



Release Bulletin

Replication Server[®] Option for Oracle 15.7.1 ESD #2

Linux, Microsoft Windows, and UNIX

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

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Product Summary

The Sybase® Replication Server® Option for Oracle can be purchased separately from Replication Server or as part of Replication Server Real-Time Loading Edition (RTLE).

The Replication Server Option for Oracle

Use the Replication Server Option for Oracle with Replication Server for replication across a distributed Oracle-to-Oracle system. To obtain the Replication Server Option for Oracle, you must already have Replication Server.

The Replication Server Option for Oracle is compatible with the same platform and operating system configurations as Replication Agent™ for Oracle 15.7.1 ESD #2 and ExpressConnect for Oracle 15.7.1 ESD #1. For specific hardware and software requirements, see the *ExpressConnect for Oracle Configuration Guide* and the *Replication Agent for Oracle Installation Guide*.

For more general information about the Replication Server Option for Oracle, see the *Replication Server Heterogeneous Replication Guide*.

Version Contents

The Replication Server Option for Oracle is available for Oracle only and requires a license for accessing data only in the Oracle data server.

Replication Server Option for Oracle consists of:

- Express Connect for Oracle – licensed for Oracle
- Replication Agent – licensed for Oracle

See also

- *Licensing Options* on page 3

Replication Server Real-Time Loading Edition

The Replication Server Real-Time Loading Edition (RTLE) includes components necessary to replicate to a Sybase IQ database.

RTLE enables real-time loading for replicating data from Adaptive Server® or Oracle to Sybase IQ. Replication from Oracle requires Replication Agent for Oracle. Although real-time loading is supported on all platforms that Replication Server supports, Replication Agent for Oracle is not available on Linux on POWER. However, you can run Replication Agent for

Product Summary

Oracle on any of its supported platforms. For a list of platforms on which Replication Agent for Oracle is available, see the *Replication Agent for Oracle Installation Guide*.

Version Contents

RTLE consists of:

- Replication Server
- Replication Agent for Oracle

With RTLE, Replication Agent for Oracle is licensed statically.

Note: Although compatible with Replication Agent for Oracle, RTLE it is not included with the Replication Server Option for Oracle.

Replication Server 15.7.1 can be licensed for a subset of the CPUs on which it is installed (sub-capacity licensing). See the *Replication Server Installation Guide*.

Replication Agent for Oracle

Replication Agent for Oracle extends the capabilities of Sybase Replication Server by allowing an Oracle database server to act as the primary data server in a replication system based on Sybase replication technology.

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

Product Compatibility

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

Table 1. Compatible Databases

Database	Versions
Oracle Server	10g (10.2), 10g ASM, 10g RAC, 10g in 9i compatibility mode, 11g (11.1, 11.2), 11g ASM, 11g RAC

Replication Agent for Oracle requires a JDBC™ 4.0-compliant driver for the Oracle primary data server.

Table 2. Compatible Drivers

Driver	Versions
Oracle JDBC driver	<ul style="list-style-type: none"> • 11.1 for JDK 1.5 • 11.2 for JDK 1.6 <p>Note: You can use either of these drivers with Oracle version 10.2 or 11.1. However, for Oracle 11.2, you must use Oracle JDBC 11.2 driver.</p>

Table 3. Compatible Products

Sybase Product	Version
Replication Server	15.7.1 ESD #1
Sybase Software Asset Management (SySAM)	2

Licensing Options

Before installing, review the licensing options.

Table 4. Licensing Options for RSO for Oracle Components

RSO for Oracle Component	Licensing Options
Replication Agent for Oracle	A SySAM served or unserved license obtained from the Sybase Product Download Center (SPDC) or Service Marketplace (SMP) is required.
ECO	Obtain the SYBASE_REP_ECO.lic static license file and the RE-ADME.txt file from the SYBASE_RSO-O_license.zip file on the Getting Started CD.

Table 5. Licensing Options for RTLE Components

RTLE Component	Licensing Options
Replication Server	A SySAM served or unserved license obtained from the SPDC is required.

RTLE Component	Licensing Options
Replication Agent for Oracle	<p>Obtain the Replication Agent for Oracle 15.7.1 ESD #2 static license file that includes the license for Replication Agent for Oracle and the README.txt from SPDC or the Getting Started CD.</p> <p>You can use Replication Agent for Oracle only with Replication Server covered under the RTLE license.</p>

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.

Replication Server Option for Oracle License

Read the information about mobile licensing in the *Sybase Software Asset Management 2 Users Guide*.

If you are using sub-capacity 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 Sub-capacity*. 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 **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.

License Expiration

The Replication Server Option for Oracle, Replication Server, and Adaptive Server use the same registry. When the license for one of these products expires, the licenses of the other products are affected. If you are evaluating the Replication Server Option for Oracle, request another evaluation license from Sybase. Otherwise, generate your licenses at SPDC or SMP and deploy them.

Running InstallAnywhere and InstallShield Multiplatform Installers

Some of the files generated by InstallAnywhere and InstallShield Multiplatform share the same file names. This becomes an issue when you use both InstallAnywhere and InstallShield technologies to install or uninstall products in the same installation directory because files that

are used by both installers are overwritten or removed without warning. Sybase recommends that you do not use InstallShield and InstallAnywhere to install to or uninstall from the same installation directory.

Installing a Static License for Replication Agent for Oracle

If you did not specify the static license during RTLE installation, install the static license after the installation is complete.

1. Stop the Replication Agent for Oracle instance if it is running.
2. Copy the Replication Agent for Oracle static license file to:
 - `$SYBASE/SYSAM-2_0/licenses` (UNIX or Linux)
 - `%SYBASE%\SYSAM-2_0\licenses` (Windows)

where `$SYBASE` or `%SYBASE%` is where you installed Replication Agent for Oracle.

3. Restart the Replication Agent for Oracle instance.
4. Check the Replication Agent for Oracle log file to verify that the Replication Agent for Oracle instance has started successfully:
 - `$SYBASE/RAX-15_5/<instance_name>/log/<instance_name>.log` (UNIX or Linux)
 - `%SYBASE%\RAX-15_5\<instance_name>\log\<instance_name>.log` (Windows)

Replication Agent for Oracle Special Installation Instructions

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

Visual C++ 2005 Runtime Components

When installing on Microsoft Windows, the Replication Agent for Oracle 15.7.1 ESD #2 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 `vcredist_x86.exe` to install the Visual C++ runtime components on Microsoft Windows 32-bit or 64-bit machines.

SySAM Server Internet Protocol Configuration

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

ExpressConnect for Oracle Special Installation Instructions

ExpressConnect for Oracle 15.7.1 ESD #1 is now installed with Replication Server 15.7.1 ESD #1. ExpressConnect for Oracle is no longer installed as a standalone product.

ExpressConnect for Oracle (ECO) also does not include Oracle client libraries, which are required to run it. The libraries now need to be downloaded and installed separately. See the *General Information and Technical Notes* section of the ECO cover letter for information on correct version and platform of Oracle client libraries, and installation instructions. If the cover letter is not available, see *Oracle Instant Client Libraries Installation Instructions* in the *ExpressConnect for Oracle Configuration Guide*.

Special Upgrade and Downgrade Instructions

Learn about special upgrade and downgrade instructions for Replication Agent for Oracle.

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

Downgrading Replication Agent for Oracle 15.7.1 ESD #2 Installed on Top of Replication Agent for Oracle 15.6

By default, the Replication Agent for Oracle 15.7.1 ESD #2 installer uses the RAX-15_5 directory, and overwrites the Replication Agent for Oracle 15.5 installation. Follow these steps to correctly downgrade a typical Replication Agent for Oracle 15.7.1 ESD #2 installation.

1. Shut down Replication Agent for Oracle 15.7.1 ESD #2.
2. Install Replication Agent for Oracle 15.6 in the default installation directory.
3. Prepare for downgrade:

```
ra_downgrade installation_path
```

4. Complete the downgrade:

```
ra_downgrade_accept timestamp.export
```

where *timestamp.export* is the file to which **ra_downgrade** extracted RASD contents.

5. Start Replication Agent for Oracle 15.6, 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.

The known issues for the Replication Server Option for Oracle are in addition to those described in the individual product release bulletins.

Known Issues for ExpressConnect for Oracle

Learn about known issues and workarounds for ExpressConnect for Oracle.

Table 6. Known Issues for ExpressConnect for Oracle

CR#	Description
718540	<p>Incorrect function string for Oracle database resynchronization causes the DSI to shut down.</p> <p>If ExpressConnect for Oracle receives a function string intended for use with Direct-Connect™ for Oracle, the Replication Server log reports an error similar to:</p> <pre>E. 2012/09/06 17:47:40. ERROR #5046 DSI(myds.mydb) - / dsioqid.c(xxxx) When executing the rs_get_lastcommit function in database 'myds.mydb', received data server errors. See logged data server errors for more information.</pre> <p>The DSI shuts down.</p> <p>Workaround: If your DSI uses an Oracle function string class, apply these commands directly to the RSSD, and restart Replication Server:</p> <pre>delete rs_systext where parentid= 0x00000000ffffd2a insert into rs_systext values(0, 0x00000000ffffd2a, 'O',1,'delete from rs_lastcommit where origin = ?rs_origin!sys? ; insert into rs_lastcommit values (?rs_origin!sys?, HEXTORAW('000000000000000000000000 000 '),') insert into rs_systext values(0, 0x00000000ffffd2a, 'O',2,'HEXTORAW('00000000000000000000000000000000 00 sysdate) ; commit')</pre> <p>If your DSI uses a user-defined function string class, use the create function string command to update the function string. For example:</p> <pre>create function string rs_reset_lastcommit for private_function_class with overwrite output language 'delete from rs_lastcommit where origin = ?rs_origin!sys? ; insert into rs_lastcommit values (?rs_origin!sys?, HEXTORAW('00 00 HEXTORAW('00 00 sysdate, sysdate) ; commit'</pre>

CR#	Description
708792	<p>Replication Server fails to load the ExpressConnect for Oracle (ECO) library files on Windows x86 32-bit system due to missing Microsoft Visual C++ 2005 Service Pack 1 Redistributable Package MFC security update.</p> <p>Workaround: Download and install the Microsoft Visual C++ 2005 security update: http://www.microsoft.com/en-us/download/details.aspx?id=26347</p>
627878	<p>ExpressConnect for Oracle does not support opaque datatypes.</p> <p>The Replication Server opaque datatype is not supported by ExpressConnect for Oracle 15.7.1, which means that this version of ExpressConnect for Oracle cannot support user-defined datatypes and the Oracle anydata function.</p> <p>Workaround: None.</p>
626715	<p>ExpressConnect for Oracle fails when bulk copy is enabled and the bulk copy threshold is set to 1.</p> <p>ExpressConnect for Oracle fails when you set dsi_bulk_copy to on and dsi_bulk_threshold to 1. Setting dsi_bulk_threshold to 1 deteriorates and suspends the Data Server Interface (DSI).</p> <p>Workaround: Set dsi_bulk_threshold to 2 or higher.</p>
590128	<p>LOB value not being applied to existing row.</p> <p>When replicating an LOB column, ExpressConnect for Oracle first determines the ROWID value for the Oracle row that should contain the LOB. The row for that ROWID is updated with the LOB value. However, if the table in the replicate Oracle database is a reference table, and the parent table is partitioned across multiple tablespaces, then the ROWID returned for the reference table may be incorrect, resulting in the LOB value not being applied to the expected row. The Oracle bug ID for this incorrect ROWID problem is 8417690.</p> <p>Workaround: None.</p>

Known Issues for the Replication Agent for Oracle Installer

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

Table 7. Replication Agent for Oracle Installer Issues

CR#	Description
706053	<p>The resource file cannot be used to create the pds_username.</p> <p>When create_pds_username is set to yes in the resource file, the creation results to an error:</p> <pre>Apr 23, 2012 10:27:54 AM com.sybase.ra.admin.oracle.RAOAdmin verifyPDSCConnections ERROR: Length of user ID <RA_USER_CREATED> exceeds the maximum 30 characters. Apr 23, 2012 10:27:54 AM com.sybase.ra.admin.oracle.RAOAdmin verifyPDSCConnections ERROR: Length of password <[C@40f6a33b> exceeds the maximum 30 characters.</pre> <p>Workaround: Create the pds_username manually (outside of the instance creation).</p>
699784	<p>Replication Agent installation on AIX platform fails.</p> <p>When installing Replication Agent on AIX, only SySAM gets installed and Replication Agent components fail.</p> <p>Workaround: Set the IATEMPDIR environment variable to a location that contains sufficient space and restart the Replication Agent installer.</p>
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, specify a served license.</p> <p>To install a SySAM server without running the Replication Agent installer, invoke the SySAM server installer directly from the <code>archives</code> directory of the Replication Agent 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 installer and a suitable JRE will be installed. You can reference this JRE through the <code>SYBASE_JRE7</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) ... (SYBASE) License server 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>
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:</p> <p style="background-color: #f0f0f0;">Replication Agent for database_type, license not found</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>
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>
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>

CR#	Description
593410	<p>Installation program cannot uncompress the Replication Agent archive.</p> <p>On UNIX and Linux platforms, if you specify the tar utility from the GNU collection before the operating system-supplied tar utility in the \$PATH environment variable, the GNU tar utility is invoked when you issue a tar command, and the installer fails with this error:</p> <pre>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 \$PATH environment variable, specify the operating system-supplied tar utility before the GNU tar utility.</p>
579988	<p>./setup.bin: !: not found message appears when installing Replication Agent on Solaris.</p> <p>You see this error message when you install Replication Agent on Solaris:</p> <pre>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 the Replication Server Option for Oracle

Learn about known issues and workarounds for Replication Agent for Oracle.

Table 8. Replication Agent for Oracle Issues

CR#	Description
722892	<p>Replication of Oracle BFILE data fails.</p> <p>Workaround: None.</p>
722261	<p>Replication Agent for Oracle instance setup fails with a resource file.</p> <p>When you attempt to create and configure a Replication Agent for Oracle instance using a resource file, the instance creation and configuration may fail, even when the resource file validates successfully.</p> <p>Workaround: Create and configure the Replication Agent for Oracle instance manually.</p>

CR#	Description
722324	<p>Replication Agent for Oracle does not support the replication of DDL operations executed by Oracle system users, such as SYS or SYSDBA.</p> <p>Workaround: Make sure a non-system user performs all DDL operations that you want to replicate.</p>
722162	<p>Permission is too broad for the Replication Agent for Oracle utilities.</p> <p>Workaround: After installing Replication Agent for Oracle, change permissions for the <code>rao_admin.sh</code> and <code>rao.sh</code> files to 700 (read/write/execute for user, no permissions for group and other).</p>
722157	<p>Response file malicious SQL vulnerability.</p> <p>Malicious code inserted in the response-file entries for pds_username and pds_password could affect the SQL used to create a user ID and grant required privileges at the primary Oracle database.</p> <p>Workaround: Only the administrator has the privileges necessary to create a Replication Agent instance with a response file. The administrator should therefore check the response file for security threats.</p>
722121	<p>The <code>pdb_setrepproc</code> command fails in Replication Agent for Oracle if <code>ra_admin_owner</code> and <code>pds_username</code> are different.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Suspend your Replication Agent instance. 2. Set ra_admin_owner and pds_username to the same Oracle user ID. You must also set pds_password. 3. Use test_connection to test connectivity to the primary database. 4. Mark your stored procedure for replication: <pre> pdb_setrepproc myproc, mark </pre> <p>where <code>myproc</code> is the procedure being marked.</p> 5. Set pds_username and pds_password back to their original values. 6. Resume replication.
722089	<p>Login to Oracle fails with <code>pds_username</code> and <code>ddl_username</code> due to case-sensitivity.</p> <p>The Replication Agent pds_username and ddl_user configuration parameters are not case-sensitive. In Replication Agent for Oracle, these parameters are case-insensitive, which can result in login failure.</p> <p>Workaround: None.</p>
722068	<p>Permission is too broad for the Replication Agent configuration file.</p> <p>Workaround: Change permissions for the configuration (<code>.cfg</code>) file to 600 (read/write for user, no permissions for group and other).</p>

CR#	Description
721313	<p>Replication Agent replicates corrupt unicode character for code point 1513.</p> <p>Workaround: None.</p>
720525	<p>Upgrade from Replication Agent for Oracle 15.7.1 to Replication Agent for Oracle 15.7.1 ESD #2 fails due to prefix string case.</p> <p>The upgrade from Replication Agent for Oracle 15.7.1 to Replication Agent for Oracle 15.7.1 ESD #2 may fail if:</p> <ul style="list-style-type: none"> • you initialize a Replication Agent for Oracle 15.7.1 ESD #2 on its initial startup with a default value for ra_admin_instance_prefix, or • you set pdb_xlog_prefix to a value different from ra_admin_instance_prefix or to non-default value different from ra_admin_instance_prefix. <p>The upgrade fails silently: No error is reported for the upgrade failure.</p> <p>Workaround: If the upgrade fails silently after initialization on initial startup with a default value for ra_admin_instance_prefix:</p> <ul style="list-style-type: none"> • Update the prefix and the upg_from_ver columns of the ra_agent table in the primary database: <pre>UPDATE owner.ra_agent SET prefix=upper(prefix), upg_from_ver=6100 WHERE prefix='ra_'; commit;</pre> <p>where <i>owner</i> is specified by ra_admin_owner, and ra_ is the default for ra_admin_instance_prefix.</p> <p>If the upgrade fails silently after you set pdb_xlog_prefix to a value different from ra_admin_instance_prefix or to non-default value different from ra_admin_instance_prefix:</p> <ol style="list-style-type: none"> 1. Shut down the Replication Agent instance. 2. Manually update the configuration file entry for ra_admin_instance_prefix, changing any lowercase characters to uppercase. 3. Update the upg_from_ver column of the ra_agent table in the primary database: <pre>UPDATE owner.ra_agent SET upg_from_ver=6100 WHERE prefix='XX_'; commit;</pre> <p>where <i>owner</i> is specified by ra_admin_owner, and XX_ is the value you set ra_admin_instance_prefix to in the configuration file.</p>
720270	<p>Replication Agent login fails after ra_finalize_upgrade command.</p> <p>Workaround: After you upgrade to Replication Agent for Oracle 15.7.1 ESD #2 and invoke ra_finalize_upgrade, restart your Replication Agent instance before attempting to log in.</p>

CR#	Description
718198	<p>Replication of off-row LOB insert and rollback operations fails when dynamic SQL is enabled for the connection.</p> <p>Oracle-to-Oracle replication of an off-row LOB insert or rollback may fail due to the DSI being down when the Replication Server dynamic_sql parameter is set to on.</p> <p>Workaround: If you are trying to replicate an off-row LOB insert and cannot set dynamic_sql to off, log on to Replication Agent, and create a table-level replication definition on the affected table:</p> <pre>1> rs_create_repdef my_table 2> go</pre> <p>where my_table is the table affected by the dynamic SQL statement.</p>
714867	<p>Replication Agent for Oracle may replicate LOB data as null.</p> <p>When an Oracle 11g Release 2 database installed on HP Itanium (64-bit) or IBM AIX (64-bit) uses the DBMS_LOB.LOADFROMFILE procedure to update a LOB, Replication Agent for Oracle may replicate the LOB data as null.</p> <p>Workaround: None.</p>
714588	<p>Replication may fail for large character ANYDATA.</p> <p>Replication Agent for Oracle may go to the Replication Down state with a ParseException error when processing data of type ANYDATA containing a large character value on Oracle 11g Release 2.</p> <p>Workaround: None.</p>
713588	<p>Replication Agent for Oracle goes to Replication Down state due to Oracle trigger problem.</p> <p>When you create a new trigger on a table in Oracle 11.2.0.1, the trigger is disabled by default. Subsequent triggers created on the table are enabled by default.</p> <p>Workaround: After you create a new trigger on a table in Oracle 11.2.0.1, explicitly enable the trigger state using the Oracle command:</p> <pre>ALTER TRIGGER <trigger_name> ENABLE</pre> <p>where <trigger_name> is the name of the new trigger.</p> <p>Alternately, you can use the ENABLE ALL TRIGGERS clause of Oracle ALTER TABLE command to enable all triggers defined for the table.</p>
713300	<p>Replication Agent for Oracle replicates LOB of incorrect size due to LogMiner error.</p> <p>Oracle LogMiner occasionally indicates and provides Replication Agent for Oracle with LOB data that is longer than the correct length.</p> <p>Workaround: None.</p>

CR#	Description
711895	<p>Replication Agent for Oracle does not support the replication of SecureFile LOB data in reference-partitioned tables.</p> <p>Workaround: None.</p>
709173	<p>When the Replication Agent processes records with LOB for tables with partition by hash on Oracle 11.1 for HPIA64 and Windows platforms, this exception error is encountered:</p> <p>Could not mine or match a RAW LogMiner record for record <...Operation <UNSUPPORTED> ... SQL Redo <Unsupported> > from SCN [<xxx>, <xxx>] .></p> <p>Workaround: None.</p>
708629	<p>Unable to support Oracle SecureFile LOB for all platforms.</p> <p>Workaround: Contact the Sybase Technical Support.</p>
708568	<p>Cannot create connection to Oracle replicate dataserver when tnsnames.ora file entry has Oracle Transparent Application Failover (TAF) enabled.</p> <p>Workaround: Remove the "FAILOVER_MODE" entry from the replicate dataserver alias in the tnsnames.ora file.</p>
707428	<p>OracleLogRecordProcessingException error is encountered in Oracle version 11.1.0.6.</p> <p>When you alter a table with truncate partition in the primary database, where the table is a partitioned table with LOB and sub-partitions, an OracleLogRecordProcessingException error is encountered. This is encountered only in Oracle version 11.1.0.6.</p> <p>Workaround: You can either:</p> <ul style="list-style-type: none"> Use this command: <pre> ra_config skip_lr_errors, true go resume go </pre> or, Upgrade to Oracle 11.1.0.7 or later.
707274	<p>Resume fails because Oracle LogMiner fails to start with start SCN <0>.</p> <p>Workaround: Resume Replication Agent.</p>

CR#	Description
706919	<p>Oracle LogMiner produces invalid results for FLOAT data with precision greater than 36.</p> <p>This behavior occurs in Oracle 10g Release 2 through Oracle 11g Release 2.</p> <p>Workaround: For Oracle 11g Release 2 Linux-x86-64 platforms, install the Oracle patch for bug #14020842.</p>
703563	<p>Replication Agent for Oracle fails to initiate when ra_admin_owner is different from pds_username.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Set ra_admin_owner and pds_username to the same Oracle user ID. 2. Initialize the Replication Agent instance with ra_admin init. 3. Reset pds_username to a different user ID than that for ra_admin_owner, and change pds_password. 4. For every Replication Agent system object, grant all privileges to the user ID specified by pds_username: <pre>GRANT ALL ON raaowner.RA_AGENT TO pdsuser GRANT ALL ON raaowner.RA_TABLE TO pdsuser GRANT ALL ON raaowner.RA_PROCEDURE TO pdsuser GRANT ALL ON raaowner.RA_XLOG_SYSTEM TO pdsuser GRANT ALL ON raaowner.RA_PCALL TO pdsuser GRANT ALL ON raaowner.RA_PROCACTIVE TO pdsuser GRANT ALL ON raaowner.RS_DUMP TO pdsuser GRANT ALL ON raaowner.RA_DUMP SH TO pdsuser GRANT ALL ON raaowner.RS_MARKER TO pdsuser GRANT ALL ON raaowner.RA_MARKERSH TO pdsuser</pre> <p>where raaowner is the user ID indicated by ra_admin_owner, and pdsuser is the user ID indicated by pds_username.</p> 5. Restart your Replication Agent instance, and continue marking tables for replication.

CR#	Description
702924	<p>The alter table DDL command fails in Replication Agent.</p> <p>In Oracle 10g, when a new column is added to a table with not null and default value, Oracle also updates the existing rows with the default column value. When the update to the existing rows is performed, an exception shows up since Replication Agent has not processed the alter table DDL yet, which means it has not updated the article to add the new column. Replication Agent has no way to determine whether this is a normal user table update or an internal update that is generated by DDL transaction.</p> <p>Workaround: Use pdb_skip_op command to skip the internal update DML log record in the alter table DDL transaction.</p> <ol style="list-style-type: none"> 1. Locate the internal update DML log record in the Replication Agent error log with LRTRACE set to on. Example: <pre>T. 2012/03/25 20:27:12.293 LRTRACE com.sybase.ds.oracle.logmnr.OracleOperationPr Processing LogMiner Record <OPID <0x0000.00bab3a6.0000:0001.00000be3.000000bf.00f0>, Timestamp <2012-03-25 20:27:12.0>, XID <0x0004.002b.00000c39>, Serial# <7528>, Session# <133>, Session Info <login_username=QAMUSER client_info= OS_username=wliao Machine_name=rqavmrhl OS_terminal= OS_process_id=31314 OS_program_name=dcoracle@rqavmrhl (TNS V1-V3)>, User Name <QAMUSER>, Object ID <93318>, REL_FILE# <5>, DATA_BLK# <893>, DATA_OBJD#<93318>, Operation <UPDATE>, Op Code <3> Roll-back <0> SSN <0> CSF <0> SQL Redo <update "QAMUSER"."QAM_INT" set "FEE_SUB_MNEM_CD" = ' ' where "FEE_MNEM_CD" = 'SYB' and "FEE_TYP_DESC" = 'UNWIRED ENTERPRISE ' and "LST_UPDT_DTTI" = TO_TIMESTAMP('01/02/2009 00:00:00.000000000') and "LST_UPDI_USER_ID" IS NULL and "FEE_SUB_MNEM_CD" IS NULL;> >.</pre> 2. Collect SCN, THREAD, and RBA of that update log record, and use pdb_skip_op command to skip it. <pre>pdb_skip_op add, SCN, THREAD, RBA</pre> 3. Resume Replication Agent.
702863	<p>Oracle does not support tables and tablespaces compressed for OLTP.</p> <p>Oracle LogMiner for Oracle 11g Release 2 does not support tables and tablespaces compressed for online transaction processing (OLTP).</p> <p>Workaround: If you want to replicate tables compressed for OLTP, apply Oracle patch #129050503.</p>

CR#	Description
702654	<p>Replication Agent aborts with LTI formatting error.</p> <p>The Replication Agent is aborted with LTI formatting error on a locator value due to Oracle LogMiner limitation on decimal precision support.</p> <p>Workaround: None. Please contact Sybase Technical Support.</p>
691433	<p>Oracle LogMiner zeroes out fractional second on timestamp columns.</p> <p>Replication of millisecond section of <code>timestamp</code> datatype column fails if the primary Oracle version is earlier or equal to 10.2.0.4.</p> <p>Workaround: You can either:</p> <ul style="list-style-type: none"> • Upgrade to Oracle 10.2.0.5 or 11g. This issue has been fixed in these versions. Or, • Apply Oracle patch 4727401, if available for your platform and Oracle version. <hr/> <p>Note: Replicating these tables is not supported in Oracle 10.2 due to lost part of a millisecond:</p> <ul style="list-style-type: none"> • Tables created with <code>PARTITION BY HASH (timestamp_col)</code>. • Tables with <code>timestamp</code> columns as primary key or unique index. <hr/>
663726	<p>rasd_restore does not shutdown Replication Agent instance when run with a parameter.</p> <p>Workaround: Run <code>rasd_restore</code> without specifying a parameter.</p>
645980	<p>Exadata Hybrid Columnar Compression (EHCC) not supported.</p> <p>Replication Agent for Oracle does not support the replication of "columnar compressed data because Replication Agent for Oracle does not support Exadata. 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>
642804	<p>Incorrect pdb_auto_create_repdefs command description in the output display.</p> <p>The <code>ra_config</code> displays an incorrect description for <code>pdb_auto_create_repdefs</code>.</p> <p>Workaround: See the <i>Replication Agent Reference Manual</i> for the correct description of the <code>pdb_auto_create_repdefs</code> command.</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>

CR#	Description
630089	<p>Oracle resynchronization limitation.</p> <p>Replication Agent for Oracle does not support the resynchronization scenario described in the <i>Resynchronizing the Active and Standby Databases in a Warm Standby Application</i> section in the <i>Replication Server Heterogeneous Replication Guide</i>.</p> <p>Workaround: None.</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>
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
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 american_america.zhs16gbk. For example:</p> <ul style="list-style-type: none"> • On Windows: set nls_lang=american_america.zhs16gbk • On UNIX: setenv NLS_LANG american_america.zhs16gbk
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, rs_create_repdef cannot create a replication definition for marked tables unless you specify a table owner.</p> <p>Workaround: Specify a table owner in the rs_create_repdef syntax. For example:</p> <pre>rs_create_repdef qaxuser.qax_tabl</pre> <p>where <i>qaxuser</i> is the table owner.</p>
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> <pre>Pid xxxx was killed due to failure in writing to user register stack - possible stack overflow.</pre> <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
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 rs_oracle_function_class:</p> <pre>alter connection to dco2stb.ordb (standby connection) set function string class to my_oracle_function_class go</pre>
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>
563912	<p>Incorrect lr_ntext_byte_order command default value in the output display.</p> <p>The ra_config lr_ntext_byte_order command output incorrectly displays the default value as "<not_configured>" instead of big.</p> <p>Workaround: See the <i>Replication Agent Reference Manual</i> for the correct information on this command.</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>

CR#	Description
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>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>

Document Updates and Clarifications

Read about updates, corrections, and clarifications to the documentation released with the Replication Server Option for Oracle.

Array Processing Requirement in ExpressConnect for Oracle

Ensure that array processing in ExpressConnect for Oracle is applied only to tables that have a table-level replication definition.

The performance enhancement provided by array processing within the ExpressConnect for Oracle connection requires the information included in the table-level replication definition.

Replication Agent for Oracle Log Truncation with RMAN Disabled

As of version 15.7.1, Replication Agent for Oracle no longer requires direct access to the Oracle archive redo logs unless it is configured to truncate these logs without using the Oracle Recovery Manager (RMAN).

However, Replication Agent for Oracle checks the directory indicated by **pdb_archive_path** and issues an error if the Oracle archive redo logs are not visible or readable, regardless of whether or not Replication Agent for Oracle uses RMAN to truncate the archive redo logs. Consequently, you may not be able to configure Replication Agent for Oracle to run from a remote host.

If Replication Agent for Oracle and the primary Oracle database are not located on the same host, set **pdb_archive_path** to a valid local directory that matches the path to the archive redo logs on the remote host.

Replication Agent Instance Availability Monitoring

You can configure Sybase Control Center (SCC) to monitor the availability of the Replication Agent instance and to notify you when the Replication Agent instance requires attention.

See *Sybase Control Center 3.2.6 > Sybase Control Center 3.2.6 for Replication > Manage and Monitor*.

Replication Agent for Oracle Utilities

Replication Agent for Oracle 15.7.1 ESD #2 introduces **rao**, **rao_admin**, and **raoagt_service** utilities that replace existing utilities for creating and starting a Replication Agent instance and for running a Replication Agent instance as a Windows service.

These utilities are for Replication Agent for Oracle only:

- **rao** starts a Replication Agent for Oracle instance or returns the Replication Agent for Oracle software version number.
- **rao_admin** creates, copies, verifies, and deletes Replication Agent for Oracle instances or lists all verifiable, installed Replication Agent for Oracle instances on a machine.
- **raoagt_service** runs a Replication Agent for Oracle instance as a Microsoft Windows service.

Obtaining Help and Additional Information

Use the Sybase Getting Started CD, Product Documentation site, and online help to learn more about this product release.

- The Getting Started CD (or download) – contains release bulletins and installation guides in PDF format, and may contain other documents or updated information.
- Product Documentation at <http://sybooks.sybase.com/> – is an online version of Sybase documentation that you can access using a standard Web browser. You can browse documents online, or download them as PDFs. In addition to product documentation, the Web site also has links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, Community Forums/Newsgroups, and other resources.
- Online help in the product, if available.

To read or print PDF documents, you need Adobe Acrobat Reader, which is available as a free download from the *Adobe* Web site.

Note: A more recent release bulletin, with critical product or document information added after the product release, may be available from the Product Documentation Web site.

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 - c) If prompted, enter your MySybase user name and password.
 - d) (Optional) Select a filter, a time frame, or both, and click **Go**.
 - e) Select a product.

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- For platform certifications, go to <http://certification.sybase.com/ucr/search.do>

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1. Go to <http://www.sybase.com/mysybase>.
2. Click **Register Now**.

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