at Replication Agent initialization to obtain Oracle time zone information.                                                         |
| pdb_xlog_device              | All    | Name of the primary database device.                                                                                                                           |
| pdb_xlog_prefix              | All    | Character string prefix used to identify transaction log objects.                                                                                              |
| pdb_xlog_prefix_chars        | All    | Non-alphabetic characters allowed in <code>pdb_xlog_prefix</code> .                                                                                            |
| pds_connection_type          | All    | Type of connection to primary data server.                                                                                                                     |
| pds_dac_port_number          | MSSQL  | The primary database dedicated administrative connection port number used by Replication Agent during the server level initialization of the primary database. |
| pds_database_name            | All    | Name of database replicated from the primary data server.                                                                                                      |
| pds_datasource_name          | UDB    | Data source name or database alias of the database replicated from the primary data server.                                                                    |
| pds_host_name                | All    | Name of primary data server host machine.                                                                                                                      |
| pds_integrated_security      | MSSQL  | Determines if the Replication Agent should use Windows authentication when connecting to the primary SQL Server.                                               |
| pds_password                 | All    | Password for user ID that the Replication Agent uses to access the primary data server.                                                                        |
| pds_port_number              | All    | Port number for the primary data server.                                                                                                                       |
| pds_retry_count              | All    | Number of times to retry connection to primary data server.                                                                                                    |
| pds_retry_timeout            | All    | Number of seconds to wait between connection retry attempts.                                                                                                   |
| pds_server_name              | All    | Server name of primary data server.                                                                                                                            |



| Parameter name       | Target          | Description                                                                                                                                 |
|----------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| pds_tns_connection   | Oracle          | Oracle connection name found in the <i>tnsmame.ora</i> file which identifies the connection information for the primary database.           |
| pds_tns_filename     | Oracle          | Oracle file name identifying the Oracle <i>tnsname.ora</i> file to be used to identify the connection information for the primary database. |
| pds_username         | All             | User ID that Replication Agent uses to access primary data server.                                                                          |
| ra_retry_count       | All             | Number of times LTM attempts to get back to <i>Replicating</i> state after a failure.                                                       |
| ra_retry_timeout     | All             | Number of seconds to wait between LTM attempts to get back to <i>Replicating</i> state.                                                     |
| rasd_backup_dir      | Oracle<br>MSSQL | The directory path for Replication Agent System Database (RASD) backup files.                                                               |
| rasd_database        | Oracle<br>MSSQL | The directory path for the Replication Agent System Database (RASD) database file.                                                          |
| rasd_mirror_tran_log | Oracle<br>MSSQL | Enables or disables Replication Agent System Database (RASD) transaction log mirroring.                                                     |
| rasd_trace_log_dir   | Oracle<br>MSSQL | The directory path for the Replication Agent System Database (RASD) trace log file.                                                         |
| rasd_tran_log        | Oracle<br>MSSQL | The directory path for the Replication Agent System Database (RASD) transaction log file.                                                   |
| rasd_tran_log_mirror | Oracle<br>MSSQL | The directory path for the Replication Agent System Database (RASD) transaction log file mirror.                                            |
| rs_charset           | All             | Character set used to communicate with Replication Server.                                                                                  |
| rs_host_name         | All             | Name of primary Replication Server host machine.                                                                                            |
| rs_packet_size       | All             | Network I/O packet size sent to Replication Server.                                                                                         |
| rs_password          | All             | Password for user ID Replication Agent uses to access Replication Server.                                                                   |

| Parameter name       | Target | Description                                                                                                 |
|----------------------|--------|-------------------------------------------------------------------------------------------------------------|
| rs_port_number       | All    | Port number for primary Replication Server.                                                                 |
| rs_retry_count       | All    | Number of times to retry connection to primary Replication Server.                                          |
| rs_retry_timeout     | All    | Number of seconds to wait between connection retry attempts.                                                |
| rs_source_db         | All    | Name of primary database identified to Replication Server.                                                  |
| rs_source_ds         | All    | Name of primary data server identified to Replication Server.                                               |
| rs_username          | All    | User ID that Replication Agent uses to access primary Replication Server.                                   |
| rssd_charset         | All    | Character set used to communicate with RSSD.                                                                |
| rssd_database_name   | All    | Name of RSSD database.                                                                                      |
| rssd_host_name       | All    | Name of RSSD host machine.                                                                                  |
| rssd_password        | All    | Password for user ID Replication Agent uses to access RSSD.                                                 |
| rssd_port_number     | All    | Port number for RSSD.                                                                                       |
| rssd_username        | All    | User ID that Replication Agent uses to access RSSD.                                                         |
| scan_sleep_increment | All    | Number of seconds to increase Log Reader wait before next scan after finding no operations to replicate.    |
| scan_sleep_max       | All    | Maximum number of seconds for Log Reader to wait before next scan after finding no operations to replicate. |
| skip_lti_errors      | All    | LTI ignores error messages returned by Replication Server.                                                  |
| structured_tokens    | All    | LTI uses structured tokens when generating LTL output.                                                      |
| truncation_interval  | All    | Number of minutes to wait between automatic log truncations.                                                |
| truncation_type      | All    | Methods of log truncation allowed.                                                                          |
| use_rssd             | All    | Switches on/off access to RSSD for replication definitions.                                                 |

The following subsections list all of the Replication Agent configuration parameters in alphabetical order.

## admin\_port

The client socket port number of the Replication Agent.

Default

10000

Value

A valid port number on the Replication Agent host machine.

Comments

- When you create a Replication Agent instance, you must specify a client socket port number for the instance administration port. Client applications use this port number to connect to the Replication Agent instance.
- You must specify a port number that does not conflict with any port numbers already in use on the Replication Agent host machine.
- If you change the value of the `admin_port` parameter with the `ra_config` command, the new value is recorded in the configuration file immediately, but you must shut down and restart the Replication Agent instance to make the new port number take effect.
- After you change the value of the `admin_port` parameter with the `ra_config` command, the next time you log in to the Replication Agent administration port, you must use the new port number.

## asm\_password

---

**Note** This parameter is available only for Oracle.

---

The password associated with the configuration parameter `asm_username` user to access the Oracle Automatic Storage Management (ASM) server instance.

Default

"" (empty string)

Value

A valid password.

Comments

- Setting of the configuration parameter is only required when the Oracle ASM product is being used to manage Oracle online redo or archive redo storage.
- The value of the `asm_password` parameter is encrypted in the Replication Agent instance configuration file.
- See also, `asm_tns_connection`, `asm_tns_filename`, `asm_username`.

## asm\_tns\_connection

---

**Note** This parameter is available only for Oracle.

---

The Oracle connection name that identifies the connection properties for the Oracle Automatic Storage Management (ASM) connection in the Oracle *tnsnames.ora* file. If configuration parameter `asm_tns_filename` is not configured, the *tnsnames.ora* file identified by `pds_tns_filename` will be used. If the configuration property `asm_tns_filename` is not configured, the *tnsnames.ora* file identified by `pds_tns_filename` will be used.

Default <not configured>

Value A valid ASM connection name from the Oracle *tnsnames.ora* file specified by either the `asm_tns_filename` or `pds_tns_filename` configuration parameter.

Comments

- Setting of the configuration parameter is only required when the Oracle ASM product is being used to manage Oracle online redo or archive redo storage
- See also, `pds_tns_filename`, `asm_tns_filename`, `asm_username`, `asm_tns_password`.

## asm\_tns\_filename

---

**Note** This parameter is available only for Oracle.

---

The fully-qualified file name identifying the Oracle *tnsnames.ora* file that contains the Oracle ASM connection properties. This configuration property is only required when the connection property information required for ASM does not exist in the *tnsnames.ora* file pointed to by the `pds_tns_filename` configuration parameter.

Default <not configured>

Value A valid Oracle *tnsnames.ora* file that contains the connection properties to the Oracle ASM server. This file normally resides in the ASM instance's `ORACLE_HOME\network\admin` directory.

---

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments | <ul style="list-style-type: none"> <li>Setting of the configuration parameter is only required when the Oracle ASM product is being used to manage Oracle online redo or archive redo storage.</li> <li>This parameter is only required when the <code>pds_tns_filename</code> configuration property is not populated, or the <code>tnsnames.ora</code> file pointed to by configuration property <code>pds_tns_filename</code> does not contain the connection definition for the ASM connection to be used (this may occur if the primary Oracle instance and ASM instance was installed in different <code>ORACLE_HOME</code> locations, resulting in different <code>tnsnames.ora</code> files for each server).</li> </ul> <hr/> <p><b>Warning!</b> The Replication Agent process must have <i>read</i> permission to this file. Access failures will prevent the Replication Agent from connecting to the Oracle ASM server.</p> <hr/> <ul style="list-style-type: none"> <li>See also, <code>pds_tns_filename</code>, <code>asm_tns_filename</code>.</li> </ul> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## asm\_username

---

**Note** This parameter is available only for Oracle.

---

The login name that the Replication Agent uses to access the Oracle ASM server.

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default  | <not configured>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Value    | A valid Oracle ASM user name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Comments | <ul style="list-style-type: none"> <li>Setting of the configuration parameter is only required when the Oracle ASM product is being used to manage Oracle online redo or archive redo storage</li> <li>The value of the <code>asm_username</code> parameter is the login name that the Replication Agent uses to log in to the Oracle ASM server that is managing storage for Oracle online or archived redo logs.</li> <li>This login name must be defined in the ASM server, with appropriate privileges to query ASM system views.</li> <li>The Replication Agent uses this login to query ASM in order to determine Oracle online or archived redo log locations.</li> </ul> |

- To remove archive log files from ASM that are no longer required for Replication, the user must have update privileges in ASM.
- See also, `asm_tns_connection`, `asm_tns_filename`, `asm_password`, `pds_archive_remove`.

## column\_compression

Determines whether the Log Transfer Interface component sends all columns in row *after* images, or only the columns that changed in an update operation.

Default

true

Values

true – enables minimal column information (only changed columns in row after images) in Log Transfer Language (LTL) for update operations.

false – disables minimal column information in LTL for update operations.

Comments

- When the `column_compression` parameter is set to false, the LTI component sends complete row *after* images in LTL, including columns in which no data changed as a result of an update operation.
- When the `column_compression` parameter is set to true, the LTI component sends minimal column information in the row after images in LTL, with only the columns that changed as a result of an update operation. Columns in which no data changed as a result of the update are not sent in LTL.
- In general, setting the value of the `column_compression` parameter to true provides better Replication Agent throughput.

## compress\_ltl\_syntax

Determines whether the Log Transfer Interface component compresses Log Transfer Language (LTL) commands using abbreviated syntax.

Default

true

Values

true – enables LTL compression, using abbreviated LTL syntax.

false – disables LTL compression.

Comments

- Setting the value of the `compress_ltl_syntax` parameter to true will provide better Replication Agent throughput.
- See the Replication Agent *Administration Guide* for more information about LTL commands and abbreviated LTL syntax.

## connect\_to\_rs

Enables or disables the network connection to the primary Replication Server.

Default

true

Values

true – enables the network connection to the Replication Server.

false – disables the network connection to the Replication Server.

Comments

- When the value of the connect\_to\_rs parameter is false, the network connection from the Replication Agent to the Replication Server is disabled, and no replication can occur.
- When the network connection to the Replication Server is disabled by the connect\_to\_rs parameter, the Replication Agent instance can still go to *Replicating* state, with the following limitations:
  - A “dummy” connection in the Replication Agent emulates a real connection to the Replication Server.
  - The value of the LTM Locator stored in the Replication Agent transaction log is set to zero.
  - The Maintenance User name is set to an invalid user ID.

---

**Note** Maintenance User operations cannot be filtered when the value of the connect\_to\_rs parameter is false.

---

- You can use the connect\_to\_rs parameter to temporarily disable the network connection to the Replication Server for testing.
- When the value of the connect\_to\_rs parameter is false, you can put the Replication Agent instance in *Replicating* state, set the value of the LTITRACELTL trace flag to true, and view a readable representation of the LTL that would have been sent to the Replication Server if the connection had not been disabled.
- During normal Replication Agent operation, the value of the connect\_to\_rs parameter must be true.

## ddl\_password

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

|          |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Updates the log device repository in the RASD. Identifies the password for <code>ddl_username</code> .                                                                                                                                                                                                                                                                                                                      |
| Default  | "" (empty string)                                                                                                                                                                                                                                                                                                                                                                                                           |
| Value    | A valid password.                                                                                                                                                                                                                                                                                                                                                                                                           |
| Comments | <ul style="list-style-type: none"><li>• The value of the <code>ddl_password</code> parameter can be up to 30 characters.</li><li>• The value of the <code>ddl_password</code> parameter is the password for the database user name specified in the <code>ddl_username</code> parameter.</li><li>• The value of the <code>ddl_password</code> parameter is encrypted in the Replication Agent configuration file.</li></ul> |

## ddl\_username

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

The database user name included in LTL for replicating DDL commands to the standby database.

This user must have permission to execute all replicated DDL commands at the standby database.

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default  | <not_configured>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Value    | A valid user name in the standby database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Comments | <ul style="list-style-type: none"><li>• The value for the <code>ddl_username</code> must not be the same as the value of the maintenance user defined in Replication Server for the standby connection. Failure to provide different names results in a Replication Server error.</li><li>• The value of the <code>ddl_username</code> parameter is sent in the LTL for all replicated DDL statements.</li><li>• The value of the <code>ddl_password</code> parameter is the password for the database user name specified in the <code>ddl_username</code> parameter.</li><li>• When DDL is replicated, Replication Server will connect to the replicate database using the <code>ddl_username</code> and <code>ddl_password</code>.</li><li>• For Oracle, Replication Server issues the following message:<br/><pre>ALTER SESSION SET CURRENT_SCHEMA=<b>user</b></pre></li></ul> |



where *user* is the user ID that generated the DDL operation at the primary database. The actual DDL command is then executed against the replicate database. If the `ddl_username` does not have permission to issue `ALTER SESSION SET CURRENT_SCHEMA` or to execute the DDL command against the *user* schema, the command fails.

- For Microsoft SQL Server, Replication Agent will send:

```
execute as login = user
```

where *user* is the user ID that generated the DDL operation at the primary database. The actual DDL command is then executed against the replicate database. If the `ddl_username` does not have permission to issue `execute as login` or to execute the DDL command against the *user* schema, the command fails.

## dump\_batch\_timeout

Specifies the number of seconds to wait before sending the contents of the Log Transfer Interface (LTI) buffer to the Replication Server, even though the buffer is not full.

|          |                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default  | 5                                                                                                                                                                                                                                                                                                                                                                                               |
| Value    | An integer from 1 to 60.                                                                                                                                                                                                                                                                                                                                                                        |
| Comments | <ul style="list-style-type: none"> <li>• The value of the <code>dump_batch_timeout</code> parameter is the number of seconds from the time the previous LTI buffer was sent to the Replication Server until the next buffer will be sent.</li> <li>• The <code>dump_batch_timeout</code> parameter has no effect if the value of the <code>lti_batch_mode</code> parameter is false.</li> </ul> |

## filter\_maint\_userid

Determines whether operations applied by the Maintenance User are ignored.

|         |                                                                                                                                                                             |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default | true                                                                                                                                                                        |
| Values  | <p>true – enables the Log Reader to ignore Maintenance User operations.</p> <p>false – disables the Log Reader filter to allow replicating Maintenance User operations.</p> |

- Comments
- The `filter_maint_userid` configuration parameter is provided to support bidirectional replication, in which the primary database also serves as a replicate database that has transactions applied to it by a Replication Server Maintenance User.
  - If the value of the `filter_maint_userid` parameter is true, database operations applied by the Maintenance User are *not* replicated. The Log Reader component filters out (ignores) operations applied by the Maintenance User when it reads the transaction log.
  - If the value of the `filter_maint_userid` parameter is false, database operations applied by the Maintenance User are replicated. The Log Reader component replicates all operations on marked objects, regardless of the user that applied the operation.
  - The Maintenance User login is specified when the database connection for the primary database is created in the Replication Server.

## function\_password

The password included in Log Transfer Language for replication of “request” stored procedures.

Default "" (empty string)

Values A valid password.

- Comments
- The value of the `function_password` parameter can be up to 30 characters.
  - The value of the `function_password` parameter is the password for the database user name specified in the `function_username` parameter.
  - The value of the `function_password` parameter is encrypted in the Replication Agent configuration file.

For more information about “request” stored procedures, see Replication Server documentation.

## function\_username

The database user name included in Log Transfer Language (LTL) for replication of “request” stored procedures.

Default sa

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Values   | A valid user name in the primary database.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Comments | <ul style="list-style-type: none"> <li>• The value of the <code>function_username</code> parameter is sent in the LTL for all replicated stored procedures in the primary database.</li> <li>• The value of the <code>function_password</code> parameter is the password for the database user name specified in the <code>function_username</code> parameter.</li> </ul> <p>For more information about “request” stored procedures, see Replication Server documentation.</p> |

## log\_backup\_files

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | The number of backup log files kept in the Replication Agent instance <i>log</i> directory.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Default  | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Values   | An integer greater than or equal to 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Comments | <ul style="list-style-type: none"> <li>• When the system log wraps, Replication Agent copies the current log file to a backup file, with a generated number appended to the file’s name.<br/><br/>For example, if the system log file is named <i>my_ra.log</i>, the first backup file created when the system log wraps would be named <i>my_ra1.log</i>. The second backup file created would be named <i>my_ra2.log</i>, and so on.</li> <li>• When the number of backup files exceeds the value of the <code>log_backup_files</code> parameter, the oldest backup file (that is, the one with the lowest generated number) is deleted from the <i>log</i> directory before the next backup file is created.</li> </ul> |

## log\_directory

|         |                                                                                                                                                                                                                                                                              |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | The directory for Replication Agent system log files.                                                                                                                                                                                                                        |
| Default | The path to the <i>log</i> directory created when the Replication Agent instance was created. For example: <ul style="list-style-type: none"> <li>• On Microsoft Windows platforms: <pre style="margin-left: 40px;">%SYBASE%\RAX-15_1\inst_name\log</pre> where: </li> </ul> |

- `%SYBASE%` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.
- On UNIX platforms:
  - `$(SYBASE)/RAX-15_1/inst_name/log`
 where:
  - `$(SYBASE)` is the path to the Replication Agent installation directory.
  - `inst_name` is the name of the Replication Agent instance.

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value    | A valid path on the Replication Agent host machine.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Comments | <ul style="list-style-type: none"> <li>• When a Replication Agent instance is created, the <i>log</i> directory is created as part of the instance directories. The default value of the <code>log_directory</code> parameter points to that directory.</li> <li>• If you specify any valid path as the value of the <code>log_directory</code> parameter, the Replication Agent instance places its system log files in the directory you specify the next time it is started.</li> <li>• If you specify the default value of the <code>log_directory</code> parameter by using the default keyword in the <code>ra_config</code> command, then the next time it is started, Replication Agent will place its system log files in the <i>log</i> directory that was created when the Replication Agent instance was created.</li> <li>• If you change the value of the <code>log_directory</code> parameter with the <code>ra_config</code> command, the new value is recorded in the configuration file immediately. However, you must shut down and restart the Replication Agent instance to make the new value take effect.</li> </ul> |

## log\_trace\_verbose

Enables or disables additional diagnostic information in Replication Agent system log files.

Default `false`

Values `true` – enables detailed diagnostic information in log files.  
`false` – disables detailed diagnostic information in log files.

Comment Detailed diagnostic information is intended for troubleshooting only, with assistance from Sybase Technical Support.

## log\_wrap

The maximum size of the Replication Agent system log file before wrapping.

Default

1000

Value

An integer greater than or equal to 1000.

Comments

- The value of the `log_wrap` parameter is the number of 1KB blocks written by Replication Agent, before it wraps the system log file.
- Larger values for the `log_wrap` parameter allow more log history in each file. Smaller values produce smaller log files.
- When the log file wraps, Replication Agent copies the current log file to a backup file, with a generated number appended to the file's name.  
  
For example, if the system log file is named `my_ra.log`, the first backup file created when the system log wraps would be named `my_ra1.log`. The second backup file created would be named `my_ra2.log`, and so on.
- When the number of backup files exceeds the value of the `log_backup_files` parameter, the oldest backup file (that is, the one with the lowest generated number) is deleted from the `log` directory before the next backup file is created.

## lr\_ntext\_byte\_order

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

Ensures the byte order of NLOB data (for Oracle) or NTEXT data (for Microsoft SQL Server) is sent correctly to the replicate database. The byte order being correct is necessary when you are replicating with different primary and replicate database types (Oracle to Microsoft SQL Server), or primary and replicate databases that are on different platforms (Windows to big endian UNIX).

Default

big

Values

big – big endian

little – little endian

Examples

For Microsoft SQL Server:

When replicating Microsoft SQL Server to Microsoft SQL Server, both the primary and replicate database must be little endian because Microsoft SQL Server runs only on Windows. The parameter should be set to little endian. If the replicate database is not Microsoft SQL Server, you need to know whether it is little endian or big endian, and set the parameter to match.

For Oracle:

When replicating Oracle to Oracle, you need to know the endian for the replicate database and set the parameter so the correct endian is sent to the replicate. The same applies when replicating to databases other than Oracle.

Comments

- If `lr_ntext_byte_order` is set to little, `ltl_big_endian_uni` must be set to false.
- Big endian indicates a left-to-right byte order architecture; little endian indicates a right-to-left byte order architecture.
- Microsoft SQL Server stores double byte ntext datatype values in little endian byte order. By default, the byte order of ntext data will be converted during replication to big endian, to allow the data to be transmitted over networks using the common “network” byte order, or big endian.

If the target database is also Microsoft SQL Server, the SQL Server will *not* automatically convert the replicated data from the sent big endian order to the SQL Server desired little endian order. To support replicating ntext data to a Microsoft SQL Server (or other replicate server that fails to provide the necessary conversion), you may 'force' the byte order to be sent using the `lr_ntext_byte_order` property by specifying a value of big or little, as desired to meet the expectations of your replicate database.

---

**Note** The default behavior of the Replication Agent is to force any unicode data to big endian order, as defined by configuration property `ltl_big_endian_uni`. In order to allow configuration property `lr_ntext_byte_order` to successfully override the SQL Server byte order, you must also set `ltl_big_endian_uni` configuration property to false whenever the `lr_nnext_byte_order` property is used.

---

- The following describes the relationship between `ltl_big_endian_uni` and `lr_ntext_byte_order` configuration properties:
  - When `ltl_big_endian_uni` is set true by default, the Replication Agent ensures that all unicode data is sent in big endian order.

- When set to false, `ltl_big_endian_unitext` allows unicode data to be sent in the byte order that is used when the data is stored in the transaction log file.
- In contrast, `lr_nxtxt_byte_order`, “forces” the result of unicode data read from the transaction log to be in the requested byte order, regardless of how it normally exists in the transaction log file.
- See also, `ltl_big_endian_unitext`.

## lti\_batch\_mode

Enables or disables the Log Transfer Interface component LTL batch mode.

Default

true

Values

true – enables LTL batch mode.

false – disables LTL batch mode.

Comments

- If the value of the `lti_batch_mode` parameter is true, the LTI component sends LTL commands to the Replication Server in batches, instead of one command at a time:
  - The LTI component fits as many LTL commands as it can into its LTL batch mode buffer, before it sends any commands to the Replication Server.
  - When the time interval specified in the `dump_batch_timeout` parameter expires, the LTI component sends the current LTL batch mode buffer contents to the Replication Server, even if the buffer is not full.
- If the value of the `lti_batch_mode` parameter is false, the LTI component sends individual LTL commands to the Replication Server for each change set in its input queue.
- When Replication Agent connects to the Replication Server, it determines the version of the Replication Server:
  - If the Replication Server version is earlier than 12.5, the size of the LTL batch mode buffer is set to 16KB automatically.
  - If the Replication Server version is 12.5 or later, Replication Agent sets the size of the LTL batch mode buffer to the size specified by the `ltl_batch_size` parameter.

- If the Replication Server version is 12.5 or later, you can use the Replication Agent `ltl_batch_size` parameter to set the size of the LTI component's LTL batch mode buffer.

---

**Note** Adjusting the size of the LTL batch mode buffer can help you optimize the performance of the replication system.

---

- If the Replication Server version is earlier than 12.5 and the value of the `lti_batch_mode` parameter is true, if any single LTL distribute command exceeds the 16K size of the LTL batch mode buffer, Replication Server returns an error and Replication Agent goes into *Admin* state.
- In general, setting the value of the `lti_batch_mode` parameter to true provides better Replication Agent throughput.

## **lti\_max\_buffer\_size**

The maximum size of the Log Transfer Interface (LTI) component's queues.

Default

5000

Value

An integer in the range of 1000 to 100000.

Comments

- The value of the `lti_max_buffer_size` parameter is the maximum number of operations that can be stored in the LTI component's inbound and outbound queues:
  - Operations in the inbound queue represent change sets received from the Log Reader component.
  - Operations in the outbound queue are the Log Transfer Language commands to be sent to the Replication Server.
- The LTI component's inbound queue is a bounded buffer that blocks the processing of the Log Reader component when it gets full.



## lti\_update\_trunc\_point

The number of Log Transfer Language (LTL) commands sent before requesting a new LTM Locator from the Replication Server.

Default

1000

Value

An integer from 1 to 100000.

Comments

- The value of the `lti_update_trunc_point` parameter is the number of LTL commands that Replication Agent sends to the Replication Server, before it requests a new LTM Locator (secondary truncation point) from the Replication Server.
- Lower numbers cause Replication Agent to request a new LTM Locator from the Replication Server more often.
- If the value of the `truncation_type` parameter is `locator_update`, setting the value of the `lti_update_trunc_point` parameter to a lower number causes automatic log truncation to occur more frequently.
- The value of the `lti_update_trunc_point` parameter is a trade-off between better system performance and longer recovery time:
  - Lower values reduce the time it takes to recover from a replication failure, but they may have an adverse affect on overall system throughput.
  - Higher values improve overall system throughput, but they may increase the time it takes to recover from a replication failure.
- If the Replication Agent is operating in an unreliable network environment, it may be prudent to set the `lti_update_trunc_point` parameter to a lower value to ensure faster recovery.

## ltl\_batch\_size

The size of the Log Transfer Interface component's Log Transfer Language (LTL) batch mode buffer.

Default

40000

Value

An integer from 16384 to 10485760.

Comments

- The value of the `ltl_batch_size` parameter is the size (in bytes) of the LTI component's LTL batch mode buffer.

- When Replication Agent connects to the Replication Server, it determines the version of the Replication Server:
  - If the Replication Server version is earlier than 12.5, the size of the LTL batch mode buffer is set to 16K automatically, and the value of the `ltl_batch_size` parameter is ignored.
  - If the Replication Server version is 12.5 or later, Replication Agent sets the size of the LTL batch mode buffer to the size specified by the `ltl_batch_size` parameter.
- The Log Transfer Interface component uses the LTL batch mode buffer only if the value of the `lti_batch_mode` parameter is true. If the value of the `lti_batch_mode` parameter is false, the LTL batch mode buffer is not used.

## ltl\_big\_endian\_unitext

Specifies whether “unitext” data is converted from little endian to big endian before sending LTL to Replication Server.

Default

true

Values

true – Unitext data that is in little endian byte order will be changed to big endian byte order.

false – Unitext data byte order is *not* changed.

Comments

When setting this parameter, you must know how the `lr_nxtxt_byte_order` is set. If parameter `lr_nxtxt_byte_order` is set to send the correct byte order for the replicate database, then `ltl_big_endian_unitext` must be set to false so the byte order will not be changed.

See also, `lr_nxtxt_byte_order`.

## ltl\_character\_case

The character case used for database object names in Log Transfer Language (LTL) sent to the Replication Server.

Default

asis

Values

asis – Database object names are sent in the same character case as they are returned from the primary database, or (if the value of the `use_rssd` parameter is true) in the same character case as they are specified in replication definitions.

lower – Database object names are sent in *all lowercase*, regardless of how they are returned from the primary database, or specified in replication definitions.

upper – Database object names in LTL are sent in *all uppercase*, regardless of how they are returned from the primary database, or are specified in replication definitions.

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments | <ul style="list-style-type: none"> <li>• The <code>ltl_character_case</code> configuration parameter allows you to customize the handling of database object names in LTL to work with replication definitions that specify the object names differently than the way the primary database returns them.</li> <li>• If the value of the <code>ltl_character_case</code> parameter is <code>asis</code>, and the value of the <code>use_rssd</code> parameter is <code>true</code>, database object names are sent in the same character case as they are specified in replication definitions.</li> <li>• If the value of the <code>ltl_character_case</code> parameter is <code>asis</code>, and the value of the <code>use_rssd</code> parameter is <code>false</code>, database object names are sent in the same character case as they are returned from the primary database.</li> <li>• If replication definitions specify database object names in all lowercase, set the value of the <code>ltl_character_case</code> parameter to <code>lower</code>.</li> <li>• If replication definitions specify database object names in all uppercase, set the value of the <code>ltl_character_case</code> parameter to <code>upper</code>.</li> <li>• If you want to send database object names with “mixed” character case (for example, <code>MyTable</code>), set the value of the <code>ltl_character_case</code> parameter to <code>asis</code>.</li> </ul> |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **ltl\_origin\_time\_required**

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Enables or disables the Log Transfer Language (LTL) <code>origin_time</code> command tag.                                                                                                                                                                                                                                                                                                                                                                        |
| Default  | <code>false</code>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Values   | <p><code>true</code> – enables the <code>origin_time</code> command tag in LTL.</p> <p><code>false</code> – disables the <code>origin_time</code> command tag in LTL.</p>                                                                                                                                                                                                                                                                                        |
| Comments | <ul style="list-style-type: none"> <li>• If the value of the <code>ltl_origin_time_required</code> parameter is <code>true</code>, the Log Transfer Interface component includes the <code>origin_time</code> command tag in the LTL it generates.</li> <li>• If a Replication Server function string checks for the <code>origin_time</code> command tag, set the value of the <code>ltl_origin_time_required</code> parameter to <code>true</code>.</li> </ul> |

- The datetime value placed in the LTL `origin_time` command tag is the time that the original primary database operation was recorded in the transaction log, not the time it was scanned and processed by the Log Reader component.
- Setting the value of the `ltl_origin_time_required` parameter to `false` provides better Replication Agent throughput.
- If you use Replication Manager to report latency, you must set the value of the `ltl_origin_time_required` parameter to `true`.

## ltl\_send\_only\_primary\_keys

Determines whether Replication Agent sends only primary key columns, or sends all columns to Replication Server for update and delete operations to the replicate database.

Default

true

Value

true – sends only the primary key columns to Replication Server.

false – sends all columns to Replication Server.

Comments

- When set to `true` and a replication definition exists that identifies the primary key column(s) for a table, only the primary key column value(s) are sent for the *before* image in update and delete operations. Sending only primary key column data reduces the amount of data sent to Replication Server, since only primary keys are used to construct the “where” clauses for update and delete operations.
- When set to `false`, *before* image values are sent for all columns available, regardless of primary key definition.
- Setting of `ltl_send_only_primary_keys` to `false`, is only recommended when additional *before* image values provide benefit, such as for supporting customer function strings at the Replicate database, or for resolving other issues where additional column data provides benefit.
- Primary keys are defined within a table level Replication Definition. If configuration `use_rssd` is set to `false`, the setting of `ltl_send_only_primary_keys` has no impact, since Replication Definition information will not be gathered from the Replication Server System Database (RSSD).
- If you set the value to `false`, the performance will be slower.

## ltm\_admin\_pw

The Replication Agent administrator login password.

Default

"" (empty string)

Value

A valid password.

Comments

- The value of the ltm\_admin\_pw parameter is the password for the user name authorized to log in to the Replication Agent.
- The value of the ltm\_admin\_pw parameter is encrypted in the Replication Agent configuration file.
- To change the value of the ltm\_admin\_pw parameter, use ra\_set\_login.
- When you change the value of the ltm\_admin\_pw parameter with ra\_set\_login, the new value is recorded in the configuration file immediately. However, you must shut down and restart the Replication Agent instance to make the new password take effect.

After you change the value of the ltm\_admin\_pw parameter with ra\_set\_login, you must use the new password next time you log in to the Replication Agent.

## ltm\_admin\_user

The Replication Agent administrator login name.

Default

sa

Value

A valid user name on the Replication Agent host machine.

Comments

- The value of the ltm\_admin\_user parameter is the user name authorized to log in to the Replication Agent.
- To change the value of the ltm\_admin\_user parameter, use the ra\_set\_login command.
- If you change the value of the ltm\_admin\_user parameter with the ra\_set\_login command, the new value is recorded in the configuration file immediately. However, you must shut down and restart the Replication Agent instance to make the new administrator name take effect.
- After you change the value of the ltm\_admin\_user parameter with ra\_set\_login, you must use the new administrator name the next time you log in to the Replication Agent.
- Only one administrator name is valid at any time.

## max\_ops\_per\_scan

The maximum number of operations the Log Reader component reads during each log scan operation.

Default

1000

Values

An integer from 25 to 2147483647.

Comments

- The value of the `max_ops_per_scan` parameter is the maximum number of database operations that can be read from the Replication Agent transaction log during each Log Reader scan operation (the size of the Log Reader operation queue).
- The Log Reader component always reads at least one transaction in each scan, regardless of how many operations are in the transaction.

For example, if the value of the `max_ops_per_scan` parameter is 1000, and a transaction contains 1200 operations, the Log Reader component reads all 1200 operations in one scan when it reads that transaction.

- See the Replication Agent *Primary Database Guide* for more information about how the `max_ops_per_scan` parameter affects Replication Agent performance.

## pdb\_archive\_path

---

**Note** This parameter is available only for Oracle and UDB.

---

Identifies the directory path where the Replication Agent expects to find archived redo log files (for Oracle) or archived transaction log files (for UDB). When archived redo log files or archived transaction log files are stored in the file system, the configuration parameter is set to a file system path.

Default

<not configured>

Values

For Oracle, a valid directory path on the machine hosting the Replication Agent that points to a location where Oracle places the archived redo log files. For example,

```
ORACLE_HOME\oradata\orcl\archive
```

For Oracle, when archived redo log files are stored in Oracle ASM, the configuration parameter must be set to the name of the ASM disk group where the archived redo log files are stored. The disk group name must be preceded with a plus “+” sign to specify the archive redo log path as an ASM disk group. For example,

```
+dgroup_01
```

For UDB, a valid directory path on disk, as defined by the UDB LOGARCHMETH1 or LOGARCHMETH2 database configuration parameter, when it is configured to DISK. For example,

```
<path>
```

#### Comments

- Setting of the configuration parameter is required when configuration property `pdb_include_archives` is set to true, and must be set to a valid location before the Replication Agent can be placed in a replicating state.
- If the Replication Agent cannot find an expected log record in the Oracle online redo logs, the Replication Agent will search this directory for the archived log file containing the required record.
- For UDB, `pdb_archive_path` must be configured before `pdb_archive_remove` is enabled (set to true).

When `pdb_archive_remove` property is set to true, Replication Agent for UDB truncates the archived log files from the location specified by `pdb_archive_path`.

- See also `pdb_archive_remove` and `pdb_include_archives`.

## pdb\_archive\_remove

---

**Note** This parameter is available only for Oracle and UDB.

---

Enables or disables the removal of Oracle archived redo log files or UDB archived transaction logs from the path specified by `pdb_archive_path`.

#### Default

false

#### Values

true – Allows the removal of archived Oracle redo log and UDB archived transaction log files from the path specified by `pdb_archive_path`. Removal occurs based on the execution of command `pdb_truncate_xlog`, or the timing of automatic truncation based on parameters `truncation_type` and `truncation_interval`.

false – Disables the removal of archived Oracle redo log files or UDB archived transaction log files.

- Comments
- For Oracle, set this configuration to true when the path specified by `pdb_archive_path` is established solely for Replication support, and automatic removal of unneeded archived log files is desired.
  - For UDB, set this configuration to true when UDB is configured to archive logs by setting `LOGARCHMETH1` configuration parameter to `DISK:<path>`, and the automatic removal of archived log files is desired.
  - If the path specified by `pdb_archive_path` is shared by other processes, or the removal of archived log files is expected to be performed by processes other than the Replication Agent, this parameter should be false.
  - Parameters `truncation_type` and `truncation_interval`, and command `pdb_truncate_xlog` have no impact when this configuration parameter is set to false.
  - See also `pdb_archive_path`, `truncation_type`, `truncation_interval` configuration properties. Also, see the `pdb_truncate_xlog` command.

## pdb\_auto\_create\_repdefs

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

Configures Replication Agent to automatically create replication definitions at Replication Server at the time a table or procedure is marked for replication.

Default false

Values true – Replication Agent automatically creates replication definitions at the Replication Server when tables or procedures are marked.

false – No replication definitions are created when tables or procedures are marked.

Comments **Note** Replication Agent always assumes that a database replication definition exists for the primary database.

---

- The table and procedure replication definitions that Replication Agent creates assume that a database level replication definition for the primary database already exists at Replication Server.



All replication definitions created by this command include the `send standby` clause, which means the replication definition will only be used by Replication Server if there is a database level replication definition or the primary Replication Server connection is for a warm standby configuration. The replication definition created by `rs_create_repdef` can not be individually subscribed to. If you do not wish to have a database level replication definition, or warm standby configuration, you must use a different tool, or create replication definitions manually, and not use `rs_create_repdef`.

- Replication definitions created by `rs_create_repdef` will always define the datatypes using available `UserDefinedDatatypes` that are installed in Replication Server. This means that customers using `rs_create_repdef` should not set Replication Agent configuration property `pdb_convert_datetime` to true, as this will convert date and timestamp datatypes to Sybase format, instead of “`UserDefinedDatatypes`” format.
- If this property is set to true and when `pdb_setrepproc` is invoked to mark a procedure or procedures, a replication definition is created at Replication Server for each procedure that gets marked for replication.
- If this property is set to true and when `pdb_setreptable` is invoked to unmark a table or tables, the replication definition is dropped at Replication Server for each table that gets unmarked for replication.
- If this property is set to true and when `pdb_setrepproc` is invoked to unmark a procedure or procedures, a replication definition is dropped at Replication Server for each procedure that gets unmarked for replication if this property is set to true.
- The following applies to replication definition table and procedure names:
  - All non-alphanumeric characters and spaces are removed and are not part of the table or procedure name.
  - Underscores are kept as part of the name even though they are non-alphanumeric characters.
  - Periods are replaced with underscores.
- Replication definition names for tables always begin with the prefix “`ra$,`” followed by a unique alphanumeric identifier (maximum of 8 characters), and ending with a table or object name. For example, for a replicate name of “My Table,” the resulting repdef name is “`ra$0x7952_mytable.`” For an especially long replicate name of “`mytable89012345678901234567890`” (30 characters), the resulting repdef name is “`ra$0x7952_mytable8901234567890`” (30 characters maximum).

- Replication definition names for procedures are the same name as the procedure.

## pdb\_automark\_tables

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

Determines if the Replication Agent automatically marks tables for replication during DDL replication.

Default

false

Values

true – User tables are automatically marked during DDL replication.

false – User tables are not automatically marked during DDL replication. They must always be marked using the `pdb_setreptable` command (default).

Comments

- The default value for `pdb_automark_tables` is set to `false` when an Replication Agent instance is created. In this default setting, tables are never automatically marked for replication. If automatic marking of tables is desired, this configuration parameter value should be changed to `true`. When set to `true`, all user tables (those whose owners are not contained in the `owner_filter_list`) will be marked for replication when the `pdb_xlog` command is executed with the `init` keyword. In addition, when replication of DDL commands is enabled (`pdb_setrepddl` setting is disabled by default), any `create table` command for a user table (those whose owners are not contained in the `owner_filter_list`) will automatically be marked for replication.
- Automatic marking of new tables (those created in the primary database with the `create table` command) will only occur when replication of DDL commands is enabled (`pdb_setrepddl` is set to `enable`) and the table is a user table (those whose owners are not contained in the `owner_filter_list`) and `pdb_automark_tables` is set to `true`. Modifying the `owner_filter_list` after the initialization may cause inconsistencies.
- Tables are automatically unmarked for replication when a `drop table` command issued at the primary and is recorded in the transaction log, regardless of the settings of `pdb_setrepddl` or `pdb_automark_tables`. This is due to the fact that a dropped table cannot be replicated from.

- Automatic marking of user tables is independent of manual marking of tables using the `pdb_setreptable` command. In other words, you can always mark or unmark individual or all tables for replication using the `pdb_setreptable` command, regardless of the setting of `pdb_automark_tables`.

## pdb\_auto\_run\_scripts

Determines whether Replication Agent automatically runs scripts (for transaction log creation and removal, and object marking and unmarking) at the primary database.

Default

true

Values

true – Replication Agent automatically runs scripts.

false – Replication Agent generates and saves the scripts, but it does not automatically run them at the primary database.

Comments

- When the `pdb_xlog` command is invoked to create or remove the transaction log, Replication Agent generates a script to create or remove the transaction log base objects.
- When the `pdb_setrepproc` command is invoked to mark or unmark an object in the primary database, Replication Agent generates a script to create or remove the transaction log objects necessary for object marking.
- Replication Agent always saves the scripts in a file. Log creation and removal scripts are saved in files named *partinit.sql* and *partdeinit.sql*. Object marking and unmarking scripts are saved in files named *partmark.sql* and *unmark.sql*.
- When the `pdb_auto_run_scripts` parameter is set to false, the scripts are created but no action is taken. This allows you to review the scripts to see what action will be taken before execution. You cannot execute the scripts. You must set `pdb_auto_run_scripts` parameter back to true and re-execute the command to have the desired action take place.
- As described above for the `pdb_xlog` and `pdb_setrepproc` commands, Oracle and Microsoft SQL Server creates the *partinit*, *partdeinit*, *partmark*, and *partunmark* scripts. For Oracle and Microsoft SQL Server, these scripts can *not* be executed (since they do not update the RASD) and are for informational purposes only.
- This property must be set to true for initialization to occur.

## pdb\_convert\_datetime

Determines whether Replication Agent converts non-Sybase temporal datatypes to the Sybase datetime format.

Default

true

Values

true – Replication Agent converts all data in the primary database native date/time datatypes to the Sybase datetime format.

false – Replication Agent replicates data in the primary database native datetime datatypes as character strings.

Comments

- The `pdb_convert_datetime` parameter is provided for backward compatibility with previous versions of Replication Agents and Replication Server. If you use Replication Server version 12.0 or later, Sybase recommends that you use the Replication Server heterogeneous datatype support (HDS) feature for all datatype conversion and translation.
- Replication Agent checks the value of the `pdb_convert_datetime` parameter at the time an object is marked for replication. Transaction log objects that support replication of the marked object are constructed to provide the desired date format.

If you change the value of the `pdb_convert_datetime` parameter *after* an object is marked, it has no effect on the marked object. To change the datetime datatype conversion for a marked object, you must unmark the object, change the value of the `pdb_convert_datetime` parameter, then remark the object.

- For log-based Replication Agents, the conversion takes place after the log records have been read and before LTL is generated to send to the Replication Server.
- Any missing component in the non-Sybase date/time datatype format is treated as an implied 0 (zero) when it is converted to the Sybase datetime format.
- When the value of the `pdb_convert_datetime` parameter is true, the replication definition for each table should specify that the declared datatype for all date/time columns is datetime.
- If the value of the `pdb_convert_datetime` parameter is false, the Replication Agent sends date/time data to the primary Replication Server as default-sized character strings. The default character string size varies by database and datatype:

- DB2 Universal Database: DATE = char(10), TIME = char(8), TIMESTAMP = char(26)
- Microsoft SQL Server: datetime or smalldatetime = char(23), timestamp = binary(8)
- Oracle: DATE = char(19)
- Set the value of the `pdb_convert_datetime` parameter to true if *all* date/time values replicated from the primary database will be replicated as the Sybase datetime datatype.
- `pdb_convert_datetime` must be false if a table containing replicated LOB columns has datetime datatype in the primary key.
- Replication Agent date/time datatype conversion does not work with LOB column replication, unless either of the following conditions exist (these conditions are *not* required for Oracle and Microsoft SQL Server):
  - There are no date/time columns in the tables that have LOB column replication enabled, or
  - The primary keys in tables that have LOB column replication enabled do not contain date/time datatypes.

Otherwise, if you use the `pdb_setrepcol` command to enable LOB column replication, you must set the value of the `pdb_convert_datetime` parameter to false.

The Replication Agents for UDB is the only Replication Agent that must query LOB data directly from the primary database. To successfully query a primary database table for a LOB column value, any date column value must retain the primary database format and structure for the date value to appear correctly in the query. The format and structure for the date value cannot be converted to the Sybase datetime format.

- Sybase recommends that you set the value of the `pdb_convert_datetime` parameter to false for better Replication Agent throughput performance and optimal datatype handling.

## **pdb\_dflt\_column\_repl**

Determines whether LOB column replication is enabled by default when tables are marked.

Default                      false

Values	<p>true – LOB column replication is enabled by default (automatically) when tables are marked.</p> <p>false – LOB column replication is disabled by default when tables are marked.</p>
Comments	<ul style="list-style-type: none"><li>• If the value of the <code>pdb_dflt_column_repl</code> parameter is false when a table is marked for replication, no transactions that affect LOB columns in the table can be replicated until replication is explicitly enabled with the <code>pdb_setrepcol</code> command.</li><li>• You can use the <code>pdb_setrepcol</code> command to enable or disable replication for all LOB columns in all marked tables at once.</li><li>• When replication is disabled for a LOB column, any part of an operation that affects that column will not be recorded in the transaction log, even if the operation also affects other columns for which replication is enabled.</li></ul>

## pdb\_dflt\_object\_repl

---

**Note** This parameter is available only for Oracle and UDB.

---

Determines whether replication is enabled by default when objects (tables or stored procedures) are marked.

Default	true
Values	<p>true – enables replication by default (automatically) when objects are marked.</p> <p>false – disables replication by default when objects are marked.</p>
Comments	<ul style="list-style-type: none"><li>• If the value of the <code>pdb_dflt_object_repl</code> parameter is false when a table is marked for replication, no transactions can be replicated from that table until replication is explicitly enabled with the <code>pdb_setreptable</code> command.</li><li>• If the value of the <code>pdb_dflt_object_repl</code> parameter is false when a stored procedure is marked for replication, no invocations of that stored procedure can be replicated until replication is explicitly enabled with the <code>pdb_setrepproc</code> command.</li><li>• You can use the <code>pdb_setrepproc</code> or <code>pdb_setreptable</code> command to enable or disable replication for all marked stored procedures or tables at once.</li><li>• When replication is disabled for a table, no operations that affect that table will be recorded in the transaction log.</li></ul>

- When replication is disabled for a stored procedure, no invocations of that stored procedure will be recorded in the transaction log.
- For Microsoft SQL Server, the `pdb_setreproc` command ignores the `pdb_dflt_object_repl` parameter. As a result, this command will always enable replication by default when objects are marked.

## pdb\_include\_archives

---

**Note** This parameter is available only for Oracle.

---

Enables or disables the use of Oracle archive log files. This configuration is available for Oracle only.

Default

false

Values

**true** – Allows reading of the archived Oracle redo log files from the path specified by `pdb_archive_path`. The configuration of Oracle automatic archiving is supported under this mode. Removal of old archives logs (no longer needed to support replication) may be provided using configuration property `pdb_archive_remove`.

**false** – Only on-line redo logs files are read. Oracle automatic archiving must be disabled. The RepAgent executes Oracle archive commands to archive the redo logs once they are no longer needed for replication.

Comments

- Set the configuration to true when use of archive logs is preferred or when Oracle must be configured to perform automatic archiving. Set this value to false if accessing only the on-line redo logs is preferred.
- Set this value to false if using only the online redo logs is preferred.
- See the `pdb_archive_path`, `truncation_type`, `truncation_interval` configuration properties.

## pdb\_support\_large\_identifier

To support replication of large identifiers up to 255 characters in length with Replication Server 12.6 and later.

Default

false

Value

true – Objects containing large identifiers may be marked for replication.  
 false – Objects containing large identifiers may *not* be marked for replication.

- Comments
- If `pdb_support_large_identifier` value is false, when an object (Table/Procedure/Function) is being marked for replication, the object is checked for any identifiers that are longer than 30 characters. An error is returned and the object is not marked for replication if the object has identifiers longer than 30 characters.
  - This property may be set to true if the Replication Server being used is at version 12.6 or later and the replicate database must be able to support large identifiers.
  - When `pdb_support_large_identifier` is set to true, objects being marked for replication are not checked for identifiers longer than 30 characters.

## pdb\_timezone\_file

---

**Note** This parameter is available only for Oracle.

---

Specifies the file to read at Replication Agent initialization to obtain Oracle time zone information.

Default <not configured>

Value A valid path to the Oracle time zone file including the *time zone* file name.

- Comments
- If the value is not specified, it will default to the Oracle installation's `oracore/zoneinfo/timezone.dat` file. For example,
 

```
$ORACLE_HOME/oracore/zoneinfo/timezone.dat
```
  - The *timezone* file specified must be for the same release and platform as the primary Oracle database. For example, an Oracle 9i *timezone* file is not compatible with an Oracle 10g primary database, and a Windows *timezone* file is not compatible with UNIX.

## pdb\_xlog\_device

The primary database device on which Replication Agent transaction log objects are created.

Default NULL



Value	A valid primary database device name or NULL.
Comments	<ul style="list-style-type: none"> <li>• The value of the <code>pdb_xlog_device</code> parameter is the device specification of the primary database device to be used in SQL scripts generated by the Replication Agent to create transaction log objects.</li> <li>• The <code>pdb_xlog_device</code> parameter allows you to specify a single device on which all Replication Agent transaction log objects will be created, even if the database uses multiple devices.</li> <li>• If the value of the <code>pdb_xlog_device</code> parameter is NULL, no device is specified in the SQL create statements, and Replication Agent transaction log objects are placed on the primary data server's system-defined default device.</li> </ul>

## pdb\_xlog\_prefix

The prefix string used in database object names to identify Replication Agent transaction log objects.

Default	ra_
Value	A character string of 1 to 3 characters.
Comments	<ul style="list-style-type: none"> <li>• When Replication Agent generates database object names for transaction log components in the primary database, it uses the value of the <code>pdb_xlog_prefix</code> parameter as an object name prefix.</li> <li>• Replication Agent uses the value of the <code>pdb_xlog_prefix</code> parameter to recognize its transaction log objects in the primary database. Therefore, if you change the value of the <code>pdb_xlog_prefix</code> parameter after the transaction log objects are created, Replication Agent will not be able to find its transaction log objects.</li> <li>• The value of the <code>pdb_xlog_prefix_chars</code> parameter specifies the non-alphabetic characters that can be used in the prefix string.</li> </ul>

## pdb\_xlog\_prefix\_chars

Non-alphabetic characters that are allowed in the database object name prefix string that identifies Replication Agent transaction log objects.

Default	_#@ (DB2 Universal Database) _\$#@ (Microsoft SQL Server)
---------	--------------------------------------------------------------

	<code>_#</code> (Oracle)
Value	A string of characters with no separators.
Comments	<ul style="list-style-type: none"><li>• The default value of the <code>pdb_xlog_prefix_chars</code> parameter depends on the type of primary database that the Replication Agent instance was created for. The default value is based on the standard, non-alphabetic characters allowed by each non-Sybase database.</li><li>• When you set or change the value of the <code>pdb_xlog_prefix_chars</code> parameter, the new value replaces any existing value; it does not add or append the new value to a previous value.</li><li>• When you use the <code>ra_config</code> command to set the value of the <code>pdb_xlog_prefix</code> parameter, any non-alphabetic characters specified on the command line are validated against the value of the <code>pdb_xlog_prefix_chars</code> parameter.</li><li>• Alphabetic characters a-z are always valid in the <code>pdb_xlog_prefix</code> parameter, and they need not be specified.</li><li>• Replication Agent does not support delimited names for transaction log objects, so you cannot use a space character in the value of the <code>pdb_xlog_prefix</code> parameter.</li><li>• The value you specify for the <code>pdb_xlog_prefix_chars</code> parameter is not validated. There are no restrictions on the characters you can include.</li></ul>
	<hr/> <b>Note</b> The primary data server may restrict the characters used in certain positions in a database object name. Refer to the documentation for your primary data server for more information. <hr/>

## **pds\_connection\_type**

	The type of connectivity driver used on the primary database connection.
Default	One of the following values is set automatically when the Replication Agent instance is created.
Values	<p>MSSQLJDBC – Replication Agent uses the Microsoft SQL Server JDBC driver to connect to the primary Microsoft SQL Server database.</p> <p>ORAJDBC – Replication Agent uses the Oracle JDBC driver to connect to the primary Oracle database.</p>

UDBODBC – Replication Agent uses the DB2 Universal Database ODBC driver to connect to the primary database in DB2 Universal Database.

## Comments

- The value of the `pds_connection_type` parameter is set automatically at the time a Replication Agent instance is created. The specific value depends on the type of Replication Agent instance created.

---

**Note** Sybase recommends that you do *not* change the default value of the `pds_connection_type` parameter.

---

- The value of the `pds_connection_type` parameter determines which of several other Replication Agent configuration parameters related to the primary database connection must also have values specified.
  - MSSQLDBC requires corresponding values for the following parameters:
    - `pds_server_name`
    - `pds_port_number`
    - `pds_database_name`
  - UDBODBC requires corresponding values for the following parameters:
    - `pds_database_name`
    - `pds_datasource_name`
  - ORAJDBC requires corresponding values for the following parameters:
    - `pds_host_name`
    - `pds_port_number`
    - `pds_database_name`
  - If using the `tnsnames.ora` file the following parameters are required:
    - `pds_tns_filename`
    - `pds_tns_connection`

## Comment

The value of the `pds_connection_type` parameter is set automatically when a Replication Agent instance is created.

## pds\_dac\_port\_number

---

**Note** This parameter is available only for Microsoft SQL Server.

---

The dedicated administrative connection (DAC) port number for Microsoft SQL Server error log.

Default	1111
Value	A valid port number for Microsoft SQL Server.
Comments	<ul style="list-style-type: none"><li>• This parameter is required when executing the <code>pdb_xlog</code> init command against a Microsoft SQL Server for the first time. It is required to support installation of changes to the <code>mssqlsystemresource</code> database.</li><li>• For information regarding the use of the <code>pds_dac_port_number</code> parameter, see the “Microsoft SQL Server” chapter of the <i>Primary Database Guide</i>, under “Initialization of the primary data server and Replication Agent” and “First-time initialization.”</li><li>• See also, <code>pdb_xlog</code>.</li></ul>

## pds\_database\_name

The name of the primary database.

Default	<not_configured>
Value	A valid database name.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>pds_database_name</code> parameter is the name of the primary database on the primary data server.</li></ul> <hr/> <p><b>Note</b> Some primary data servers may not support multiple databases in a single instance of the data server. In that case, the value of the <code>pds_database_name</code> parameter should be the name of the data server instance.</p> <hr/> <ul style="list-style-type: none"><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## pds\_datasource\_name

---

**Note** This parameter is available only for UDB.

---

The data source name (DSN) specified for the ODBC driver used on the primary database connection.

Default	<not_configured>
Value	A valid ODBC data source name.
Comments	<ul style="list-style-type: none"><li>• The value of the pds_datasource_name parameter is the data source name (DSN) of the ODBC driver on the primary database connection.</li><li>• If the value of the pds_connection_type parameter is UDBODBC, the value of the pds_datasource_name parameter must be the database alias of the primary database in the DB2 Universal Database server.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## pds\_host\_name

The name of the primary data server host machine.

Default	<not_configured>
Value	A valid host name.
Comments	<ul style="list-style-type: none"><li>• The value of the pds_host_name parameter is the network name of the host machine on which the primary data server resides.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## pds\_integrated\_security

---

**Note** This parameter is available only for Microsoft SQL Server.

---

Determines if the Replication Agent should use Windows authentication when connecting to the primary SQL Server.

Default	false
---------	-------

Value	<p>true – Specifies that Replication Agent should connect to the primary SQL Server using Windows authentication.</p> <p>false – Specifies that Replication Agent should connect to the primary SQL Server using SQL Server authentication (default).</p>
Comments	<ul style="list-style-type: none"><li>• The default value for <code>pds_integrated_security</code> is set to <code>false</code> when a Replication Agent instance is created. In this default setting, you must configure the <code>pds_password</code> parameter, and the primary SQL Server must be configured to allow SQL Server authentication.</li><li>• Set this value to <code>true</code> to have the Replication Agent connect to the primary SQL Server using Windows authentication. The Windows environment and the primary SQL Server must be configured to use Windows authentication. For more information, see the Microsoft SQL Server section in the Replication Agent <i>Primary Database Guide</i>.</li></ul>

## **pds\_password**

The password that Replication Agent uses for primary data server access.

Default	"" (empty string)
Value	A valid password.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>pds_password</code> parameter is the password for the user login name that the Replication Agent uses to access the primary data server.</li><li>• The value of the <code>pds_password</code> parameter is encrypted in the Replication Agent instance configuration file.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## **pds\_port\_number**

The client port number for the primary data server.

Default	1111
Value	A valid port number on the primary data server host machine.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>pds_port_number</code> parameter is the client port number for the primary data server.</li></ul>

- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## pds\_retry\_count

The number of times the Replication Agent tries to establish a connection to the primary database.

Default

5

Value

An integer from 0 to 2,147,483,647.

Comments

- The value of the pds\_retry\_count parameter is the number of times that Replication Agent will try to establish a network connection to the primary database after a connection failure.
- Sybase recommends a setting of 5 for this parameter.
- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## pds\_retry\_timeout

The number of seconds the Replication Agent waits between retry attempts to connect to the primary database.

Default

10

Value

An integer from 0 to 3600.

Comments

- The value of the pds\_retry\_timeout parameter is the number of seconds that the Replication Agent will wait between retry attempts to establish a network connection to the primary database after a connection failure.
- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## pds\_server\_name

---

**Note** This parameter is available only for Microsoft SQL Server.

---

The server name of the primary data server.

Default	<not_configured>
Value	A valid server name.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>pds_server_name</code> parameter is the server name of the primary data server.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## pds\_tns\_connection

---

**Note** This parameter is available only for Oracle.

---

The Oracle connection name that identifies the primary database connection in the Oracle *tnsnames.ora* file.

Default	<not configured>
Value	A valid primary database connection name from the Oracle <i>tnsnames.ora</i> file specified by the <code>pds_tns_filename</code> configuration parameter.
Comments	<ul style="list-style-type: none"><li>• Setting of the configuration parameter overrides settings of the configuration parameters <code>pds_host_name</code>, <code>pds_database_name</code>, and <code>pds_port_number</code>.</li><li>• This configuration parameter is required when the Oracle data server instance to be replicated is part of a Real Application Cluster (RAC) configuration.</li><li>• See also, <code>pds_tns_filename</code>.</li></ul>

## pds\_tns\_filename

---

**Note** This parameter is available only for Oracle.

---

The fully-qualified file name identifying the Oracle *tnsnames.ora* file that contains connection properties for the primary Oracle data server.

Default	<not configured>
---------	------------------



**Value** A valid Oracle *tnsnames.ora* file that contains the connection properties to the primary Oracle data server. This file normally resides in the *ORACLE\_HOME\network\admin* directory.

- Comments**
- Setting of the configuration parameter is required when the Oracle data server instance to be replicated is part of a Real Application Clusters (RAC) configuration.
  - See also *pds\_tns\_connection*.

---

**Warning!** The Replication Agent process must have *read* permission to this file. Access failures will prevent the Replication Agent from connecting to the Oracle server.

---

## **pds\_username**

The user login name that the Replication Agent uses for primary data server access.

**Default** <not\_configured>

**Value** A valid user name.

- Comments**
- The value of the *pds\_username* parameter is the login name that the Replication Agent uses to log in to the primary data server.  
This login name must be defined in the primary data server, with appropriate privileges or authority in the primary database.
  - The Replication Agent uses this login to access primary database objects and to create, remove, and manage its transaction log objects in the primary database.
  - See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## **ra\_retry\_count**

The number of times the Replication Agent attempts to restart replication after a failure.

**Default** 2

**Value** An integer greater than 0.

- Comments
- The value of the `ra_retry_count` parameter is the number of times that the Log Transfer Manager component will try to get the Replication Agent instance back into *Replicating* state after a failure or error causes the instance to go to *Admin* state.
  - When a network connection fails, the Replication Agent attempts to re-establish the connection, using the values stored in its connection configuration parameters for that connection.
  - If the Replication Agent is unable to re-establish a connection after the number of retries specified in the `pds_retry_count` or `rs_retry_count` parameter, then the Replication Agent instance goes to *Admin* state and the Log Transfer Manager component attempts to return the Replication Agent instance to *Replicating* state, based on the settings of the `ra_retry_count` and `ra_retry_timeout` parameters.

## ra\_retry\_timeout

The number of seconds the Replication Agent waits between attempts to restart replication after a failure.

Default 10

Value An integer greater than 0.

Comment The value of the `ra_retry_timeout` parameter is the number of seconds that the Log Transfer Manager component will wait between its attempts to get the Replication Agent instance back into *Replicating* state after a failure causes the instance to go to *Admin* state.

## rasd\_backup\_dir

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

The directory path for Replication Agent System Database (RASD) backup files.

Default The path to the RASD *backup* directory created automatically when the Replication Agent instance was created. For example:

- On Microsoft Windows platforms:  
`%SYBASE%\RAX-15_1\inst_name\repository\backup`

where:

- `%SYBASE%` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.
- On UNIX platforms:

```
$SYBASE/RAX-15_1/inst_name/repository/backup
```

where:

- `$SYBASE` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.

Value

A valid path on the Replication Agent host machine.

Comments

- When you create a Replication Agent instance, an RASD *backup* directory is created automatically as part of the instance directory structure. The default value of the `rasd_backup_dir` parameter points to that directory.
- If you specify any valid path as the value of the `rasd_backup_dir` parameter, Replication Agent places its RASD backup files in that directory during RASD backup operations, and it looks in that directory for the RASD backup files during restore operations.

## rasd\_database

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

The directory path for the Replication Agent System Database (RASD) database file.

Default

The path to the RASD database file created automatically when the Replication Agent instance was created. For example:

- On Microsoft Windows platforms:

```
%SYBASE%\RAX-15_1\inst_name\repository\inst_name.db
```

where:

- `%SYBASE%` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.

- On UNIX platforms:

`$$SYBASE/RAX-15_1/inst_name/repository/inst_name.db`

where:

- `$$SYBASE` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.

Value	A valid path and RASD database file name on the Replication Agent host machine.
Comments	<ul style="list-style-type: none"><li>• When you create a Replication Agent instance, the <i>repository</i> directory and the RASD database file are created automatically. The default value of the <code>rasd_database</code> parameter points to the RASD database file in that directory.</li><li>• If you specify any valid path and RASD database file name as the value of the <code>rasd_database</code> parameter, the Replication Agent instance looks in that directory for its RASD database file, with the file name you specified.</li></ul>

## rasd\_mirror\_tran\_log

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

Enables or disables Replication Agent System Database (RASD) transaction log mirroring.

Default	false
Values	true – enables mirroring the RASD transaction log to another file. false – disables mirroring of the RASD transaction log.
Comment	Setting the value of the <code>rasd_mirror_tran_log</code> parameter to true provides additional recovery options in the event of a device failure on the Replication Agent host machine.

## rasd\_trace\_log\_dir

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

	The directory path for the Replication Agent System Database (RASD) trace log file.
Default	<p>The path to the <i>repository</i> directory created automatically when the Replication Agent instance was created. For example:</p> <ul style="list-style-type: none"> <li>On Microsoft Windows platforms:           <pre style="margin-left: 40px;">%SYBASE%\RAX-15_1\inst_name\repository</pre>           where:           <ul style="list-style-type: none"> <li><i>%SYBASE%</i> is the path to the Replication Agent installation directory.</li> <li><i>inst_name</i> is the name of the Replication Agent instance.</li> </ul> </li> <li>On UNIX platforms:           <pre style="margin-left: 40px;">\$SYBASE/RAX-15_1/inst_name/repository</pre>           where:           <ul style="list-style-type: none"> <li><i>\$SYBASE</i> is the path to the Replication Agent installation directory.</li> <li><i>inst_name</i> is the name of the Replication Agent instance.</li> </ul> </li> </ul>
Value	A valid path on the Replication Agent host machine.
Comments	<ul style="list-style-type: none"> <li>When you create a Replication Agent instance, the <i>repository</i> directory is created automatically as part of the instance directory structure. The default value of the <i>rasd_trace_log_dir</i> parameter points to that directory.</li> <li>If you specify any valid path as the value of the <i>rasd_trace_log_dir</i> parameter, the Replication Agent instance writes its RASD trace log file in that directory.</li> </ul>

## rasd\_tran\_log

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

The directory path for the Replication Agent System Database (RASD) transaction log file.

Default	<p>The path to the RASD transaction log file created automatically when the Replication Agent instance was created. For example:</p> <ul style="list-style-type: none"> <li>On Microsoft Windows platforms:</li> </ul>
---------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

`%SYBASE%\RAX-15_1\inst_name\repository\inst_name.log`

where:

- `%SYBASE%` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.
- On UNIX platforms:

`$$SYBASE/RAX-15_1/inst_name/repository/inst_name.log`

where:

- `$$SYBASE` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.

Value

A valid path on the Replication Agent host machine.

Comments

- When you create a Replication Agent instance, the *repository* directory and RASD transaction log file are created automatically. The default value of the `rasd_tran_log` parameter points to that transaction log file.
- If you specify any valid path and RASD transaction log file name as the value of the `rasd_tran_log` parameter, the Replication Agent instance looks in that directory for its RASD transaction log file, with the name you specified.

## rasd\_tran\_log\_mirror

---

**Note** This parameter is available only for Oracle and Microsoft SQL Server.

---

The directory path for the Replication Agent System Database (RASD) transaction log file mirror.

Default

The path to the RASD transaction log file mirror in the *tran\_log\_mirror* directory created automatically when the Replication Agent instance was created. For example:

- On Microsoft Windows platforms:

`%SYBASE%\RAX-15_1\inst_name\repository\tran_log_mirror\inst_name.log`

where:

- `%SYBASE%` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.
- On UNIX platforms:

```
$SYBASE/RAX-15_1/inst_name/repository/tran_log_mirror/inst_name.log
```

where:

- `$SYBASE` is the path to the Replication Agent installation directory.
- `inst_name` is the name of the Replication Agent instance.

Value	A valid path on the Replication Agent host machine.
Comment	If you specify any valid path and transaction log file name as the value of the <code>rasd_tran_log_mirror</code> parameter, the Replication Agent instance looks in that directory for its RASD transaction log file mirror, with the name you specified.

## rs\_charset

The character set used in communication with the primary Replication Server.

The Replication Agent default character set must be set to match the primary database's character set. The value of the `rs_charset` parameter must be set to match Replication Server's character set. If they differ, Replication Agent will do character set conversion before sending data to Replication Server.

If the character set on your Replication Agent is different from the one on your primary database, you need to set the `RA_JAVA_DFLT_CHARSET` environment variable. The Replication Agent character set must be the same as that of the primary database. For more information on setting the `RA_JAVA_DFLT_CHARSET` environment variable, see Chapter 2 of the Replication Agent *Administration Guide*.

---

**Note** Setting this property to anything other than the character set of the primary Replication Server causes Replication Agent to do character set conversion before sending data to Replication Server. This will degrade the Replication Agent performance.

---

Default	Defaults to empty string ("").
Value	Any valid Sybase character set supported by the Java VM on the Replication Agent host machine.

- Comments
- Sybase recommends that you use the exact same value as that of the RS\_charset parameter in the Replication Server configuration (.cfg) file which is located at: `$SYBASE/REP-15_0/install/<instance>.cfg`. For example, `iso_1`.
  - Sybase recommends that you configure the primary data server and primary Replication Server to use the same character set.

---

**Note** If rs\_charset is not set at the time you try to resume replication, Replication Agent returns an error.

---

When the Replication Agent instance is created, the rs\_charset parameter is set to its default value "" (empty string).

- If you specify a valid character set for the value of the rs\_charset parameter, the Replication Agent instance sends replicated transaction data from the primary database to the primary Replication Server in that character set.
- If you do *not* specify a valid character set name for the value of the rs\_charset parameter (including the default rs\_charset value ""), the Replication Agent instance will not allow you to resume replication.
- If the values of the rs\_charset and the system default character set are valid but *not* the same value, Replication Agent converts the replicated transaction data from the system-defined database character set to the Replication Server character set before sending it to the primary Replication Server.
- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rs\_host\_name

The name of the primary Replication Server host machine.

Default <not\_configured>

Value A valid host name.

- Comments
- The value of the rs\_host\_name parameter is the name of the host machine for the primary Replication Server.
  - See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.



## rs\_packet\_size

	The network packet size on the connection to the primary Replication Server.
Default	2048
Value	An integer from 512 to 8192.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>rs_packet_size</code> parameter is the maximum size (in bytes) of the network packets handled by the TCP/IP network protocol.</li><li>• The Replication Agent <code>rs_packet_size</code> parameter is equivalent to the Replication Server <code>rs_packet_size</code> parameter.</li><li>• When the network packet size is smaller, more packets must be processed to transmit a given amount of data to the Replication Server. When the network packet size is larger, more system resources are consumed to process the packets.</li><li>• The optimum value of the <code>rs_packet_size</code> parameter is based on the nature of the typical data replicated. If the typical operation is very large, a larger packet size is more efficient.</li><li>• A larger value of the <code>rs_packet_size</code> parameter is more efficient when the value of the <code>lti_batch_mode</code> parameter is true.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## rs\_password

	The password that Replication Agent uses for Replication Server access.
Default	"" (empty string)
Value	A valid password.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>rs_password</code> parameter is the password for the user login name that Replication Agent uses to log in to the primary Replication Server.</li><li>• The value of the <code>rs_password</code> parameter is encrypted in the Replication Agent instance configuration file.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## rs\_port\_number

	The client port number of the primary Replication Server.
Default	1111
Value	A valid port number on the Replication Server host machine.
Comments	<ul style="list-style-type: none"><li>• The value of the rs_port_number parameter is the client port number of the primary Replication Server.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## rs\_retry\_count

	The number of times the Replication Agent will retry establishing a connection to the primary Replication Server.
Default	5
Value	An integer greater than 0.
Comments	<ul style="list-style-type: none"><li>• The value of the rs_retry_count parameter is the number of times that Replication Agent will try to establish a network connection to the Replication Server after a connection failure.</li><li>• Sybase recommends a setting of 5 for this parameter.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## rs\_retry\_timeout

	The number of seconds the Replication Agent waits between attempts to connect to the primary Replication Server.
Default	10
Value	An integer greater than 0.
Comments	<ul style="list-style-type: none"><li>• The value of the rs_retry_timeout parameter is the number of seconds that the Replication Agent will wait between its retry attempts to establish a network connection to the primary Replication Server after a connection failure.</li></ul>

- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rs\_source\_db

The name of the database identified in the Replication Server primary database connection.

Default <not\_configured>

Value A valid database name.

- Comments
- The value of the `rs_source_db` parameter is the name of the primary database by which the primary Replication Server recognizes the primary database transaction log.
  - The value of the `rs_source_db` parameter must match the name of the database specified in the Replication Server create connection command for the primary database.
  - See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rs\_source\_ds

The name of the data server identified in the Replication Server primary database connection.

Default <not\_configured>

Value A valid server name.

- Comments
- The value of the `rs_source_ds` parameter is the name of the primary data server by which the primary Replication Server recognizes the primary database transaction log.
  - The value of the `rs_source_ds` parameter must match the name of the data server specified in the Replication Server create connection command for the primary database.
  - The value of the `rs_source_ds` parameter should *not* be the same as the name of the Replication Agent instance.
  - See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rs\_username

The user login name that the Replication Agent uses for Replication Server access.

Default

<not\_configured>

Value

A valid user name.

Comments

- The value of the rs\_username parameter is the user login name that Replication Agent uses to log in to the primary Replication Server.
- The value of the rs\_password parameter is the password for the login name specified by the rs\_username parameter.
- The user login name that Replication Agent uses to log in to the Replication Server must have connect source permission in the Replication Server.
- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rssd\_charset

The character set used in communication with the RSSD of the primary Replication Server.

Default

"" (empty string)

Value

Any valid Sybase character set supported by the Java VM on the Replication Agent host machine.

Comments

- The value of the rssd\_charset parameter must match (or be compatible with) the RSSD character set. The RSSD character set is usually the same as the Replication Server default character set identified by the Replication Server rs\_charset configuration parameter.
- If you specify a valid character set for the value of the rssd\_charset parameter, the Replication Agent instance communicates with the RSSD using that character set.
- If you do *not* specify a valid character set name for the value of the rssd\_charset parameter (including the default rssd\_charset value ""), the Replication Agent communicates with the RSSD using the RSSD charset.
- The rssd\_charset parameter does not need to be set if the Replication Agent use\_rssd parameter is set to false.

- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rssd\_database\_name

The database name of the RSSD of the primary Replication Server.

Default	<not_configured>
Value	A valid database name.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>rssd_database_name</code> parameter is the database name of the RSSD of the primary Replication Server.</li><li>• The <code>rssd_database_name</code> parameter does not need to be set if the Replication Agent <code>use_rssd</code> parameter is set to false.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## rssd\_host\_name

The name of the machine on which the RSSD of the primary Replication Server resides.

Default	<not_configured>
Value	A valid host name.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>rssd_host_name</code> parameter is the name of the host machine on which the RSSD of the primary Replication Server resides.</li><li>• The <code>rssd_host_name</code> parameter does not need to be set if the Replication Agent <code>use_rssd</code> parameter is set to false.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## rssd\_password

The password that the Replication Agent uses for access to the RSSD of the primary Replication Server.

Default

"" (empty string)

Value

A valid password.

Comments

- The value of the `rssd_password` parameter is the password for the user login name that the Replication Agent uses to access the RSSD of the primary Replication Server.
- The value of the `rssd_password` parameter is encrypted in the Replication Agent instance configuration file.
- The `rssd_password` parameter need not be set if the Replication Agent `use_rssd` parameter is set to `false`.
- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rssd\_port\_number

The client port number of the Replication Server System Database (RSSD) of the primary Replication Server.

Default

1111

Value

A valid port number on the RSSD host machine.

Comments

- The value of the `rssd_port_number` parameter is the client port number of the RSSD data server.
- The `rssd_port_number` parameter need not be set if the Replication Agent `use_rssd` parameter is set to `false`.
- See the Replication Agent *Administration Guide* for more information about setting up Replication Agent connection configuration parameters.

## rssd\_username

The user login name that the Replication Agent uses to access the RSSD of the primary Replication Server.

Default	<not_configured>
Value	A valid user login name in the RSSD data server.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>rssd_username</code> parameter is the user login name that the Replication Agent uses to access the RSSD.</li><li>• The <code>rssd_username</code> parameter need not be set if the Replication Agent <code>use_rssd</code> parameter is set to <code>false</code>.</li><li>• See the Replication Agent <i>Administration Guide</i> for more information about setting up Replication Agent connection configuration parameters.</li></ul>

## scan\_sleep\_increment

The number of seconds to add to each wait interval before scanning the transaction log, after a previous scan yields no transaction to be replicated.

Default	5
Value	An integer from 0 to 3600.
Comments	<ul style="list-style-type: none"><li>• The value of the <code>scan_sleep_increment</code> parameter is the number of seconds added to each wait interval before the Log Reader component scans the log device for a transaction to be replicated, after a previous scan yields no such transaction.</li><li>• The number of seconds specified by the <code>scan_sleep_increment</code> parameter is added to each wait interval, until the wait interval reaches the value specified by the <code>scan_sleep_max</code> parameter.</li><li>• For optimum Replication Agent performance, the value of the <code>scan_sleep_increment</code> parameter should be balanced with the average number of operations in the primary database over a period of time. In general, better performance results from reading more operations from the transaction log during each Log Reader scan.</li><li>• With a primary database that is less frequently updated, increasing the value of the <code>scan_sleep_increment</code> parameter may improve overall performance.</li></ul>

- If the database is continuously updated, the value of the `scan_sleep_increment` parameter may not be significant to Replication Agent performance.

## scan\_sleep\_max

The maximum wait interval between Log Reader transaction log scans.

Default

60

Value

An integer from 5 to 86400.

Comments

- The value of the `scan_sleep_max` parameter is the maximum number of seconds that can elapse before the Log Reader component scans the transaction log for a transaction to be replicated, after a previous scan yields no such transaction.
- For reduced replication latency in an infrequently updated database, Sybase recommends lower number settings for the `scan_sleep_max` parameter.
- If the primary database is continuously updated, the value of the `scan_sleep_max` parameter is not significant to Replication Agent performance.

## skip\_ltl\_errors

Determines whether the Replication Agent ignores Log Transfer Language (LTL) error messages.

---

**Warning!** Using the `skip_ltl_errors` parameter incorrectly may cause data inconsistencies between the primary and replicate databases.

---

Default

false

Values

true – enables skipping LTL errors to continue replication.

false – disables skipping LTL errors.

Comments

- If the `skip_ltl_errors` configuration parameter is set to true, the Replication Agent instance logs any LTL error messages returned by the Replication Server, along with the offending LTL commands, and then it continues processing transaction log records.



- If the `skip_ltl_errors` configuration parameter is set to `false`, the Replication Agent instance stops all of its replication processing and goes to *Admin* state when it receives an LTL error message and the error is unrecoverable.
- The `skip_ltl_errors` parameter is intended for troubleshooting only, with assistance from Sybase Technical Support.

## structured\_tokens

Determines whether the Replication Agent uses LTL structured tokens.

Default

true

Values

true – enables LTL structured tokens.

false – disables LTL structured tokens.

Comments

- If the `structured_tokens` configuration parameter is set to `true`, the Log Transfer Interface (LTI) component uses LTL structured tokens when it generates LTL commands.
- Using structured tokens in the LTL can significantly improve overall replication system performance.
- Using structured tokens in the LTL can improve Replication Server performance, especially when non-Sybase datatypes in the primary database must be translated by Replication Server.
- To replicate columns that have one or more spaces in the column name, you must set the value of the `structured_tokens` parameter to `true`.

## truncation\_interval

Specifies a time interval between automatic truncations of the Replication Agent transaction log.

---

**Warning!** If you configure automatic truncation, For UDB, the Replication Agent silently deletes the primary database log files, or for Oracle the Replication Agent deletes the archive log files that it no longer needs. For more information, see the Replication Agent *Primary Database Guide*.

---

Default

0

Value

An integer from 0 to 720.

- Comments
- The value of the `truncation_interval` parameter is the number of minutes between automatic transaction log truncations.
  - Automatic transaction log truncation based on the value of the `truncation_interval` parameter takes place only when the value of the `truncation_type` parameter is `interval`.
  - The maximum truncation interval is 720 minutes, or 12 hours.
  - If the value of the `truncation_interval` parameter is 0 (zero) and the value of the `truncation_type` parameter is `interval` (the default values for both parameters), automatic truncation is disabled.
  - To truncate the transaction log manually, use the `pdb_truncate_xlog` command.
  - See the `pdb_archive_path`, `pdb_archive_remove` and `truncation_type` configuration properties.

## truncation\_type

Configures transaction log truncation behavior of the Replication Agent.

---

**Warning!** For UDB, the Replication Agent deletes the UDB primary database log files and for Oracle the Replication Agent deletes the archived log files that it no longer needs. For more information, see the Replication Agent *Primary Database Guide*.

---

Default `locator_update`

Values `command` – Replication Agent truncates the transaction log only when the `pdb_truncate_xlog` command is invoked.

When the value of the `truncation_type` parameter is `command`, the only way you can truncate the transaction log is by invoking the `pdb_truncate_xlog` command. No automatic truncation takes place when the value of the `truncation_type` parameter is `command`.

`locator_update` – Replication Agent truncates the transaction log automatically whenever it receives a new LTM Locator value from the primary Replication Server.

When the value of the `truncation_type` parameter is `locator_update`, the transaction log will be truncated automatically when Replication Agent receives a new LTM Locator from the primary Replication Server.

## Comments

**Note** For Oracle and UDB, truncation of the archive log files that Replication Agent no longer needs from the `pdb_archive_path` directory is performed only if the `pdb_archive_remove` property is true.

- Regardless of the value of the `truncation_type` parameter, you can truncate the Replication Agent transaction log manually at any time by invoking the `pdb_truncate_xlog` command.
- If the value of the `truncation_interval` parameter is 0 (zero) and the value of the `truncation_type` parameter is `interval` (the default values for both parameters), automatic truncation is disabled.
- Replication Agent receives a new LTM Locator based on the values of the `lti_update_trunc_point` property.
- See also `pdb_archive_path`, `pdb_archive_remove`, and `truncation_interval` configuration properties.

**use\_rssd**

Determines whether the Replication Agent uses replication definitions.

## Default

true

## Values

true – enables using replication definitions.

false – disables using replication definitions.

## Comments

- If the value of the `use_rssd` parameter is true, the Replication Agent instance connects to the Replication Server System Database (RSSD) to retrieve replication definitions for the primary database automatically whenever it goes from *Admin* state to *Replicating* state (for example, when the resume command is invoked).
  - Each time it retrieves replication definitions, Replication Agent stores the information in a cache. Replication Agent uses replication definitions stored in its cache when it generates Log Transfer Language (LTL) commands.

- If the Log Transfer Interface (LTI) component encounters an operation on a database object for which it does not have a cached replication definition, Replication Agent reconnects to the RSSD to update its replication definition cache.
- If a replication definition still cannot be found for the operation, the Replication Agent instance suspends all of its replication operations and goes to *Admin* state.
- Replication Agent can use information in table and function replication definitions (that is, replication definitions for individual primary database objects) stored in the RSSD to generate more efficient LTL, and thus improve throughput in the LTI component and the Replication Server.

Accessing replication definitions in the RSSD enables the LTI component to improve performance by:

- Omitting column names in LTL. When columns are sent in the order specified in the replication definition, column images can be sent without column names (headings), which reduces LTL overhead.
- Omitting unneeded columns in LTL. When columns are sent as specified in the replication definition, images for unchanged columns need not be sent, which reduces LTL overhead.
- Sending data for each column in the datatype specified by the replication definition. This allows data to be handled more efficiently all the way through the replication system.
- Sending database object names in the same character case as defined in the replication definition.
- If the value of the `use_rssd` parameter is `false`, none of the previously described performance improvements are possible. In that case, the Replication Agent sends all data as a `char` datatype in the LTL.
- If you use owner-qualified table names for either primary tables or replicate tables, you must:
  - Set the value of the `use_rssd` parameter to `true`
  - Specify an owner-qualified primary table name and/or replicate table name when you create the replication definition in the primary Replication Server

# Glossary

This glossary describes Replication Server and Replication Agent terms used in this book.

## **Adaptive Server**

The brand name for Sybase relational database management system (RDBMS) software products.

- *Adaptive Server Enterprise* manages multiple, large relational databases for high-volume online transaction processing (OLTP) systems and client applications.
- *Adaptive Server IQ* manages multiple, large relational databases with special indexing algorithms to support high-speed, high-volume business intelligence, decision support, and reporting client applications.
- *Adaptive Server Anywhere* manages relational databases with a small RDBMS footprint, which is ideal for embedded applications and mobile device applications.

See also **database** and **RDBMS**.

## **atomic materialization**

A materialization method that copies subscription data from a primary database to a replicate database in a single, atomic operation. No changes to primary data are allowed until the subscription data is captured at the primary database. See also **bulk materialization** and **nonatomic materialization**.

## **BCP utility**

A bulk copy transfer utility that provides the ability to load multiple rows of data into a table in a target database. See also **bulk copy**.

## **big endian**

Refers to which bytes are most significant in multi-byte datatypes and describes the order in which a sequence of bytes is stored in a computer's memory. In a big-endian system, bytes are stored left to right, with the most significant byte being stored at the memory location with the lowest address.

<b>bulk copy</b>	An Open Client interface for the high-speed transfer of data between a database table and program variables. It provides an alternative to using SQL insert and select commands to transfer data. See also <b>BCP utility</b> and <b>materialization</b> .
<b>bulk materialization</b>	A materialization method whereby subscription data in a replicate database is initialized outside of the replication system. You can use bulk materialization for subscriptions to table replication definitions or function replication definitions. See also <b>atomic materialization</b> , <b>materialization</b> , and <b>nonatomic materialization</b> .
<b>client</b>	In client/server systems, the part of the system that sends requests to servers and processes the results of those requests. See also <b>client application</b> .
<b>client application</b>	Software that is responsible for the user interface, including menus, data entry screens, and report formats. See also <b>client</b> .
<b>commit</b>	An instruction to the DBMS to make permanent the changes requested in a transaction. Contrast with <b>rollback</b> . See also <b>DBMS</b> and <b>transaction</b> .
<b>data client</b>	A client application that provides access to data by connecting to a data server. See also <b>client</b> , <b>client application</b> , and <b>data server</b> .
<b>data distribution</b>	A method of locating (or placing) discrete parts of a single set of data in multiple systems or at multiple sites. Data distribution is distinct from data replication, although a data replication system can be used to implement or support data distribution. Contrast with <b>data replication</b> .
<b>data replication</b>	The process of copying data to remote locations, and then keeping the replicated data synchronized with the primary data. Data replication is distinct from data distribution. Replicated data is stored copies of data at one or more remote sites throughout a system, and it is not necessarily distributed data. Contrast with <b>data distribution</b> . See also <b>transaction replication</b> .
<b>data server</b>	A server that provides the functionality necessary to maintain the physical representation of a table in a database. Data servers are usually database servers, but they can be any data repository with the interface and functionality a data client requires. See also <b>client</b> , <b>client application</b> , and <b>data client</b> .
<b>database</b>	A collection of data with a specific structure (or schema) for accepting, storing, and providing data for users. See also <b>data server</b> and <b>relational database</b> .
<b>database connection</b>	A connection that allows Replication Server to manage the database and distribute transactions to the database. Each database in a replication system can have only one database connection defined in Replication Server. See also <b>Replication Server</b> and <b>route</b> .

<b>datatype</b>	A keyword that identifies the characteristics of stored information on a computer. Some common datatypes are: char, int, smallint, date, time, numeric, and float. Different data servers support different datatypes.
<b>DBMS</b>	An abbreviation for <i>database management system</i> . A DBMS is a computer-based system for defining, creating, manipulating, controlling, managing, and using databases. The DBMS can include the user interface for using the database, or it can be a standalone data server system. Compare with <b>RDBMS</b> . See also <b>database</b> .
<b>function</b>	A Replication Server object that represents a data server operation, such as insert, delete, or begin transaction. Replication Server distributes operations to replicate databases as functions. See also <b>function string</b> .
<b>function string</b>	A string that Replication Server uses to map a function and its parameters to a data server API. Function strings allow Replication Server to support replication between (homogeneous) non-Sybase data servers, and heterogeneous replication, in which the primary and replicate databases are different types, with different SQL extensions and different command features. See also <b>function</b> .
<b>gateway</b>	Connectivity software that allows two or more computer systems with different network architectures to communicate.
<b>inbound queue</b>	A stable queue managed by Replication Server to spool messages received from a Replication Agent. See also <b>outbound queue</b> and <b>stable queue</b> .
<b>interfaces file</b>	A file containing information that Sybase Open Client and Open Server applications need to establish connections to other Open Client and Open Server applications. See also <b>Open Client</b> and <b>Open Server</b> .
<b>isql</b>	An interactive SQL client application that can connect and communicate with any Sybase Open Server application, including Adaptive Server, Replication Agent, and Replication Server. See also <b>Open Client</b> and <b>Open Server</b> .
<b>Java</b>	An object-oriented, platform-independent, “write once, run anywhere” programming language developed by Sun Microsystems. The Replication Agent is a Java application.
<b>Java VM</b>	The Java Virtual Machine. The Java VM (or JVM) is the part of the Java Runtime Environment (JRE) that interprets Java byte codes. See also <b>Java</b> and <b>JRE</b> .
<b>JDBC</b>	An abbreviation for <i>Java Database Connectivity</i> , is the standard communication protocol for connectivity between Java clients and data servers. See also <b>client</b> , <b>data server</b> , and <b>Java</b> .

<b>JRE</b>	An abbreviation for <i>Java Runtime Environment</i> , which consists of the Java Virtual Machine (Java VM or JVM), the Java Core Classes, and supporting files. To run a Java application, such as the Replication Agent, a JRE must be installed on the machine. See also <b>Java</b> and <b>Java VM</b> .
<b>LAN</b>	An abbreviation for <i>local area network</i> , a computer network located on the user's premises and covering a limited geographical area (usually a single site). Communication within a local area network is not subject to external regulations; however, communication across the LAN boundary can be subject to some form of regulation. Contrast with <b>WAN</b> .
<b>latency</b>	In transaction replication, the time it takes to replicate a transaction from a primary database to a replicate database. Specifically, latency is the time elapsed between committing an original transaction in the primary database and committing the replicated transaction in the replicate database. See also <b>transaction replication</b> .
<b>little endian</b>	Refers to which bytes are most significant in multi-byte datatypes and describes the order in which a sequence of bytes is stored in a computer's memory. In a little-endian system, bytes are stored right to left, with the least significant byte being stored at the memory location with the lowest address.
<b>Log Reader</b>	An internal component of the Replication Agent that interacts with the primary database to capture transactions for replication. See also <b>Log Transfer Interface</b> and <b>Log Transfer Manager</b> .
<b>LOB</b>	An abbreviation for <i>large object</i> , is a type of data element (or datatype) associated with a column that contains extremely large quantities of data.
<b>Log Reader</b>	An internal component of the Replication Agent that interacts with the primary database to capture transactions for replication. See also <b>Log Transfer Interface</b> and <b>Log Transfer Manager</b> .
<b>Log Transfer Interface</b>	An internal component of the Replication Agent that interacts with Replication Server to forward transactions for distribution to a replicate database. See also <b>Log Reader</b> and <b>Log Transfer Manager</b> .
<b>Log Transfer Manager</b>	An internal component of the Replication Agent that interacts with the other Replication Agent internal components to control and coordinate Replication Agent operations. See also <b>Log Reader</b> and <b>Log Transfer Interface</b> .
<b>Maintenance User</b>	A special user login name in the replicate database that Replication Server uses to apply replicated transactions to the database. See also <b>replicate database</b> and <b>Replication Server</b> .



---

<b>materialization</b>	The process of copying the data from a primary database to a replicate database, initializing the replicate database so that the replication system can begin replicating transactions. See also <b>atomic materialization</b> , <b>bulk materialization</b> , and <b>non-atomic materialization</b> .
<b>nonatomic materialization</b>	A materialization method that copies subscription data without a lock on the primary database. Changes to primary data are allowed during data transfer, which may cause temporary inconsistencies between the primary and replicate databases. Contrast with <b>atomic materialization</b> . See also <b>bulk materialization</b> .
<b>ODBC</b>	An abbreviation for <i>Open Database Connectivity</i> , is an industry standard communication protocol for clients connecting to data servers. See also <b>client</b> , <b>data server</b> , and <b>JDBC</b> .
<b>Open Client</b>	A Sybase product that provides customer applications, third-party products, and other Sybase products with the interfaces needed to communicate with Open Server applications. See also <b>Open Server</b> .
<b>Open Client application</b>	An application that uses Sybase Open Client libraries to implement Open Client communication protocols. See also <b>Open Client</b> and <b>Open Server</b> .
<b>Open Server</b>	A Sybase product that provides the tools and interfaces required to create a custom server. See also <b>Open Client</b> .
<b>Open Server application</b>	A server application that uses Sybase Open Server libraries to implement Open Server communication protocols. See also <b>Open Client</b> and <b>Open Server</b> .
<b>outbound queue</b>	A stable queue managed by Replication Server to spool messages to a replicate database. See also <b>inbound queue</b> , <b>replicate database</b> , and <b>stable queue</b> .
<b>primary data</b>	The version of a set of data that is the source used for replication. Primary data is stored and managed by the primary database. See also <b>primary database</b> .
<b>primary database</b>	The database that contains the data to be replicated to another database (the replicate database) through a replication system. The primary database is the source of replicated transactions and data in a replication system. Sometimes called the <i>active database</i> . Contrast with <b>replicate database</b> . See also <b>primary data</b> and <b>replicated transaction</b> .
<b>primary key</b>	The column or columns whose data uniquely identify each row in a table.
<b>primary table</b>	A table used as a source for replication. Primary tables are defined in the primary database schema. See also <b>primary data</b> and <b>primary database</b> .

<b>primary transaction</b>	A transaction that is committed in the primary database and recorded in the primary database transaction log. See also <b>primary database</b> and <b>transaction log</b> .
<b>quiesce</b>	An action that causes a system to go into a state in which further data changes are not allowed. See also <b>quiescent</b> .
<b>quiescent</b>	<p>In a replication system, a state in which all data-changing operations have been propagated to their destinations. Some Replication Server commands require that you quiesce the replication system.</p> <p>In a database, a state in which all data-changing operations are suspended so that transactions cannot change any data.</p> <p>This term is interchangeable with <i>quiesced</i> and <i>in quiesce</i>. See also <b>quiesce</b>.</p>
<b>RASD</b>	An abbreviation for <i>Replication Agent System Database</i> . Information in the RASD is used by the primary database to recognize database structure or schema objects in the transaction log.
<b>RCL</b>	An abbreviation for <i>Replication Command Language</i> , the command language used to manage Replication Server. See also <b>Replication Server</b> .
<b>RDBMS</b>	An abbreviation for <i>relational database management system</i> , is an application that manages and controls relational databases. Compare with <b>DBMS</b> . See also <b>relational database</b> .
<b>relational database</b>	A collection of data in which data is viewed as being stored in tables, which consist of columns (data items) and rows (units of information). Relational databases can be accessed by SQL requests. Compare with <b>database</b> . See also <b>SQL</b> .
<b>replicate data</b>	The data managed by a replicate database, which is the destination (or target) of a replication system. Contrast with <b>primary data</b> . See also <b>replicate database</b> and <b>replication system</b> .
<b>replicate database</b>	A database that contains data replicated from another database (the primary database) through a replication system. The replicate database is the database that receives replicated transactions and/or data in a replication system. Sometimes called the <i>standby database</i> . Contrast with <b>primary database</b> . See also <b>replicate data</b> , <b>replicated transaction</b> , and <b>replication system</b> .
<b>replicated data</b>	A set of data that is replicated from a primary database to a replicate database by a replication system. See also <b>primary database</b> , <b>replication system</b> , and <b>replicate database</b> .

<b>replicated transaction</b>	A primary transaction that is replicated from a primary database to a replicate database by a transaction replication system. See also <b>primary database</b> , <b>primary transaction</b> , <b>replicate database</b> , and <b>transaction replication</b> .
<b>Replication Agent</b>	An application that reads a primary database transaction log to acquire information about data-changing transactions in the primary database, processes the log information, and then sends it to a Replication Server for distribution to a replicate database. See also <b>primary database</b> , <b>replicate database</b> , and <b>Replication Server</b> .
<b>replication definition</b>	A description of a table or stored procedure in a primary database, for which subscriptions can be created. The replication definition, maintained by Replication Server, includes information about the columns to be replicated and the location of the primary table or stored procedure. See also <b>Replication Server</b> and <b>subscription</b> .
<b>Replication Server</b>	The Sybase software product that provides the infrastructure for a robust transaction replication system. See also <b>Replication Agent</b> .
<b>RSSD</b>	An abbreviation for <i>Replication Server System Database</i> , that manages replication system information for a Replication Server. See also <b>Replication Server</b> .
<b>replication system</b>	A data processing system that replicates data from one location to another. Data can be replicated between separate systems at a single site, or from one or more local systems to one or more remote systems. See also <b>data replication</b> and <b>transaction replication</b> .
<b>rollback</b>	An instruction to a database to reverse the data changes requested in a unit of work (a transaction). Contrast with <b>commit</b> . See also <b>transaction</b> .
<b>route</b>	A one-way message stream from a primary Replication Server to a replicate Replication Server. Routes carry data-changing commands (including those for RSSDs) and replicated functions (database procedures) between separate Replication Servers. See also <b>Replication Server</b> .
<b>SQL</b>	An abbreviation for <i>Structured Query Language</i> , a non-procedural programming language used to process data in a relational database. ANSI SQL is an industry standard. See also <b>transaction</b> .

<b>stable queue</b>	A disk device-based, store-and-forward queue managed by Replication Server. Messages written into the stable queue remain there until they can be delivered to the appropriate process or replicate database. Replication Server provides a stable queue for both incoming messages (the inbound queue) and outgoing messages (the outbound queue). See also <b>database connection</b> , <b>Replication Server</b> , and <b>route</b> .
<b>subscription</b>	A request for Replication Server to maintain a replicated copy of a table, or a set of rows from a table, in a replicate database at a specified location. See also <b>replicate database</b> , <b>replication definition</b> , and <b>Replication Server</b> .
<b>table</b>	In a relational database, a two-dimensional array of data, or a named data object that contains a specific number of unordered rows composed of a group of columns that are specific to the table. See also <b>database</b> and <b>relational database</b> .
<b>transaction</b>	A unit of work in a database that can include zero, one, or many operations (including insert, update, and delete operations); it can be either applied or rejected as a whole. Each SQL statement that modifies data can be treated as a separate transaction, if the database is so configured. See also <b>replicated transaction</b> and <b>SQL</b> .
<b>transaction log</b>	Generally, the log of transactions that affect the data managed by a database or a data server. Replication Agent reads the transaction log to identify and acquire the transactions to be replicated from the primary database. See also <b>primary database</b> , <b>Replication Agent</b> , and <b>transaction</b> .
<b>transaction replication</b>	A data replication method that copies data-changing operations from a primary database to a replicate database. See also <b>data replication</b> , <b>primary database</b> , and <b>replicate database</b> .
<b>transactional consistency</b>	A condition in which all transactions in the primary database are applied in the replicate database, and in the same order that they were applied in the primary database. See also <b>primary database</b> , <b>replicate database</b> , and <b>transaction</b> .
<b>WAN</b>	An abbreviation for <i>wide area network</i> , a system of local-area networks (LANs) connected together with data communication lines. Contrast with <b>LAN</b> .

# Index

## A

- abbreviated form of LTL 120
- Admin* state 64, 86–87, 101
- admin\_port** configuration parameter 117
- administrator login 80, 135, 135
- alias, of database object 25, 35, 49
- articles in RASD 67, 68
  - truncating 87
- asm\_password** configuration parameter 117
- asm\_tns\_connection** configuration parameter 118
- asm\_tns\_filename** configuration parameter 118
- asm\_tns\_username** configuration parameter 119
- automatic running of scripts 141

## B

- backing up RASD 93, 156–157
- base objects, transaction log 47
- batch mode, LTL 129–130, 131–132
- buffers, Log Transfer Interface 61–62, 123, 129, 131–132

## C

- changing
  - configuration parameters 62
  - primary database log device path 65
- character case in LTL
  - See also* Log Transfer Language (LTL)
  - column names 132–133
  - stored procedure names 29, 132–133
  - table names 41–42, 132–133
- character set
  - primary data server 162
  - Replication Server 161–162
  - RSSD 166–167
- client ports

- primary data server 152–153
- Replication Server 164
- RSSD 168
- column\_compression** configuration parameter 120
- columns
  - date/time conversion with LOB columns 143
  - enabling and disabling replication 22–27
  - enabling replication 143–144
  - fields in RASD 71–73
  - name in LTL 132–133
  - name of LOB column 25
  - name returned by database 10–12
  - primary key 12–13
  - replication status 25
  - sent in LTL 120
- commands 1
  - help information 66–67
  - log\_system\_name** 6–7
  - pdb\_capabilities** 7
  - pdb\_date** 7–8
  - pdb\_execute\_sql** 8–9
  - pdb\_gen\_id** 9–10
  - pdb\_get\_columns** 10–12
  - pdb\_get\_databases** 12
  - pdb\_get\_primary\_keys** 12–13
  - pdb\_get\_procedure\_parms** 14, 15
  - pdb\_get\_procedures** 15–17
  - pdb\_get\_sql\_database** 17
  - pdb\_get\_tables** 18–19
  - pdb\_set\_sql\_database** 21–22
  - pdb\_setrepcol** 22–27
  - pdb\_setrepddl** 27
  - pdb\_setrepproc** 28–38
  - pdb\_setrepseq** 39
  - pdb\_setreptable** 41–52
  - pdb\_skip\_op** 52
  - pdb\_truncate\_xlog** 56
  - pdb\_version** 56
  - pdb\_xlog** 56–61
  - quiesce** 61–62

- ra\_config** 62–64, 109, 110
- ra\_date** 64
- ra\_devicepath** 65
- ra\_dump** 65–66
- ra\_help** 66–67
- ra\_helparticle** 67–68
- ra\_helppdb** 69
- ra\_helpdevice** 69
- ra\_helpfield** 71–73
- ra\_helplocator** 73
- ra\_helpuser** 74–75
- ra\_locator** 75
- ra\_maint\_id** 77–78
- ra\_marker** 78–79
- ra\_migrate** 79
- ra\_set\_login** 80, 109, 110
- ra\_statistics** 80, 86
- ra\_status** 86, 87
- ra\_truncatearticles** 87, 88
- ra\_truncateusers** 88
- ra\_updatedevices** 89, 122
- ra\_version** 91
- ra\_version\_all** 91–92
- rasd\_backup** 92–93
- rasd\_restore** 94
- resume** 94–95
- rs\_ticket** 98
- shutdown** 100–101
- suspend** 101
- test\_connection** 102–104
- trace** 104–107
- communications
  - driver version 56, 91–92
  - JDBC driver 148, 149
  - network packet size 163
  - ODBC driver 148–149
  - primary data server parameters 155
  - Replication Server parameters 161, 166
  - RSSD parameters 169
  - testing connections 102–104
- compress\_ltl\_syntax** configuration parameter 120
- configuration files 109, 110
- configuration parameters 109
  - admin\_port** 117
  - asm\_password** 117
  - asm\_tns\_connection** 118
  - asm\_tns\_filename** 118
  - asm\_tns\_username** 119
  - column\_compression** 120
  - compress\_ltl\_syntax** 120
  - connect\_to\_rs** 121
  - ddl\_password** 121, 122
  - ddl\_username** 122
  - dump\_batch\_timeout** 123
  - filter\_maint\_userid** 123–124
  - function\_password** 124
  - function\_username** 124–125
  - getting current values 62
  - log\_backup\_files** 125
  - log\_directory** 7, 125–126
  - log\_trace\_verbose** 126
  - log\_wrap** 127
  - lti\_batch\_mode** 129–130
  - lti\_max\_buffer\_size** 130
  - lti\_update\_trunc\_point** 131
  - ltl\_batch\_size** 131–132
  - ltl\_big\_endian\_unitext** 132
  - ltl\_character\_case** 132–133
  - ltl\_origin\_time\_required** 133–134
  - ltl\_send\_only\_primary\_keys** 134
  - ltm\_admin\_pw** 110, 135
  - ltm\_admin\_user** 110, 135
  - max\_ops\_per\_scan** 136
  - pdb\_archive\_path** 136
  - pdb\_archive\_remove** 137, 145
  - pdb\_auto\_create\_repdefs** 138
  - pdb\_auto\_run\_scripts** 141
  - pdb\_automark\_tables** 140
  - pdb\_convert\_datetime** 142–143
  - pdb\_dflt\_column\_repl** 143–144
  - pdb\_dflt\_object\_repl** 144–145
  - pdb\_ownerfilter** 19–21
  - pdb\_support\_large\_identifiers** 145
  - pdb\_xlog\_device** 146–147
  - pdb\_xlog\_prefix** 59, 60, 147
  - pdb\_xlog\_prefix\_chars** 147, 148
  - pds\_connection\_type** 148
  - pds\_dac\_port\_number** 150
  - pds\_database\_name** 150
  - pds\_datasource\_name** 151
  - pds\_host\_name** 151
  - pds\_integrated\_security** 151

- pds\_password** 152
  - pds\_port\_number** 152–153
  - pds\_retry\_count** 153
  - pds\_retry\_timeout** 153
  - pds\_server\_name** 153–154
  - pds\_tns\_connection** 154
  - pds\_tns\_filename** 154
  - pds\_username** 155
  - ra\_retry\_count** 155–156
  - ra\_retry\_timeout** 156
  - rasd\_backup\_dir** 156–157
  - rasd\_database** 157–158
  - rasd\_mirror\_tran\_log** 158
  - rasd\_trace\_log\_dir** 158–159
  - rasd\_tran\_log** 159–160
  - rasd\_tran\_log\_mirror** 160–161
  - rs\_charset** 161–162
  - rs\_host\_name** 162
  - rs\_packet\_size** 163
  - rs\_password** 163
  - rs\_port\_number** 164
  - rs\_retry\_count** 164
  - rs\_retry\_timeout** 164–165
  - rs\_source\_db** 165
  - rs\_source\_ds** 165
  - rs\_username** 166
  - rssd\_charset** 166–167
  - rssd\_database\_name** 167
  - rssd\_host\_name** 167
  - rssd\_password** 168
  - rssd\_port\_number** 168
  - rssd\_username** 169
  - scan\_sleep\_increment** 169–170
  - scan\_sleep\_max** 170
  - setting 62, 64
  - skip\_ltl\_errors** 170, 171
  - structured\_tokens** 171
  - truncation\_interval** 171
  - truncation\_type** 172–173
  - use\_rssd** 173–174
  - connect\_to\_rs** configuration parameter 121
  - connections
    - character sets 161–162, 166–167
    - dummy connection 121
    - pds\_connection\_type** parameter 148, 149
    - pds\_dac\_port\_number** parameter 150
    - pds\_database\_name** parameter 150
    - pds\_datasource\_name** parameter 151
    - pds\_host\_name** parameter 151
    - pds\_port\_number** parameter 152–153
    - pds\_retry\_count** parameter 153
    - pds\_retry\_timeout** parameter 153
    - pds\_server\_name** parameter 153–154
    - primary data server character set 162
    - Replication Server character set 161–162
    - rs\_charset** parameter 161–162
    - rs\_host\_name** parameter 162
    - rs\_packet\_size** parameter 163
    - rs\_password** parameter 163
    - rs\_port\_number** parameter 164
    - rs\_retry\_count** parameter 164
    - rs\_retry\_timeout** parameter 164–165
    - rs\_source\_db** parameter 165
    - rs\_source\_ds** parameter 165
    - rs\_username** parameter 166
    - RSSD character set 166–167
    - rssd\_charset** parameter 166–167
    - rssd\_database\_name** parameter 167
    - rssd\_host\_name** parameter 167
    - rssd\_port\_number** parameter 168
    - testing 102–104, 121
    - converting temporal datatypes 142–143
    - creating
      - transaction log 59, 141
    - current database for executing SQL 8–9, 17, 21–22
- ## D
- data source name (DSN)
    - See* ODBC driver
  - database connection to Replication Server 42
  - database connections
    - in Replication Server 77–78
  - database connections in Replication Server 51
  - database devices
    - help command 69–71
    - primary database log device 65, 69, 89
    - primary database mirror log device 69, 122
  - database generation ID 9–10
    - See also* LTM Locator; origin queue ID
  - database objects

- See also* columns; primary tables; stored procedures
  - aliases, synonyms, and views 25, 35, 47, 49
  - articles in RASD 67–68
  - character case of names in LTL 132–133
  - columns 10–12, 71–73
  - fields in articles 71–73
  - LOB columns 22–27
  - primary keys 12–13
  - stored procedures 14, 17, 28–38, 67–68
  - tables 18–19, 67–68
  - transaction log prefix 147
  - users 75, 88, 89
  - databases
    - See* DB2 Universal Database; Informix Dynamic Server; Microsoft SQL Server; Oracle database server; primary databases; RASD; replicate databases
  - datatypes
    - char** (Sybase) 142–143
    - converting non-Sybase date/time 142–143
    - datetime** (Sybase) 142–143
  - date and time returned
    - primary data server 7–8
    - Replication Agent 64
  - date/time datatype conversion 142–143
  - datetime** Sybase datatype 142–143
  - DB2 Universal Database
    - connection type 148–149
    - database alias in DSN 151
  - DDL in transaction log 87
  - ddl\_password** configuration parameter 121, 122
  - ddl\_username** configuration parameter 122
  - deleting
    - transaction log 59–61, 141
  - device name of primary database 146–147
  - diagnostic, verbose logging 126
  - disabling column replication 22–27
    - for all LOB columns 26
  - disabling stored procedure replication 28–38
    - for all stored procedures 35
  - disabling table replication 41, 52
    - for all tables 50
  - DSN (ODBC data source name)
    - See* ODBC driver
  - dummy connections 121
  - dump marker in transaction log 65–66
  - dump\_batch\_timeout** configuration parameter 123
- ## E
- enabling column replication 22–27
    - by default 143–144
    - for all LOB columns 26
  - enabling stored procedure replication 28–38
    - for all stored procedures 35
  - enabling table replication 52
    - by default 144–145
    - for all tables 50
  - errors 170
  - errors, Log Transfer Language (LTL) 171
  - executing SQL commands 8–9, 17, 21–22
- ## F
- files
    - configuration 109, 110
    - LTL trace log 105
    - mirrored RASD transaction log 160–161
    - RASD backup 156–157
    - RASD database file 157–158
    - RASD trace log 158–159
    - Replication Agent scripts directory 59, 60
    - system log 6–7, 104–107
  - filter\_maint\_userid** configuration parameter 123–124
  - forcing unmarking
    - stored procedures 30, 35
    - tables 43, 48, 50
  - format of configuration file 110
  - function replication definitions 30, 36
  - function\_password** configuration parameter 124
  - function\_username** configuration parameter 124–125
- ## G
- gateway to primary database 56
  - generation ID of primary database 9–10
    - See also* LTM Locator; origin queue ID
  - getting help with Replication Agent commands 66–67
  - getting information
    - primary database date and time 7–8
    - primary database objects 10, 19
    - primary database version 56



Replication Agent commands 75  
 Replication Agent date and time 64  
 Replication Agent performance 80, 86  
 Replication Agent status 86–87  
 Replication Agent version 91

## H

help  
   for commands 66–67  
   for configuration parameters 62  
 help commands  
   articles in RASD 67, 68  
   fields in articles 71–73  
   LTM Locator 73  
   primary database 69  
   primary database log devices 69–71  
   primary database users in RASD 74–75  
 host machines  
   primary data server 151  
   Replication Agent 91, 117  
   Replication Server 162  
   RSSD 167

## I

immediate shutdown 100–101  
 instance, Replication Agent  
   administrator login 80  
   configuration file 109, 110  
   quiescing 61–62  
   resuming 94–95  
   shutting down 100–101  
   status 86–87

## J

Java Runtime Environment (JRE)  
   character set 161–162, 166–167  
   version 91  
 JDBC driver  
   DB2 Universal Database 148–149  
   Oracle database server 148, 149

version 56, 91–92

## L

LOB columns  
   date/time conversion with 143  
   disabling replication for 22–27  
   enabling replication 143–144  
   enabling replication for 22–27  
   name of 25  
   replication status 25  
 log devices  
   help command 69–71  
   path to log device 65  
   path to mirror log device 69  
   updating log device repository 89–91  
 log devices, primary database  
   path to location 65  
   updating in RASD 89–91  
 log files  
   RASD trace log 158–159  
   RASD transaction log 158  
   Replication Agent system log 6–7, 104–107, 125  
   truncating transaction log 56, 131  
   wrapping 127  
 Log Reader component  
   **filter\_maint\_userid** parameter 123–124  
   **max\_ops\_per\_scan** parameter 136  
   operation queue 136  
   operations per scan 136  
   quiesce processing 61  
   **scan\_sleep\_increment** parameter 169–170  
   **scan\_sleep\_max** parameter 170  
   statistics 80, 86  
 Log Transfer Interface component  
   batch mode 129–130, 131–132  
   batch timeout 123  
   buffer size 131–132  
   **column\_compression** parameter 120  
   **compress\_ltl\_syntax** parameter 120  
   **connect\_to\_rs** parameter 121  
   **dump\_batch\_timeout** parameter 123  
   **lti\_update\_trunc\_point** parameter 131  
   LTL batch mode buffer 130, 131–132  
   **ltl\_batch\_size** parameter 131–132

## Index

- ltl\_character\_case** parameter 132–133
  - ltl\_origin\_time\_required** parameter 133–134
    - quiesce processing 62
    - statistics 80, 86
  - Log Transfer Language (LTL)
    - character case of object names 29, 41–42, 132–133
    - columns sent in 120
    - compressed syntax 120
    - error messages 170, 171
    - LTL batch mode buffer 130, 131–132
    - LTL trace log 105
    - object owner name 43
    - origin\_time** command tag 133–134
    - structured tokens 171
  - Log Transfer Manager component
    - statistics 80, 86
  - log\_backup\_files** configuration parameter 125
  - log\_directory** configuration parameter 7, 125–126
  - log\_system\_name** command 6–7
  - log\_trace\_verbose** configuration parameter 126
  - log\_wrap** configuration parameter 127
  - lti\_batch\_mode** configuration parameter 129–130
  - lti\_max\_buffer\_size** configuration parameter 130
  - lti\_update\_trunc\_point** configuration parameter 131
  - ltl\_batch\_size** configuration parameter 131–132
  - ltl\_big\_endian\_unixtext** configuration parameter 132
  - ltl\_character\_case** configuration parameter 132–133
  - ltl\_origin\_time\_required** configuration parameter 133–134
  - ltl\_send\_only\_primary\_keys** configuration parameter 134
- LTM Locator 75–77, 172
  - help command 73
  - origin queue ID 9–10
  - position in transaction log 75–77, 94
  - updating 131
- ltm\_admin\_pw** configuration parameter 110, 135
  - ltm\_admin\_user** configuration parameter 110, 135
- ## M
- Maintenance User
  - filtered by Log Reader 123–124
  - login name 77–78
- markers in transaction log
  - ra\_marker** object 78–79
  - rs\_dumpdb** marker 65–66
  - rs\_dumptran** marker 65–66
- marking a primary table 41–52
  - all user tables 50
  - items not allowed 25, 47, 49
  - marking status 49
  - running scripts automatically 141
- marking a stored procedure 28–38
  - items not allowed 35
  - marking status 34
  - running scripts automatically 141
- max\_ops\_per\_scan** configuration parameter 136
- Microsoft SQL Server
  - connection type 148
  - ODBC driver 148
- mirror log devices, primary database
  - path to location 69
  - updating in RASD 122
- mirrored RASD transaction log 158, 160–161
- ## N
- names
  - columns returned by database 10–12
  - host machine 151, 162, 167
  - primary data server 153–154
  - primary database 12, 150
  - primary table owner 41–42, 43
  - RASD database name 157–158
  - RSSD database name 167
  - stored procedure owner 29
  - stored procedures 15–17
- network packet size 163
- ng 148
- ## O
- objects, database
  - columns 10–12
  - primary keys 12–13
  - stored procedures 14, 17
  - tables 18–19
  - users 75, 89

- ODBC driver
    - data source name (DSN) 151
  - operating system
    - version 91
  - Oracle database server
    - connection type 148
    - JDBC driver 149
  - origin queue ID
    - See also* LTM Locator
    - database generation ID 9–10
  - origin\_time** LTL command tag 133–134
  - owner of objects
    - primary tables 41–42, 43
    - stored procedures 29
- P**
- parameters
    - See also* configuration parameters
    - Replication Agent configuration 62–64
    - stored procedure 14, 15
  - passwords
    - primary database user login 152
    - Replication Agent administrator 80, 135
    - Replication Server user login 163
    - RSSD user login 168
  - path
    - log devices 65, 69, 71, 89, 91
    - mirror log devices 69, 122
    - RASD backup directory 92, 94, 156–157
    - RASD database file 157–158
    - RASD trace log 159
    - RASD transaction log 159–160
    - RASD transaction log mirror 160–161
    - Replication Agent scripts directory 59, 60
    - Replication Agent system log 105, 125, 126
  - pdb\_archive\_path** configuration parameter 136
  - pdb\_archive\_remove** configuration parameter 137, 145
  - pdb\_auto\_create\_repdefs** configuration parameter 138
  - pdb\_auto\_run\_scripts** configuration parameter 141
  - pdb\_automark\_tables** configuration parameter 140
  - pdb\_capabilities** command 7, 140
  - pdb\_convert\_datetime** configuration parameter 142–143
  - pdb\_date** command 7–8
  - pdb\_dflt\_column\_repl** configuration parameter 143–144
  - pdb\_dflt\_object\_repl** configuration parameter 144–145
  - pdb\_execute\_sql** command 8–9
  - pdb\_gen\_id** command 9–10
  - pdb\_get\_columns** command 10–12
  - pdb\_get\_databases** command 12
  - pdb\_get\_primary\_keys** command 12–13
  - pdb\_get\_procedure\_parms** command 14, 15
  - pdb\_get\_procedures** command 15–17
  - pdb\_get\_sql\_database** command 17
  - pdb\_get\_tables** command 18–19
  - pdb\_ownerfilter** configuration parameter 19
  - pdb\_set\_sql\_database** command 21–22
  - pdb\_setrepcol** command 22–27
  - pdb\_setrepddl** command 27
  - pdb\_setrepproc** command 28–38
  - pdb\_setrepseq** command 39
  - pdb\_setreptable** command 41–52
  - pdb\_skip\_op** command 52
  - pdb\_support\_large\_identifiers** configuration parameter 145
  - pdb\_truncate\_xlog** command 55, 56
  - pdb\_version** command 56
  - pdb\_xlog** command 56–61
  - pdb\_xlog\_device** configuration parameter 146–147
  - pdb\_xlog\_prefix** configuration parameter 59, 60, 147
  - pdb\_xlog\_prefix\_chars** configuration parameter 147
  - pds\_connection\_type** configuration parameter 148, 149
  - pds\_dac\_port\_number** configuration parameter 150
  - pds\_database\_name** configuration parameter 150
  - pds\_datasource\_name** configuration parameter 151
  - pds\_host\_name** configuration parameter 151
  - pds\_integrated\_security** configuration parameter 151
  - pds\_password** configuration parameter 152
  - pds\_port\_number** configuration parameter 152–153
  - pds\_retry\_count** configuration parameter 153
  - pds\_retry\_timeout** configuration parameter 153
  - pds\_server\_name** configuration parameter 153–154
  - pds\_tns\_connection** configuration parameter 154

**pds\_tns\_filename** configuration parameter 154  
**pds\_username** configuration parameter 155  
 performance statistics 80, 86  
   resetting 86  
 port numbers  
   primary data server 152–153  
   Replication Agent 117  
   Replication Server 164  
   RSSD 168  
 prefix, transaction log 59, 60  
 primary database  
   server port number 152  
 primary databases  
   articles in RASD 67, 68  
   character set 162  
   column names returned 10–12  
   communications drivers 91–92  
   connection from Replication Agent 102–104, 148,  
     155, ??–155  
   database connection in Replication Server 30, 36, 51  
   database connections to Replication Server 42  
   database name 12, 150  
   device name 146–147  
   gateway 56  
   generation ID 9–10  
   host machine name 151  
   log devices 65, 69–71, 89–91, 122  
   object names returned 10–12  
   path to location 65  
   primary keys 12–13  
   Replication Agent user login 155  
   Replication Server database connection 77–78  
   Replication Server source definition 165  
   server date and time 7–8  
   server name 153–154  
   server port number 153  
   server version 56  
   SQL commands 8–9, 17, 21–22  
   stored procedures 14, 17  
   testing connections 102–104  
   updating log devices 89–91, 122  
   user logins in RASD 74–75, 88–89  
   version 91–92  
 primary key columns 12–13  
 primary tables  
   articles in RASD 87

character case of name 41–42  
 disabling replication 41, 52  
 enabling replication 41, 52, 144–145  
 forcing unmarking 43, 48, 50  
 getting list from database 18–19  
 LOB columns 22–27  
 marking 25, 41–52  
 marking status 49  
 object owner 41–42, 43  
 pending operations in transaction log 48  
 primary keys 12–13  
 table name 18–19, 41, 47–48  
 unmarking 41–52

## Q

queues  
   Log Reader 136  
   Log Transfer Interface 61–62, 123, 129, 131–132  
   LTM Locator 73, 75–77  
   origin queue ID 9–10  
   **quiesce** processing 61–62  
   **suspend** processing 101  
**quiesce** command 61–62  
 quiescing Replication Agent 61–62

## R

**ra\_config** command 62–64, 109, 110  
**ra\_date** command 64  
**ra\_devicepath** command 65  
**ra\_dump** command 65–66  
**ra\_help** command 66–67  
**ra\_helparticle** command 67–68  
**ra\_helppdb** command 69  
**ra\_helpdevice** command 69  
**ra\_helpfield** command 71–73  
**ra\_helplocator** 73  
**ra\_helpuser** command 74–75  
**ra\_locator** command 75  
**ra\_maint\_id** command 77–78  
**ra\_marker** command 78, 79  
**ra\_marker** system function 78–79  
**ra\_migrate** command 79

- ra\_migrate** system function 79
- ra\_retry\_count** configuration parameter 155–156
- ra\_retry\_timeout** configuration parameter 156
- ra\_set\_login** command 80, 109, 110
- ra\_statistics** command 80, 86
- ra\_status** command 86, 87
- ra\_truncatearticles** command 87, 88
- ra\_truncateusers** command 88
- ra\_updatedevices** command 89, 122
- ra\_version** command 91
- ra\_version\_all** command 91–92
- RASD**
  - articles 67–68, 87, 88
  - backing up database 93
  - database backup files 156–157
  - database file 157–158
  - fields 71–73
  - log devices, primary database 65
  - mirror log devices, primary database 69–71
  - mirrored RASD log 158, 160–161
  - primary database 69
  - primary database objects 67–68, 87, 88
  - primary database users 75, 88–89
  - rasd\_backup\_dir** parameter 156–157
  - rasd\_database** parameter 157–158
  - rasd\_mirror\_tran\_log** parameter 158
  - rasd\_trace\_log\_dir** parameter 158–159
  - rasd\_tran\_log** parameter 159–160
  - rasd\_tran\_log\_mirror** parameter 160–161
  - restoring from backup 93, 94
  - transaction log file 159–160
  - truncating 89
  - updating log devices 89–91
  - updating mirror log devices 122
- rasd\_backup** command 92–93
- rasd\_backup\_dir** configuration parameter 156–157
- rasd\_database** configuration parameter 157–158
- rasd\_mirror\_tran\_log** configuration parameter 158
- rasd\_restore** command 94
- rasd\_trace\_log\_dir** configuration parameter 158–159
- rasd\_tran\_log** configuration parameter 159–160
- rasd\_tran\_log\_mirror** configuration parameter 160–161
- replicate tables
  - name specified in replication definition 51
- Replicating* state 86–87, 94–95
- Replication Agent
  - Admin* state 64, 86–87, 101
  - administration port 117
  - administrator login 80, 135, 135
  - articles in RASD 67, 68
  - asm\_password 117
  - asm\_tns\_connection 118
  - asm\_tns\_filename 118
  - asm\_tns\_username 119
  - backing up RASD 93
  - commands 1
  - configuration file 109, 110
  - configuration parameters 109
  - creating transaction log 59
  - database generation ID 9–10
  - date and time returned 64
  - fields in articles 71–73
  - help commands 66–67
  - immediate shutdown 100–101
  - Log Reader component 61, 169
  - Log Transfer Interface component 62, 120
  - LTL batch size 129–130, 131–132
  - LTL structured tokens 171
  - LTL trace log 105
  - LTM Locator 73, 75–77, 131, 172
  - Maintenance User 77–78
  - origin queue ID 75–77
  - pds\_tns\_connection 154
  - pds\_tns\_filename 154
  - performance statistics 80, 86
  - primary database user login 152, 155
  - quiescing an instance 61–62
  - RASD 94, 156
  - removing transaction log 59–61
  - Replicating* state 62, 86–87, 94–95
  - Replication Server user login 163, 166
  - restoring RASD 93, 94
  - rs\_create\_repdef 95
  - rs\_drop\_repdef 97
  - RSSD connection 166, 169
  - RSSD user login 168, 169
  - scripts directory 59, 60
  - shutting down an instance 100–101
  - statistics, performance 80, 86
  - status 86–87

- system log file 6–7, 104–107, 125
  - testing connections 102–104, 121
  - transaction log prefix 59, 60, 147, 148
  - troubleshooting 104–107, 126, 170, 171
  - updating log device repository 89–91, 122
  - using RSSD 173–174
  - version 91
  - Replication Agent commands 62
  - Replication Agent System Database
    - See* RASD
  - replication definitions
    - character case of object names 29, 41–42, 132–133
    - function (stored procedure) 30, 36
    - table 42, 51
    - used by Replication Agent 173–174
  - Replication Server
    - batch mode 129
    - character set 161–162
    - connection from Replication Agent 102–104, 121, 161, 166
    - database connection 30, 36, 42, 51, 77–78
    - database generation ID 9–10
    - function replication definition 36
    - host machine name 162
    - LTL batch size 131–132
    - LTL errors 170, 171
    - LTM Locator 75–77, 131, 172
    - Maintenance User 77–78
    - network packet size 163
    - port number 164
    - ra\_marker** system function 78–79
    - ra\_migrate** system function 79
    - Replication Agent user login 163, 166
    - replication definitions 30, 36, 42, 51
    - rs\_dumpdb** marker 65–66
    - rs\_dumptran** marker 65–66
    - source database 165
    - table replication definition 51
    - testing connections 102–104
    - version and LTL batch size 131–132
  - Replication Server System Database
    - See* RSSD
  - repository
    - primary database log devices 65, 69–71, 89–91, 122
    - system data 94, 156
  - restoring RASD from backup 94
  - resume** command 94–95
  - Returns 19
  - rs\_charset** configuration parameter 161–162
  - rs\_host\_name** configuration parameter 162
  - rs\_packet\_size** configuration parameter 163
  - rs\_password** configuration parameter 163
  - rs\_port\_number** configuration parameter 164
  - rs\_retry\_count** configuration parameter 164
  - rs\_retry\_timeout** configuration parameter 164–165
  - rs\_source\_db** configuration parameter 165
  - rs\_source\_ds** configuration parameter 165
  - rs\_ticket** command 98
  - rs\_username** configuration parameter 166
  - RSSD
    - character set 166–167
    - connection from Replication Agent 166, 169
    - database name 167
    - host machine name 167
    - port number 168
    - Replication Agent user login 168, 169
    - replication definitions 173–174
    - rssd\_charset** configuration parameter 166–167
    - rssd\_database\_name** configuration parameter 167
    - rssd\_host\_name** configuration parameter 167
    - rssd\_password** configuration parameter 168
    - rssd\_port\_number** configuration parameter 168
    - rssd\_username** configuration parameter 169
- ## S
- scan\_sleep\_increment** configuration parameter 169–170
  - scan\_sleep\_max** configuration parameter 170
  - scripts
    - automatic running 141
    - directory 59, 60
    - transaction log creation 59
  - setting
    - configuration parameters 62
    - primary database log device path 65
  - shutdown** command 100–101
  - shutting down Replication Agent 100–101
  - size of log files 127
  - skip\_ltl\_errors** configuration parameter 170, 171
  - socket port number

- primary data server 152–153
- Replication Agent 117, 118, 119, 154
- Replication Server 164
- RSSD 168
- SQL command execution 8–9, 17, 21–22
- starting
  - replication 94–95
- states of Replication Agent 86–87
  - Admin* state 64, 86–87, 101
  - changing 61–62, 94–95, 101
  - Replicating* state 64, 86–87, 94–95
- statistics, performance 80, 86
  - resetting 86
- status of Replication Agent 86–87
- stopping Replication Agent 100–101
- stored procedures
  - articles in RASD 87
  - character case of name 29
  - disabling replication 35
  - enabling replication 28–38
  - forcing unmarking 30, 35
  - marking 28–38
  - name 15–17
  - object owner 29
  - parameters returned 14, 15
  - pending operations in transaction log 34
  - replicate name 36
  - unmarking 28–38
- structured\_tokens** configuration parameter 171
- suspend** command 101
- synonyms of database objects 25, 35, 47, 49
- syntax, LTL compression 120
- system data repository
  - backing up 93
  - restoring 94
- system database
  - See* RASD; RSSD
- system log file 6–7, 104–107

## T

- table replication definitions 42, 51
- tables, primary database
  - See* primary tables
- test\_connection** command 102–104

- testing connections 102–104, 121
- trace** command 104–107
- trace log file
  - See also* system log file
  - LTL output 105
  - RASD 158–159
- transaction logs
  - base objects 47
  - creating 59
  - creation script 59
  - database generation ID 9–10
  - DDL operations 87, 89
  - LTM Locator 75–77, 94
  - origin time in LTL 133–134
  - pending operations 24, 30, 43
  - prefix 59, 60, 146
  - primary database devices 65, 69–71, 89–91, 122
  - ra\_marker** object 78–79
  - removing 59–61
  - Replication Agent 56–61
  - Replication Agent objects 25, 27
  - rs\_dumpdb** marker 65–66
  - rs\_dumptran** marker 65–66
  - scanning 169, 170
  - shadow tables 35, 49
  - truncating 55, 56, 131, 171–172, 173
- troubleshooting
  - dummy connection 121
  - LTL errors 105–107, 170, 171
  - trace flags 104–107
  - verbose logging 126
- truncating RASD 87, 88, 89
- truncation\_interval** configuration parameter 171
- truncation\_type** configuration parameter 172–173

## U

- unmarking a primary table 41–52
  - all tables 50
  - force** option 43, 48, 50
  - pending operations in transaction log 48
  - running scripts automatically 141
- unmarking a stored procedure 28–38
  - all stored procedures 35
  - force** option 30, 35

## Index

- pending operations in transaction log 34
- running scripts automatically 141
- updating
  - log devices in RASD 89–91, 122
  - LTM Locator 131
- use\_rssd** configuration parameter 173–174
- user IDs
  - Maintenance User 77–78
  - primary database 152, 155
  - primary database users in RASD 74–75, 88, 89
  - Replication Agent administrator 80, 135, 135
  - Replication Server 163, 166
  - RSSD user logins 168, 169

## V

- values
  - configuration parameters 62
  - LTM Locator 73, 75–77
- verbose log output 126
- version
  - articles in RASD 67–68, 71–73
  - primary data server 56
  - primary database users in RASD 74–75
  - Replication Agent 91
  - Replication Agent commands 91
  - Replication Server 131–132
- views of database objects 25, 35, 47, 49

## W

- wait interval, connection retry
  - primary database 153
- wrapping log files 127