



Release Bulletin

Replication Agent™ 15.6

Linux, Microsoft Windows, and UNIX

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Contents

Product Summary	1
Product Compatibility	1
Installation and Upgrade	2
Special Installation Instructions	3
Special Upgrade and Downgrade Instructions	4
Downgrading Replication Agent 15.6 Installed on Top of Replication Agent 15.5	4
Known Issues	4
Known Issues for the Replication Agent Installer	5
Known Issues for All Database Targets	10
Known Issues for Oracle	13
Known Issues for Microsoft SQL Server	17
Known Issues for IBM DB2 UDB	20
Documentation Updates and Clarifications	20
Replication Agent Package Does Not Include SyBooks CD	21
Examining Replication Agent if a Failure Occurs	21
Obtain JVM Thread Dump	21
Marking Procedures with Predefined PL/SQL Numeric Datatypes	22
Required Replication Agent Permissions	22
Correction to pdb_xlog Example	22
lr_max_op_queue_size Support Clarification	22
Correction to the Documented Replication Agent Installation Directory	23
Granularity of the LTL Origin Commit Time for Oracle Operations	23
Oracle Privileges for DDL Replication	23
UNC Paths for Replication Agent for Oracle on Windows	25

pdb_xlog Syntax to Move the Transaction Log Truncation Point	25
Granting create object Permission to the rs_username User	25
Replication Agent for Oracle Marker Objects	26
Correction to Linux Block Device Documentation	27
Obtaining Help and Additional Information	27
Technical Support	27
Downloading Sybase EBFs and Maintenance Reports	28
Sybase Product and Component Certifications	28
Creating a MySybase Profile	28
Accessibility Features	29

Product Summary

This release bulletin provides late-breaking information about Replication Agent™ version 15.6.

Replication Agent extends the capabilities of Sybase® Replication Server® by allowing non-Sybase database servers to act as primary data servers in a replication system based on Sybase replication technology.

For a list of platforms and operating systems on which Replication Agent is supported, see the *Replication Agent Installation Guide*.

Product Compatibility

Learn about Replication Agent compatibility with database servers, drivers, and products.

Table 1. Compatible Databases

Database	Versions
Oracle Server	10g (10.1, 10.2), 11g (11.1, 11.2)
Microsoft SQL Server	2005 Service Pack 2 2008 – support for Microsoft SQL Server 2008 is limited to the same features that are supported for Microsoft SQL Server 2005. Replication Agent does not support the features and datatypes introduced in Microsoft SQL Server 2008.
IBM DB2 Universal Database	Enterprise Edition 9.1, 9.5

Replication Agent requires a JDBC™ 3.0-compliant driver for the primary data server.

Table 2. Compatible Drivers

Driver	Versions
Oracle JDBC driver	<ul style="list-style-type: none"> • 10.2 for JDK 1.4 and 1.5 • 11.1 for JDK 1.5 • 11.2 for JDK 1.6 <p>Note: You can use any of these drivers with Oracle version 10.1, 10.2, or 11.1. However, for Oracle 11.2, you must use Oracle JDBC 11.2 driver.</p>
Microsoft SQL Server JDBC driver	1.2
DB2 Universal Database Administration Client	9.1 and 9.5 (64-bit on all UNIX platforms; 32-bit on Linux and Windows platforms)

Table 3. Compatible Product

Sybase Product	Version
Replication Server	15.0.x, 15.1, 15.2, 15.5, 15.6
ExpressConnect for Oracle	15.5 ESD #1
ECDA Option for ODBC	15.0 ESD #3 and later
Sybase Software Asset Management (SySAM)	2

Installation and Upgrade

Get last-minute information about installation and upgrading that was omitted from or incorrect in your installation guide, or that needs special emphasis.

For detailed information about installing and upgrading, see the *Replication Agent Installation Guide*.

Special Installation Instructions

Learn about additional installation requirements for this version of Replication Agent.

Visual C++ 2005 runtime components

When installing on Microsoft Windows, the Replication Agent 15.6 installation program requires components of the Microsoft Visual C++ 2005 libraries. If these libraries are not installed, the Sybase installer stops responding without issuing a warning or error message.

To check if the Microsoft Visual C++ 2005 Redistributable package is already installed, go to Start | Control Panel | Add or Remove Programs, and look for Microsoft Visual C++ 2005 Redistributable.

You can download Visual C++ 2005 from the *Microsoft Visual C++ 2005 SP1 Redistributable Package (x86) page*. Run `vc_redist_x86.exe` to install the Visual C++ runtime components on Microsoft Windows 32-bit or 64-bit machines.

SySAM server's internet protocol configuration

SySAM supports Internet Protocol versions 6 and 4 (IPv6 and IPv4, respectively), however, Replication Agent supports only IPv4. The SySAM server that is installed by the Replication Agent installation program is configured to use IPv4. Sybase recommends that you maintain this configuration. However, if you must use IPv6, license Replication Agent using an unserved license.

SySAM Subcapacity Licensing

If you are using subcapacity licensing, perform one of the following:

- Before starting your installer, set the `SYBASE_SAM_CAPACITY` environment variable using the **sysamcap** utility.
Follow the instructions provided in the *SySAM Users Guide > Configuring SySAM Subcapacity*. However, start your installer instead of starting the sub-capacity-enabled Sybase product. The installer includes the **sysamcap** utility located in `sysam_utilities/bin`.
- Select the **Continue installation without a license key** in the Sybase Software Asset Management License pane during installation. After installation, copy your license key to `installed_directory/SYSAM-2_0/licenses` directory where `installed_directory` is the location in which you have installed your components into.

Special Upgrade and Downgrade Instructions

Learn about special upgrade and downgrade instructions for Replication Agent.

You can upgrade and downgrade Replication Agent by following the instructions in Appendix A of the *Replication Agent Primary Database Guide*.

Downgrading Replication Agent 15.6 Installed on Top of Replication Agent 15.5

By default, Replication Agent 15.6 installer uses the RAX-15_5 directory, and overwrites the Replication Agent 15.5 installation. Follow these steps to correctly downgrade a typical Replication Agent 15.6 installation.

1. Shut down Replication Agent 15.6.
2. Install Replication Agent 15.5 in the default installation directory.
3. Prepare for downgrade:

```
ra_downgrade_prepare installation_path
```

4. Complete the downgrade:

```
ra_downgrade_accept timestamp.export
```

where `timestamp.export` is the file to which `ra_downgrade_prepare` extracted RASD contents.

5. Start Replication Agent 15.5, and resume replication.

Known Issues

Learn about known issues and workarounds. Find issues by Change Request (CR) number.

Note: You can search the Sybase Web site for solved cases. Choose Support > Solved Cases or go to <http://search.sybase.com/search/simple.do?mode=sc>. You need a MySybase account to view solved cases in the archive.

Known Issues for the Replication Agent Installer

Learn about known issues and workarounds for the Replication Agent installer.

Table 4. Replication Agent Installer Issues

CR#	Description
641256	<p>The Replication Agent installation fails on Sun platforms when the Logical Domains Manager (LDoms) does not exist.</p> <p>During installation, you may see several Failed to connect to logical domain manager: Connection refused messages before an exception occurs.</p> <p>Workaround: Perform one of the following:</p> <ul style="list-style-type: none"> • If <code>/opt/SUNWldm/bin/ldm ls -l -p</code> does not work, remove LDM. • In the SySAM properties file, set <code>SYBASE_SAM_CPUINFO</code> to <code>OSCMDFORK</code> before running the installer to change how LDoms is called. Remove <code>SYBASE_SAM_CPUINFO</code> after installation.
631310	<p>The SySAM lmgrd daemon is not installed unless you provide a served license during installation.</p> <p>Workaround:</p> <p>To install a SySAM server during the installation of Replication Agent 15.6, specify a served license.</p> <p>To install a SySAM server without running the Replication Agent 15.6 installer, invoke the SySAM server installer directly from the <code>archives</code> directory of the Replication Agent 15.6 installation media:</p> <ol style="list-style-type: none"> 1. On Windows: <code>archives\sysam_server\setup.exe LAX_VM %JAVA_HOME%\bin\java.exe</code> 2. On UNIX: <code>archives/sysam_server/setup.bin LAX_VM \$JAVA_HOME/bin/java</code> <p>Note: If you do not have access to a Java installation, run the Replication Agent 15.6 installer and a suitable JRE will be installed. You can reference this JRE through the <code>SYBASE_JRE6</code> environment variable.</p>

CR#	Description
625227	<p>SPDC-generated served partition-level licenses may not work.</p> <p>When you use a served partition-level license generated from the Sybase Product Download Center to start a SySAM server, you see a message that you are using an invalid license key, similar to:</p> <pre>(SYBASE) Invalid license key (inconsistent authentication code) ... (lmgrd) SYBASE system started on hpiabou (SYBASE) No features to serve, exiting (SYBASE) EXITING DUE TO SIGNAL 49 Exit reason 4 (lmgrd) SYBASE exited with status 49 (No features to serve) (lmgrd) SYBASE daemon found no features. Please correct (lmgrd) license file and re-start daemons. (lmgrd) (lmgrd) This may be due to the fact that you are using (lmgrd) a different license file from the one you expect. (lmgrd) Check to make sure that: (lmgrd) /remote/cat_fc/nli/iq152.hpia/SYSAM-2_0/licenses/ 18965_hpiabou_ (lmgrd) is the license file you want to use.</pre> <p>Workaround: Use the old host IDs for the license running on the license server.</p>
622349	<p>Licenses directory is not always created.</p> <p>When you install Replication Agent using an unserved license, <code>licenses</code>, the default license directory, is not created. Because Replication Agent does not have access to the license file, it uses the grace license, which expires after 30 days.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Manually create the <code>licenses</code> directory in <code>\$SYBASE/SYSAM-2_0</code>. 2. Copy the unserved license to the <code>licenses</code> directory. 3. Restart Replication Agent.
618407	<p>Issues when installing using a served license.</p> <p>When you install Replication Agent using a served license, SySAM Utilities is installed twice, and two copies of the Java Runtime Environment (JRE) are installed. These issues do not impact the Replication Agent and can be ignored.</p> <p>Workaround: None.</p>
616338	<p>Issues when reinstalling Replication Agent on IBM AIX.</p> <p>Reinstalling Replication Agent on IBM AIX after you create, start, and stop a Replication Agent instance results in an error from the installation program. This error does not affect subsequent Replication Agent instances and can be ignored.</p> <p>Workaround: None.</p>

CR#	Description
615072	<p>SySAM Server and SySAM Utilities installation information not displayed.</p> <p>When you install Replication Agent with a served license, the SySAM Utilities and SySAM Server Install screen should display the installation progress of the SySAM components. However, when you install in console or GUI mode on a Windows XP or Windows 2003 machine, the SySAM Utilities and SySAM Server Install screen does not display the expected information.</p> <p>Workaround: Wait for the Sybase Software Asset Management screen to appear and continue with your installation. The installation program has installed the SySAM components even if the progress bar had not been shown.</p>
614944	<p>Replication Agent is installed with a served license even if a SySAM server is already running.</p> <p>When installing in console mode on Windows Vista, the installation program allows you to install Replication Agent with a served license even if a SySAM server is already running. The correct behavior is for the installation program to stop the installation process with this error:</p> <p>Error: The license key(s) you entered requires a Sybase Software Asset Management (SySAM) license server. The installer has detected a SySAM license server running on this host. Only one SySAM server can be setup on a system. You need to deploy the served-license key(s) to the existing server.</p> <p>Workaround: When installing Replication Agent in console mode on Windows Vista, change the compatibility mode of the console installer to Windows XP:</p> <ol style="list-style-type: none"> 1. In Windows Explorer, right-click <code>setupConsole.exe</code>. 2. Select Properties. 3. On the Compatibility tab, select the Windows XP compatibility mode. 4. Launch the installation program using: <pre>setupConsole.exe -i console</pre>
614742	<p>Available License Check window does not display correct database name.</p> <p>When you enter an invalid license on the Sybase Software Asset Management License Panel and click Next, you will see this message in the Available License Check window: <code>Replication Agent for database_type, license not found</code></p> <p>If you click Previous, change the database type, and click Next, the error message displays again if the license is still invalid. However, the message does not reflect the new database type.</p> <p>Workaround: Ignore the message and ensure that you enter a valid license.</p>

CR#	Description
609606	<p>An extra console opens when installing Replication Agent on Windows Vista.</p> <p>Installing Replication Agent in console mode on Windows Vista opens an extra console. Sybase recommends that you do not use this extra console.</p> <p>Workaround: To suppress the extra console, deactivate User Account Control (UAC) before running the installation program:</p> <ol style="list-style-type: none"> 1. Go to Control Panel User Accounts Turn User Account Control On or Off. 2. Uncheck "Use User Account Control (UAC) to help protect your computer." 3. Reboot your machine
606761	<p>Cannot view text fields properly when using Hummingbird Exceed from a Windows workstation.</p> <p>If you use Hummingbird Exceed from a Windows workstation to install Replication Agent on a UNIX host, you might not be able to view all of the text fields on the Sybase installer screens.</p> <p>Workaround: Use a native X-Windows session to run the Sybase installation program, or run the Sybase installation program in console or silent mode. See the <i>Replication Agent Installation Guide</i>.</p>
595614	<p>Installation program cannot create installation directory on Microsoft Windows 2008.</p> <p>On Microsoft Windows 2008, the installation program can create the Replication Agent installation directory only when you are logged in as an administrator, even if your role has permission to create directories.</p> <p>Workaround: Create the installation directory before running the installation program.</p>
595582	<p>Installer fails to launch when path to <code>setup.bin</code> contains <code>“..”</code>.</p> <p>On UNIX and Linux platforms, the installer fails to launch if you specify a path to <code>setup.bin</code> that contains <code>“..”</code>.</p> <p>Workaround: Ensure that the path to <code>setup.bin</code> does not contain <code>“..”</code>.</p>
595573	<p>Uninstallation process stops responding.</p> <p>The uninstallation program stops responding when you select Delete from the Delete User Files screen and then click Previous from the Uninstall Complete screen. Delete User Files and Uninstall Complete are the last two screens shown in the uninstallation program.</p> <p>Workaround: Do not return to the Delete User Files screen after you have selected Delete.</p>

CR#	Description
594586	<p>Inaccurate disk space information.</p> <p>The installation program displays inaccurate disk space requirement.</p> <p>Workaround:</p> <p>Refer to the <i>Replication Agent Installation Guide</i> for the correct disk space requirement for your platform.</p>
593410	<p>Installation program cannot uncompress the Replication Agent archive.</p> <p>On UNIX and Linux platforms, if you specify the <code>tar</code> utility from the GNU collection before the operating system-supplied <code>tar</code> utility in the <code>\$PATH</code> environment variable, the GNU <code>tar</code> utility is invoked when you issue a <code>tar</code> command, and the installer fails with this error:</p> <pre data-bbox="360 600 1180 725">The included VM could not be unarchived (TAR). Please try to download the installer again and make sure that you download using 'binary' mode. Please do not attempt to install this currently downloaded copy.</pre> <p>Workaround: In the <code>\$PATH</code> environment variable, specify the operating system-supplied <code>tar</code> utility before the GNU <code>tar</code> utility.</p>
579988	<p><code>./setup.bin: !: not found</code> message appears when installing Replication Agent on Sun Solaris.</p> <p>You see this error message when you install Replication Agent on Sun Solaris:</p> <pre data-bbox="360 944 1180 1095">Preparing to install... ./setup.bin: !: not found Extracting the installation resources from the installer archive... Configuring the installer for this system's environ- ment...</pre> <p>Workaround: Ignore the message and continue.</p>

Known Issues for All Database Targets

Learn about known issues and workarounds for Replication Agent that are not specific to a particular environment or data server type.

Table 5. Issues for All Database Targets

CR#	Description
650063	<p>Creating an instance of Replication Agent fails because database repository creation cannot be completed.</p> <p>Replication Agent and Replication Server is shipped with SQL Anywhere, which manages the embedded database in Replication Agent System Database (RASD) and Embedded Replication Server System Database (ERSSD). To successfully create an instance of the Replication Agent or Replication Server, the RASD or ERSSD, respectively, must first be created.</p> <p>Workaround: Contact Sybase Technical Support.</p>
628568	<p>Replication Agent initialization may fail when tables are automatically marked for replication.</p> <p>The pdb_xlog init command may fail when pdb_automark_tables is set to true.</p> <p>Workaround: Set the pdb_automark_tables to false before you issue pdb_xlog init. You can set pdb_automark_tables to true after Replication Agent has been initialized.</p>
624714	<p>Limitation of running Replication Agent as a Windows service on a Microsoft Windows 64-bit platform.</p> <p>Currently, you cannot use the Microsoft Windows Services utility to start, stop, remove, or install a Microsoft Windows service instance of Replication Agent.</p> <p>Workaround: Use agt_service.bat to start, stop, remove, or install a Replication Agent instance.</p>

CR#	Description
611175	<p>Java Virtual Machine stops responding due to thread stack overflow.</p> <p>When Replication Agent for Oracle or UDB, running on an HP-UX 64-bit machine, processes high volume of data with an insufficient thread stack size memory setting, the Java Virtual Machine (JVM) may crash due to a thread stack overflow:</p> <p>Pid xxxx was killed due to failure in writing to user register stack - possible stack overflow.</p> <p>Workaround: Adjust the HP-UX PTHREAD_DEFAULT_STACK_SIZE environment variable to increase the default thread stack size to accommodate Replication Agent. To do this for all instances of Replication Agent, add the following two lines to the \$SYBASE/RAX-15_5/bin/ra.sh file and set a proper stack size before running Replication Agent:</p> <pre> PTHREAD_DEFAULT_STACK_SIZE=2048000 export PTHREAD_DEFAULT_STACK_SIZE </pre>

CR#	Description
583437	<p>Incorrect LTL generated.</p> <p>Incorrect LTL may be generated in a partition schema for an update transaction that affects the primary-key column of a table referenced by the cascading foreign-key column of another table. For example, two tables are created, one with a primary-key column referenced by the foreign-key column of the other table. This causes updates to cascade to the primary-key column of the first table:</p> <pre data-bbox="360 418 1157 493">create table table1 (id int constraint PK_1 PRIMARY KEY CLUSTERED WITH FILLFACTOR=90 on myRangePS1(id), value1 varchar(8) null);</pre> <pre data-bbox="360 517 1157 591">create table table2 (id int constraint FK_1 FOREIGN KEY REFERENCES table1(id) ON UPDATE CASCADE, value1 varchar(8) null);</pre> <p>Data is inserted into both tables:</p> <pre data-bbox="360 652 865 704">insert into table1 values(3,'aaa'); insert into table2 values(3,'aaa');</pre> <p>The primary-key column of the first table is subsequently updated:</p> <pre data-bbox="360 765 696 791">update table1 set id =4</pre> <p>The resulting update transaction results in the following logged commands:</p> <pre data-bbox="360 857 810 1060">LOP_BEGIN_XACT NULL LOP_BEGIN_UPDATE NULL LOP_DELETE_ROWS dbo.table1.PK_1 LOP_INSERT_ROWS dbo.table1.PK_1 LOP_DELETE_ROWS dbo.table2 LOP_INSERT_ROWS dbo.table2 LOP_END_UPDATE NULL LOP_COMMIT_XACT NULL</pre> <p>The LTL generated for this transaction does not identify that the delete operations are grouped with insert operations as part of an overall update operation. Consequently, Replication Server is suspended.</p> <p>Workaround: Drop the foreign key constraint in your replicate database. This will not result in data loss because both the original delete and the cascade delete commands are sent to the replicate database.</p>

CR#	Description
	<p>Changes to the table replication definition in Replication Server 15.2 or earlier are not recognized by Replication Agent.</p> <p>Replication Agent caches a copy of the table replication definition that it reads from Replication Server. Because Replication Server 15.2 or earlier does not automatically update Replication Agent of changes to the table replication definition, Replication Agent does not know when changes have been made to the table replication definition.</p> <p>Workaround: Before changing the table replication definition in Replication Server 15.2 or earlier, quiesce Replication Agent and wait for it to reach ADMIN state. Replication Agent will use the new table replication definition when you resume replication.</p>
	<p>Error while loading shared libraries when running on Red Hat Linux 5.0.</p> <p>You may be unable to start Replication Agent due to this error message:</p> <pre>Error while loading shared libraries.</pre> <p>Workaround: Check the system configuration and change the firewall configuration from enforcing to permissive. You must have root or sudo permission to make this change.</p>

Known Issues for Oracle

Learn about known issues and workarounds for Replication Agent that are specific to Oracle.

Table 6. Replication Agent for Oracle Issues

CR#	Description
650347	<p>Setting <code>ra_direct_read</code> before Replication Agent is initialized results in an error.</p> <p>Workaround: Initialize Replication Agent before you set <code>ra_direct_read</code>. If <code>ra_direct_read</code> cannot be set, check the Replication Agent log for messages. To do this, the Replication Agent administrator that started the Replication Agent instance process must have permission to read the underlying block devices, turn all traces on, and run <code>ra_updatedevices</code>.</p>
645980	<p>Exadata Hybrid Columnar Compression (EHCC) not supported.</p> <p>Replication Agent for Oracle does not support the replication of data compressed with EHCC because the compression algorithm may result in unexpected logging behavior. Do not use the compress for query clause or the compress for archive clause in an Oracle table definition because these clauses are intended only for EHCC data.</p> <p>Workaround: None.</p>

CR#	Description
645883	<p>Oracle table compression limitation.</p> <p>Replication Agent for Oracle 15.6 does not support table compression for Oracle 10g. Replication Agent for Oracle 15.6 does not support direct-path inserts—appending data directly to a file, bypassing buffer cache—to Oracle 11g tables that use table compression.</p> <p>In Oracle 11g, if the table has been partitioned and the compress option has been set to compress, compress for all operations, or OLTP, while the data in the table is compressed, updating the table can generate multiple chained operations—operations which act upon the results of a previous operation. Processing these chained operations can cause Replication Agent errors such as failure in parsing Oracle <code>date</code> and <code>timestamp</code> values, or incorrectly duplicating values.</p> <p>Workaround: None.</p>
641011	<p>DDL statements introduced in Oracle 11g cannot be filtered.</p> <p><code>pdb_setrepddl</code> does not filter these DDL statements introduced in Oracle 11g:</p> <ul style="list-style-type: none"> • Oracle 11.1 – create flashback archive, alter flashback archive, and drop flashback archive. • Oracle 11.2 – alter database link, create edition, and drop edition. <p>Workaround: None.</p>
630089	<p>Oracle resynchronization limitation.</p> <p>Replication Agent for Oracle does not support the resynchronization scenario described in section “Resynchronizing the active and standby databases in a warm standby application,” in Chapter 13, “Resynchronizing Oracle Replicate Databases,” of the <i>Replication Server Heterogeneous Replication Guide</i>.</p> <p>Workaround: None.</p>
624026	<p>Supplemental logging not enabled error.</p> <p>The initialization of the Replication Agent for Oracle can fail with a message that supplemental logging is not enabled even if the supplemental logging requirements specified in the <i>Replication Agent Primary Database Guide</i> are met. This happens when the Replication Agent initialization has already failed because of a disabled supplemental logging configuration before the configuration was corrected. Replication Agent caches the primary database supplemental logging configuration on initial communication with the primary database after start-up, but does not refresh it after a configuration change.</p> <p>Workaround: Shut down and restart Replication Agent after you enable supplemental logging in the primary database.</p>

CR#	Description
620157	<p>Database resynchronization feature support.</p> <p>Replication Agent cannot use the Replication Server 15.5 database resynchronization feature.</p> <p>Workaround: To use the database resynchronization feature, install Replication Server 15.5 ESD #1 or later.</p>
619663	<p>Replication Agent reports an incorrect number of RMAN-deleted archive redo log files when RMAN utility locale is not English.</p> <p>Replication Agent searches for the word “Deleted” when counting the number of deleted archive redo log files that have been truncated by the Oracle Recovery Manager (RMAN) utility. For language modules other than English, the count fails because Replication Agent cannot find the word “Deleted.”</p> <p>Workaround: Specify the locale behavior of your Oracle software by setting the NLS_LANG Oracle environment parameter to a supported English character set such as <code>american_america.zhs16gbk</code>. For example:</p> <ul style="list-style-type: none"> • On Windows: <code>set nls_lang=american_america.zhs16gbk</code> • On UNIX: <code>setenv NLS_LANG american_america.zhs16gbk</code>
615023	<p>Replication definition is not created when table owner is not specified.</p> <p>When your primary database is Oracle and the recycle bin is enabled, <code>rs_create_repdef</code> cannot create a replication definition for marked tables unless you specify a table owner.</p> <p>Workaround: Specify a table owner in the <code>rs_create_repdef</code> syntax. For example:</p> <pre>rs_create_repdef qaxuser.qax_tab1</pre> <p>where <i>qaxuser</i> is the table owner.</p>
596320	<p>Owner information is not supported in function replication definition for Oracle.</p> <p>Replication Server does not support specifying owner information of stored procedures in the function replication definition for Oracle. As such, Replication Agent does not send that information to Replication Server. Because the owner information is not available, the replicated stored procedure fails to execute at the Oracle standby database.</p> <p>Workaround: For each stored procedure replicated from active to standby database, create a corresponding function string that specifies the owner information of the target stored procedure.</p> <p>To alter the function string class of the standby connection to a customized function string class, which is inherited from <code>rs_oracle_function_class</code>:</p> <pre>alter connection to dco2stb.ordb (standby connection) set function string class to my_oracle_function_class go</pre>

CR#	Description
585513	<p>Initialization failure when isolation level is set to serializable in an Oracle RAC environment.</p> <p>In an Oracle Real Application Clusters (RAC) environment, Replication Agent may fail during initialization when you set the isolation level to serializable. This failure is due to an internal Oracle error.</p> <p>Workaround: Install the Oracle Clusterware Release 2 (10.2.0.4) patch set for Oracle Database 10g Release 2 or upgrade to Oracle Database 11g Release 1.</p>
562889	<p>Replication Agent fails with an error during table redefinition.</p> <p>In Oracle 11g, during table redefinition, Replication Agent goes to ADMIN state with an IteratorException error. In Oracle 10g, after a table redefinition, all DML commands against the source table fail to replicate to the replicate site as Replication Agent sends an incorrect table name in LTL, which causes the DSI to go down.</p> <p>Workaround: None.</p>
405207	<p>create table DDL has limited support for UDD object types.</p> <p>Replication of a create table DDL command is not supported for tables with UDDs, when a UDD has a nested object type.</p> <p>Workaround: Reinitialize the Replication Agent.</p>
405206	<p>alter type DDL command has limited support.</p> <p>During replication of the alter type command, the type change does not propagate to the dependents of the type.</p> <p>Workaround: Reinitialize the Replication Agent.</p>
397826	<p>Replicating a sequential update to a primary key column fails.</p> <p>For example, this update will not be replicated correctly:</p> <pre>update test_table set pkey = pkey + 1</pre> <p>Workaround: Change the primary key column or add a unique index that is more broad.</p>
	<p>Disabling the recyclebin in Oracle 10.1.</p> <p>The Oracle “recyclebin” configuration property was not added until Oracle 10.2 and is available in Oracle 11g. To disable the recycle bin in Oracle 10.1, set the Oracle hidden property:</p> <pre>ALTER SYSTEM SET "_recyclebin"=FALSE SCOPE = BOTH;</pre>

Known Issues for Microsoft SQL Server

Learn about known issues and workarounds for Replication Agent that are specific to Microsoft SQL Server.

Table 7. Replication Agent for Microsoft SQL Server Issues

CR#	Description
570511	<p><i>varchar (max)</i>, <i>nvarchar (max)</i> and <i>varbinary(max)</i> can be replicated only to Microsoft SQL Server databases.</p> <p>Workaround: None.</p>
569586	<p>An error occurs when applying service patch.</p> <p>When you run the SQL Server 2005 service patch, the Replication Agent system tables <i>sys.sp_SybSetLogforLOBCol</i> and <i>sys.sp_SybSetLogforReplTable</i> are deleted from the resource database, triggering error 29537:</p> <p>MSP Error: 29537 SQL Server Setup has encountered the following problem: [Microsoft][SQL Native Client][SQL Server]Could not find stored procedure 'sys.sp_SybSetLogforLOBCol'.. To continue, correct the problem, and then run SQL Server Setup again.</p> <p>Workaround: Before you apply the service patch, disable the database triggers that Replication Agent created:</p> <ol style="list-style-type: none"> 1. Log in to the primary database. 2. Disable the automark trigger if it is enabled. For example: <pre>DISABLE TRIGGER ra_createtable_trig_ ON DATABASE</pre> <p>where ra_createtable_trig_ is the automark trigger created by Replication Agent.</p> 3. Disable the data definition language (DDL) trigger. For example: <pre>DISABLE TRIGGER ra_ddl_trig_ ON DATABASE</pre> <p>where ra_ddl_trig_ is the DDL trigger created by Replication Agent.</p>

CR#	Description
623810	<p>pdb_xlog init fails when Microsoft SQL Server 2005 is upgraded to the developer version.</p> <p>pdb_xlog init fails when a SQL Server instance is upgraded from Microsoft SQL Server 2005 standard version to the developer version. This is a limitation of Microsoft SQL Server—during SQL Server upgrading, the “Agent XPs” component is turned off, which prevents pdb_xlog init from succeeding.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Run these scripts using SQL Server Management Studio or SQLCMD to enable the SQL Server Agent extended stored procedures: <pre data-bbox="400 534 973 736"> sp_configure 'show advanced options', 1; GO RECONFIGURE; GO sp_configure 'Agent XPs', 1; GO RECONFIGURE GO </pre> 2. Run pdb_xlog init to reinitialize Replication Agent.
493242	<p>Microsoft SQL Server 2005 log error prevents LTL processing.</p> <p>The partial update of <i>varchar (max)</i> or <i>varbinary (max)</i> with off-row storage cannot be replicated correctly due to a Microsoft SQL Server 2005 logging error. The LTL does not process the partial update.</p> <p>Workaround: None.</p>

CR#	Description
490356	<p>Replication Agent instance fails to start after upgrading a version 15.0 on a UNIX platform to a Windows platform.</p> <p>When you upgrade a Replication Agent 15.0 instance to version 15.1 or later by migrating from a non-Microsoft Windows platform to a Microsoft Windows platform, the instance may encounter this error during start up:</p> <pre>Error setting logging directory for instance XXX because: <Log directory <YYY> does not exist>.</pre> <p>Workaround: After upgrading the Replication Agent instance, edit its configuration file to modify the value of the <code>log_directory</code> parameter to point to the correct path of the Replication Agent instance log directory. By default, the log directory resides under the Replication Agent instance directory.</p> <p>For example, change this line:</p> <pre>log_directory=/opt/Sybase/RAX-15_0/myra/log</pre> <p>to</p> <pre>log_directory=c:\\sybase\\RAX-15_5\\myra\\log</pre> <p>Note: On Microsoft Windows, include the double backslashes as shown in the example.</p>

Known Issues for IBM DB2 UDB

Learn about known issues and workarounds for Replication Agent that are specific to IBM DB2 Universal Database (UDB).

Table 8. Replication Agent for IBM DB2 UDB Issues

CR#	Description
	<p>Error occurs if the library path contains two colons.</p> <p>For HP, if SHLIB_PATH contains two colons (::) with no intervening directory, you see this error message when you resume Replication Agent:</p> <pre data-bbox="360 586 1180 612">java.lang.NoClassDefFoundError</pre> <p>Workaround: Add a line to the \$SYBASE/RAX-15_5/bin/ra.sh script to source your UDB instance's db2profile (which does not have the same problem as the db2cshrc). For example, if your UDB instance directory is "/home/db2inst1", edit your Replication Agent script to add /home/db2inst1/sqlllib/db2profile:</p> <pre data-bbox="360 800 1180 951">elif [\$os = HP-UX] then . /home/db2inst1/sqlllib/db2profile SRVR=-server SHLIB_PATH=\$ASA_LIB:\$RAX_DIR/lib/hpux:\$SHLIB_PATH export SHLIB_PATH</pre>

Documentation Updates and Clarifications

Read about updates, corrections, and clarifications to the documentation released with Replication Agent.

Replication Agent Package Does Not Include SyBooks CD

Replication Agent does not include the SyBooks™ CD. To learn more about your product, use the Sybase Getting Started CD and the Sybase Product Manuals Web site.

Examining Replication Agent if a Failure Occurs

Updates and clarifications for the Replication Agent Administration Guide.

When Replication Agent reaches deadlock and becomes unresponsive, you can use the JVM thread dump to troubleshoot the problem. This section will be added to the *Replication Agent Administration Guide* in the next Replication Agent release.

Obtain JVM Thread Dump

A thread dump contains information about active threads in the Replication Agent JVM and can therefore be useful in troubleshooting a Replication Agent deadlock or performance issue.

Obtaining a thread dump on a Windows machine

In the command window in which you started Replication Agent, press Ctrl-Break.

Obtaining a thread dump on a UNIX or Linux machine

- Find the process ID of the JVM in which Replication Agent is running using **ps** and **grep**:

```
%>ps -ef | grep RAX-15_5
```

The **e** and **f** options show full output for every running process. The **grep** command will filter results on the string “RAX-15_5”. The result returned looks something like the following:

```
sybase 12345 67890 0 14:21 pts/1 00:00:22
/software/sybase/RAX-15_5/JRE6/bin/java -server
```

Here, 12345 is the process ID (PID) of the Replication Agent Java process.

- Terminate the process with the **kill** command and **QUIT** option:

```
%>kill -QUIT pid
```

where *pid* is the PID you obtained from the last step.

Note: On UNIX or Linux, it is customary to start the Replication Agent process in the background, therefore the console in which the Replication Agent process was started may no longer be available when you decide to obtain a thread dump. The JVM always prints a thread dump to the console in which the Replication Agent process was started, so you should always redirect process output to a file when you start Replication Agent. For example:

```
%>RUN_inst_name >! output.txt
```

where *inst_name* is the server name of the Replication Agent instance.

Marking Procedures with Predefined PL/SQL Numeric Datatypes

Replication Agent for Oracle supports marking for replication those procedures that contain these predefined PL/SQL numeric datatypes.

- *BINARY_DOUBLE*
- *BINARY_FLOAT*
- *NUMBER*

The “Predefined PL/SQL numeric datatypes” section in Chapter 1, “Replication Agent for Oracle,” in the *Replication Agent Primary Database Guide* incorrectly states that the preceding datatypes are not supported.

Required Replication Agent Permissions

Replication Agent for Oracle requires the **create any procedure** permission to mark procedures for replication.

Correction to pdb_xlog Example

The command to move the transaction log truncation point to the end of the current transaction log (Oracle and Microsoft SQL Server) is **pdb_xlog move_truncpt**.

lr_max_op_queue_size Support Clarification

lr_max_op_queue_size is available on all supported data servers.

The *Replication Agent Reference Manual* incorrectly states that it is available only on Oracle and Microsoft SQL Server.

Correction to the Documented Replication Agent Installation Directory

The Replication Agent installation directory is RAX-15_5.

The `pdb_asmdiskmap` reference page in *Replication Agent Reference Manual > Command Reference* incorrectly documents the Replication Agent directory as MA-15_5; the correct installation directory is RAX-15_5.

Granularity of the LTL Origin Commit Time for Oracle Operations

For Oracle, the precision of the origin commit time does not include milliseconds.

Replication Agent retrieves the origin commit time from the Oracle `redo` log. The granularity of timestamps in the `redo` log is to the second, rather than to the millisecond.

Oracle Privileges for DDL Replication

Lists the Oracle 10g and 11g privileges that a user must have to perform DDL replication.

Note: Issuing **GRANT ALL PRIVILEGES TO DDLUSER** turns the DDL user to a super user similar to `SYS` and `SYSTEM`.

Different versions of Oracle have different permission requirements. For Oracle 10g and 11g, grant the DDL user permission to execute these commands:

- **ALTER ANY INDEX**
- **ALTER ANY INDEXTYPE**
- **ALTER ANY PROCEDURE**
- **ALTER ANY TABLE**
- **ALTER ANY TRIGGER**
- **ALTER ANY TYPE**
- **ALTER SESSION**
- **BECOME USER**
- **CREATE ANY INDEX**
- **CREATE ANY INDEXTYPE**
- **CREATE ANY PROCEDURE**
- **CREATE ANY SYNONYM**
- **CREATE ANY TABLE**

- **CREATE ANY TRIGGER**
- **CREATE ANY TYPE**
- **CREATE ANY VIEW**
- **CREATE INDEXTYPE**
- **CREATE MATERIALIZED VIEW**
- **CREATE PROCEDURE**
- **CREATE PUBLIC SYNONYM**
- **CREATE SYNONYM**
- **CREATE TABLE**
- **CREATE TRIGGER**
- **CREATE TYPE**
- **CREATE VIEW**
- **DELETE ANY TABLE**
- **DROP ANY INDEX**
- **DROP ANY INDEXTYPE**
- **DROP ANY MATERIALIZED VIEW**
- **DROP ANY PROCEDURE**
- **DROP ANY SYNONYM**
- **DROP ANY TABLE**
- **DROP ANY TRIGGER**
- **DROP ANY TYPE**
- **DROP ANY VIEW**
- **DROP PUBLIC SYNONYM**
- **INSERT ANY TABLE**
- **SELECT ANY TABLE**
- **UPDATE ANY TABLE**

Revoke the DDL user's permission to execute:

- **ALTER DATABASE**
- **ALTER ROLLBACK SEGMENT**
- **ALTER SYSTEM**
- **ALTER TABLESPACE**
- **ANALYZE ANY**
- **AUDIT ANY**
- **AUDIT SYSTEM**
- **CREATE DATABASE LINK**
- **CREATE ROLLBACK SEGMENT**
- **CREATE TABLESPACE**
- **DROP PUBLIC DATABASE LINK**

- **DROP ROLLBACK SEGMENT**
- **DROP TABLESPACE**
- **LOCK ANY TABLE**

UNC Paths for Replication Agent for Oracle on Windows

If Replication Agent for Oracle is running as a Windows service and the primary Oracle data server is installed on a separate machine, configure the archive and online redo log paths according to the Microsoft Windows Universal Naming Convention (UNC):

```
\\oracle_server_machine\oracle_log_path
```

where *oracle_server_machine* is where the primary Oracle data server resides, and *oracle_log_path* is the archive or redo log file. For example, to set the location of archive redo log files to the `oracle` directory on the machine named `labratx64`, enter:

```
1> ra_config pdb_archive_path, \\labratx64\oracle
```

```
2> go
```

pdb_xlog Syntax to Move the Transaction Log Truncation Point

The Replication Agent 15.5 Reference Manual entry for the **pdb_xlog** command provides an incorrect example for moving the transaction log truncation point to the end of the current transaction log.

The correct syntax does not use the **init** keyword:

```
pdb_xlog move_truncpt
```

Granting create object Permission to the rs_username User

Grant create object permission to the user ID specified by the Replication Agent **rs_username** parameter.

The **rs_username** user must have `create object` permission before Replication Agent can use it to create replication definitions from Replication Server. You must grant this permission manually from the RSSD.

1. Log in to Replication Server:

```
isql -Usa -P -SSAMPLE_RS
```

2. Enter:

```
grant create object to SAMPLE_RS_ra
```

```
go
```

where `SAMPLE_RS_ra` is the value for the `rs_username` parameter you entered in the resource file.

3. Log in to the RSSD:

```
isql -USAMPLE_RS_RSSD_prim -PSAMPLE_RS_RSSD_prim_ps
-SSAMPLE_RS_RSSD
```

where `SAMPLE_RS_RSSD`, `SAMPLE_RS_RSSD_prim`, `SAMPLE_RS_RSSD_prim_ps` are the RSSD database name, user ID, and password needed to log in to the RSSD.

4. Verify that the `rs_username` user has `create object` permission:

```
select * from rs_users where username = 'SAMPLE_RS_ra'
go
```

The `rs_users` system table should now indicate that the `rs_username` user has `create object` permission.

Replication Agent for Oracle Marker Objects

Replication Agent creates marker objects in the Oracle primary database.

These Replication Agent objects are related to Replication Server markers. No permissions are granted when these objects are created.

Table 9. Replication Agent Marker Objects

Object	Object Name
Transaction log marker procedure	RS_MARKER[<i>xxx</i>]
Dump marker procedure	RS_DUMP[<i>xxx</i>]
Transaction log marker shadow table	<i>prefix</i> MARKERSH_[<i>xxx</i>]
Dump marker shadow table	<i>prefix</i> DUMPSH_[<i>xxx</i>]

- *prefix* represents the one- to three-character string value of the `pdb_xlog_prefix` parameter (the default is `ra_`).
- *xxx* represents an alphanumeric counter, a string of characters that is (or may be) added to a database object name to make the name unique in the database.

Correction to Linux Block Device Documentation

The correct parameter for configuring Replication Agent for Oracle to read directly from Linux block devices is `ra_direct_read`.

The *Replication Agent 15.6 New Features Bulletin* incorrectly states that the parameter name is `lr_direct_read`.

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