



Release Bulletin

Replication Server[®] Options

15.7.1 SP100

Linux, UNIX, and Microsoft Windows

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Product Summary

The Sybase® Replication Server® Options can be purchased separately from Replication Server, or as part of Replication Server Heterogeneous Edition (RSHE) or Replication Server Real-Time Loading Edition (RTLLE).

Change in Release Version Number

Software patches currently known to Sybase® customers as ESDs (Electronic Software Deliveries) following major or minor releases are now referred to as SPs (support packages), with numbers of up to three digits.

See SAP® Release Strategy for all Major Software Releases at: <https://service.sap.com/releasestrategy>. There is no change to upgrade or downgrade procedures because of this change in version number.

Replication Server Options

Use Replication Server Options with Replication Server for bidirectional replication across distributed, heterogeneous systems, which allows you to perform different operational and decision-support tasks. To obtain an option, you must already have Replication Server.

Replication Server Options are compatible with the same platform and operating system configurations as Replication Agent™ 15.7.1 SP100, and ExpressConnect 15.7.1 SP100 for Oracle. For specific hardware and software requirements, see the *Enterprise Connect Data Access Release Bulletin*, the *ExpressConnect for Oracle Configuration Guide*, and the *Replication Agent Installation Guide*.

For more general information about the heterogeneous replication capability of Replication Server and Replication Server Options, see the *Replication Server Heterogeneous Replication Guide*.

Version Contents

Replication Server Options are available for Oracle, Microsoft SQL Server, and IBM DB2 Universal Database (UDB). Each option requires a license for accessing data only in the specified data source.

- Replication Server Option for Oracle consists of:
 - ExpressConnect for Oracle – licensed for Oracle
 - Replication Agent – licensed for Oracle
- Replication Server Option for Microsoft SQL Server consists of:

Product Summary

- ECDA Option for ODBC – licensed for ODBC
- Replication Agent – licensed for Microsoft SQL Server
- Replication Server Option for IBM DB2 UDB consists of:
 - ECDA Option for ODBC – licensed for ODBC
 - Replication Agent – licensed for IBM DB2 UDB

See also

- *Licensing Options* on page 5

Replication Server Heterogeneous Edition

Replication Server Options and Replication Server are also sold together as part of the Replication Server Heterogeneous Edition (RSHE).

You can use RSHE to replicate between different kinds of data servers. RSHE supports Adaptive Server® Enterprise and non-SAP data servers such as Oracle, IBM DB2 UDB, and Microsoft SQL Server.

Note: You cannot use RSHE to replicate into SAP HANA database.

RSHE is compatible with the same platform and operating system configurations as Replication Server 15.7.1 SP100, Replication Agent 15.7.1 SP100, ECDA 15.7, and ExpressConnect for Oracle 15.7.1 SP100. For specific hardware and software requirements, see the *Replication Server Installation Guide*, the *Replication Agent Installation Guide*, the *Enterprise Connect Data Access Release Bulletin*, and the *ExpressConnect for Oracle Configuration Guide*.

Version Contents

RSHE consists of:

- Replication Server 15.7.1 SP100
- Replication Agent 15.7.1 SP100, including:
 - Replication Agent for Oracle
 - Replication Agent for Microsoft SQL Server
 - Replication Agent for IBM DB2 UDB
- ExpressConnect for Oracle 15.7.1 SP100
- ECDA Options 15.7

Note: In RSHE 15.7.1 SP100, ECDA is used to connect only to Microsoft SQL Server and IBM DB2 Universal Database (UDB). ECDA option for Oracle is not supported in RSHE 15.7.1 SP100.

All RSHE components except Replication Server have static licenses.

Replication Server 15.7.1 SP100 can be licensed for a subset of the CPUs on which it is installed (sub-capacity licensing). See the *Replication Server Installation Guide*.

RSHE on Solaris x64

RSHE on Solaris x64 is for Oracle databases only and includes Replication Agent for Oracle and ExpressConnect for Oracle.

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

Replication Agent

Replication Agent extends the capabilities of Sybase Replication Server by allowing non-SAP 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

Replication Agent is compatible with several database servers, drivers, and products.

Table 1. Compatible Databases

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

Database	Versions
Microsoft SQL Server	<p>2012 as the primary database , 2008 R1 Service Pack 2, and 2008 R2 – Replication Agent does not support the features and datatypes introduced in Microsoft SQL Server 2008.</p> <hr/> <p>Note: Microsoft SQL Server 2005 and earlier versions are no longer supported. You must upgrade your primary database server to a supported version before migrating Replication Agent for Microsoft SQL Server instance(s). See the Certification Web site at http://certification.sybase.com/ucr/search.do for detailed information on the supported versions.</p>
IBM DB2 Universal Database	Enterprise Edition 9.7 and 9.5

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

Table 2. Compatible Drivers

Driver	Versions
Oracle JDBC driver	<ul style="list-style-type: none"> • 11.2 for JDK 1.6 • 11.1 for JDK 1.5 <hr/> <p>Note: You can use either of these drivers with Oracle version 11.1 or 10.2. However, for Oracle 11.2, you must use Oracle JDBC 11.2 driver.</p>
Microsoft SQL Server JDBC driver	3.0
DB2 Universal Database Administration Client	<p>64-bit on Linux and UNIX platforms; 32-bit on Windows platform only. Use version:</p> <ul style="list-style-type: none"> • 9.7 – for DB2 9.7 • 9.5 – for DB2 9.5

Table 3. Compatible Product

Sybase Product	Version
Replication Server	15.7.1 SP100
ExpressConnect for Oracle (ECO)	15.7.1 SP100

Sybase Product	Version
ExpressConnect for HANA DB (ECH)	15.7.1 SP100
ECDA Option for ODBC	15.7
Sybase Software Asset Management (SySAM)	2

Licensing Options

Before installing, review the licensing options.

Table 4. Licensing Options for RSO Components

RSO Component	Licensing Options
Replication Agent	A SySAM served or unserved license obtained from the Sybase Product Download Center (SPDC) or Service Marketplace (SMP) is required.
ECDA for ODBC	Obtain the ECDA license file from SPDC or SMP.
ECO	Obtain the ExpressConnect for Oracle license file from SPDC or SMP.

Table 5. Licensing for Replication into SAP HANA database

Component	Licensing
Replication Agent	A SySAM served or unserved license obtained from the Sybase Product Download Center (SPDC) or Service Marketplace (SMP) is required.
ECH	ExpressConnect for HANA DB is installed with Replication Server. There is no separate installer for ExpressConnect for HANA DB. For replication to HANA DB, use the license key that you generate for your product during installation: <ul style="list-style-type: none"> • SAP Sybase Replication Server, option for SAP HANA, or • SAP Sybase Replication Server, SAP HANA edition See <i>Replication Server Quick Start Guide for HANA DB</i> .

Table 6. Licensing Options for RSHE Components

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

Component	Licensing Options
Replication Agent	Obtain the Replication Agent license file from SPDC or SMP. You can use Replication Agent only with the version of Replication Server covered under the RSHE license.
ECDA	Obtain the ECDA license file from SPDC or SMP. You can use ECDA only with the version of Replication Server covered under the RSHE license. Note: Use ECDA to connect to Microsoft SQL Server and IBM DB2 Universal Database (UDB). To connect to Oracle, use ExpressConnect for Oracle.
ECO	Obtain the ExpressConnect for Oracle license file from SPDC or SMP.

Table 7. Licensing Options for RTLE Components

RTLE Component	Licensing Options
Replication Server	A SySAM served or unserved license obtained from the SPDC is required. Download Replication Server 15.7.1 SP100.
Replication Agent for Oracle	Obtain the Replication Agent license file from SPDC or SMP. Download Replication Agent 15.7.1 SP100. You can use Replication Agent only with Replication Server covered under the RTLE license.

Installation and Upgrade

Get the latest installation and upgrade information that may have been omitted from or incorrect in your installation guide or that needs special emphasis.

Replication Server Options Licenses

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

Replication Server Options, 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 one of the Replication Server Options, request another evaluation license from Sybase. Otherwise, generate your licenses at SPDC 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

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

1. Stop the Replication Agent instance if it is running.
2. Copy the Replication Agent 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.
3. Restart the Replication Agent instance.
4. Check the Replication Agent log file to verify that the Replication Agent instance has started successfully:
 - `$SYBASE/RAX-15_x/<instance_name>/log/<instance_name>.log` (UNIX or Linux)
 - `%SYBASE%\RAX-15_x\<instance_name>\log\<instance_name>.log` (Windows)

Installing Static Licenses for ECDA in RSO and RSHE

Install the static SySAM license files to use ECDA in Replication Server Option for Microsoft SQL Server and IBM DB2 UDB, and ECDA in RSHE.

1. Stop the ECDA instance if it is running.
2. Copy the ECDA 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 ECDA.

3. Restart the ECDA instance.
4. Check the ECDA instance log file to verify that the ECDA instance has started successfully:
 - `$SYBASE/DC-15_0/servers/<servername>/log/<servername>.log` (UNIX or Linux)
 - `%SYBASE%\DC-15_0\servers\<servername>\log\<servername>.log` (Windows)

where `$SYBASE` or `%SYBASE%` is where you installed ECDA.

Replication Agent Special Installation Instructions

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

See *Upgrading and Downgrading Replication Agent* in the *Replication Agent Primary Database Guide* to upgrade and downgrade 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 `vcredist_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.

ExpressConnect for Oracle Special Installation Instructions

ExpressConnect for Oracle 15.7.1 SP100 is installed with Replication Server 15.7.1 SP100. ExpressConnect for Oracle is not installed as a standalone product.

ExpressConnect for Oracle (ECO) does not include the Oracle client libraries, which are required to run ECO. You must download and install these libraries 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 *Installing Oracle Instant Client Libraries* in the *ExpressConnect for Oracle Configuration Guide*.

Known Issues

Review known issues and workarounds, listed by Change Request (CR) number.

For known issues concerning Enterprise Connect Data Access (ECDA), see:

- *Enterprise Connect Data Access Release Bulletin* for Microsoft Windows
- *Enterprise Connect Data Access Release Bulletin* for Linux and UNIX
- *Replication Server Release Bulletin* for your platform

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

Note: If you have a Sybase® support contract, 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.

If you have an SAP® support contract, use the Sybase xSearch to search for knowledge-based articles and solved cases. Go to the SAP Sybase Support Portal at <http://service.sap.com/sybase/support>, log in, and select **KBAs & Solved cases** to start the xSearch.

Key to issue types:

- **RTC** – SAP® Release to Customer tracking number.
- **CSN** – SAP Customer Services Network tracking number.
- **CR** – Sybase® Change Request number.
- **N/A** – No tracking number.

Known Issues for ExpressConnect for Oracle

Learn about known issues and workarounds for ExpressConnect for Oracle.

Table 8. Known Issues for ExpressConnect for Oracle

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>
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>

CR#	Description
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: Can't fetch or update row with ROWID for partition reference table. See the Oracle support Web site for patch information.</p> <p>Workaround: None.</p>

Known Issues for Replication Agent

Learn about known issues and workarounds.

Known Issues for the Replication Agent Installer

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

Table 9. Replication Agent Installer Issues

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 default host ID obtained from the lmutil lmhostid utility for the license server. Do not use subcapacity host IDs obtained from the sysamcap utility.</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>
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>

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 10. Issues for All Database Targets

CR#	Description
701683	<p>Migration may not complete although <code>ra_migrate</code> returns a success status if <code>pdb_auto_run_scripts</code> is not set to true.</p> <p>Workaround: Make sure <code>pdb_auto_run_scripts</code> is set to true before starting migration.</p> <p>To check:</p> <pre data-bbox="360 621 794 673">ra_config pdb_auto_run_scripts go</pre> <p>To change value:</p> <pre data-bbox="360 730 881 782">ra_config pdb_auto_run_scripts, true go</pre>
628568	<p>Replication Agent initialization may fail when tables are automatically marked for replication.</p> <p>The <code>pdb_xlog init</code> command may fail when <code>pdb_automark_tables</code> is set to true.</p> <p>Workaround: Set the <code>pdb_automark_tables</code> to false before you issue <code>pdb_xlog init</code>. You can set <code>pdb_automark_tables</code> 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 <code>agt_service.bat</code> to start, stop, remove, or install a Replication Agent instance.</p>

Known Issues for Oracle

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

Table 11. Replication Agent for Oracle Issues

CR#	Description
738928	<p>Replication Server does not include the <code>hds_oracle_new_setup_for_replicate.sql</code> script for the Oracle-to-Oracle database resynchronization.</p> <p>Workaround: Use the <i>Oracle-to-Oracle Database Resynchronization Script</i> on page 20 .</p>
738185	<p>Random rollbacks on index-ordered tables may fail to replicate.</p> <p>A random rollback executed in parallel on an index-ordered table may fail to replicate.</p> <p>Workaround: None.</p>
735422	<p>Replication failure for stored procedures with CHAR or NCHAR parameters</p> <p>Replication Agent for Oracle may fail to replicate stored procedures that have parameters of type CHAR or NCHAR.</p> <p>Workaround: If you manually create the replication definition in Replication Server for such a stored procedure, use <code>varchar</code> for parameters of type CHAR and NCHAR.</p>
732183	<p>Replication of update and delete operations on NUMBER data fail</p> <p>After direct load materialization, replication of update and delete operations on Oracle NUMBER data may fail if the NUMBER value is in a searchable column or is more than 36 digits in length.</p> <p>Workaround: For Oracle 11.2.0.3 on Linux, you can install an Oracle patch for p14020842. For other versions, there is no workaround.</p>
723789	<p>Resource file verification fails</p> <p>Verification of the resource file fails with this parameter setting:</p> <pre>pds_sa_useranme=SYS AS SYSDBA</pre> <p>Workaround: Do not use the SYSDBA role in <code>pds_sa_username</code>.</p>
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>

CR#	Description
722089	<p>Login to Oracle fails with pds_username and ddl_username 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>
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>
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> <pre>Could not mine or match a RAW LogMiner record for record <...Operation <UNSUPPORTED> ... SQL Redo <Un- supported> > from SCN [<xxx>, <xxx>].></pre> <p>Workaround: None.</p>

CR#	Description
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 data-bbox="400 475 834 574"> ra_config skip_lr_errors, true go resume go </pre> or, Upgrade to Oracle 11.1.0.7 or later.
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>
705702	<p>The DDL commands that SYS user executes are not filtered.</p> <p>Workaround: Add SYS user to DDL filters:</p> <pre data-bbox="360 973 825 1020"> pdb_setrepddl user, sys, disable go </pre>

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=rqavmrh1 OS_terminal= OS_process_id=31314 OS_program_name=dcoracle@rqavmrh1 (TNS V1-V3)>, User Name <QAMUSER>, Object ID <93318>, REL_FILE# <5>, DATA_BLK# <893>, DATA_OBJD#<93318>, Operation <UPDATE>, Op Code <3> Rollback <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 PARTITION BY HASH (<code>timestamp_col</code>). • Tables with <code>timestamp</code> columns as primary key or unique index.
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>
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
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 and recycle bin is enabled.</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_tabl</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>
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>

Oracle-to-Oracle Database Resynchronization Script

Use a maintenance user ID in the replicate Oracle to apply this script which replaces the **hds_oracle_new_setup_for_replicate.sql** script.

```
drop table rs_info;
commit;

create table rs_info (rskey varchar2 (20), rsval varchar2 (20));
commit;

insert into rs_info values ('charset_name', 'iso_1');
commit;

insert into rs_info values ('sortorder_name', 'bin_iso_1');
commit;

drop public synonym rs_lastcommit;
commit;

drop table rs_lastcommit;
commit;
```



```

create table rs_lastcommit(
    origin_number(8),origin_qid char(72 byte),
    secondary_qid char(72 byte),
    origin_time date,
    dest_commit_time date,
    conn_id number default 0);
commit;

grant all on rs_lastcommit to public;
commit;

create public synonym rs_lastcommit for rs_lastcommit;
commit;

CREATE OR REPLACE PROCEDURE RS_UPDATE_SEQUENCE
(
    SequenceName VARCHAR2,
    SequenceValue NUMBER,
    Increment NUMBER
)
AS
    CurrentID NUMBER;
    LastID NUMBER;
    SeqCursor INTEGER;
    SQLStmt VARCHAR2(1024);
    Result NUMBER;
BEGIN
    SQLStmt := 'SELECT ' || SequenceName || '.NEXTVAL FROM DUAL';
    SeqCursor := DBMS_SQL.OPEN_CURSOR;DBMS_SQL.PARSE(SeqCursor,
        SQLStmt,
        DBMS_SQL.NATIVE);
    DBMS_SQL.DEFINE_COLUMN(SeqCursor,
        1,
        LastID);
    Result := DBMS SQL.EXECUTE_AND_FETCH(SeqCursor);
    DBMS_SQL.COLUMN_VALUE(SeqCursor,1,CurrentID);
    LOOP
        IF ( Increment < 0 ) THEN
            EXIT WHEN CurrentID <= SequenceValue;
            EXIT WHEN CurrentID > LastID;
        ELSE
            EXIT WHEN CurrentID >= SequenceValue;
            EXIT WHEN CurrentID < LastID;
        END IF;
        LastID := CurrentID;
        Result := DBMS_SQL.EXECUTE_AND_FETCH(SeqCursor);
        DBMS_SQL.COLUMN_VALUE(SeqCursor,1,CurrentID);
    END LOOP;
    DBMS_SQL.CLOSE_CURSOR(SeqCursor);
END;
/

grant all on RS_UPDATE_SEQUENCE to public;
commit;

DROP sequence rs_ticket_seq;

```

Known Issues

```
CREATE sequence rs_ticket_seq;

Drop table rs_ticket_history;

CREATE TABLE rs_ticket_history (
  cnt numeric(8,0),
  h1 varchar(10),
  h2 varchar(10),
  h3 varchar(10),
  h4 varchar(50),
  pdb varchar(30),
  prs varchar(30),
  rrs varchar(30),
  rdb varchar(30),
  pdb_t varchar(128),
  exeC_t varchar(128),
  dist_t varchar(128),
  rsi_t varchar(128),
  dsi_t varchar(128),
  rdb_t varchar(128) default current_date,
  exeC_b numeric(22,0),
  rsi_b numeric(22,0),
  dsi_tnx numeric(22,0),
  dsi_cmd numeric(22,0),
  ticket varchar(1024),
  conn_id number NULL);

create unique index rs_ticket_idx on rs_ticket_history(cnt);

create or replace trigger rs_ticket_tri
before insert on rs_ticket_history for each row
begin
  if :new.cnt is null then
    select rs_ticket_seq.nextval into :new.cnt from dual;
  end if;
end rs_ticket_tri;
/

grant all on rs_ticket_history to public;
commit;

create or replace package RS_TRIGGER_CONTROL
as
  procedure ENABLE;
  function IS_ENABLED
    return boolean;
end;
/

create or replace package body RS_TRIGGER_CONTROL
as
  fire_trigger boolean := TRUE;
  function IS_ENABLED return boolean as
  begin
    if fire_trigger then
```

```

        return FALSE;
    else
        return TRUE;
    end if;
end IS_ENABLED;

procedure ENABLE
as
begin
    fire_trigger := FALSE;
end ENABLE;

procedure DISABLE
as
begin
    fire_trigger := TRUE;
end DISABLE;
end RS_TRIGGER_CONTROL;
/

grant all on rs_trigger_control to public;

drop public SYNONYM rs_trigger_control;

create public SYNONYM rs_trigger_control for rs_trigger_control;
commit;

CREATE OR REPLACE PROCEDURE rs_send_repserver_cmd(rs_api IN
VARCHAR2)
AS
    cmd VARCHAR2 (4000);
    plsql_block VARCHAR2(50);
    BEGIN
        if (instr(lower(rs_api), 'rs_rcl') > 0) then
            DBMS_OUTPUT.put_line('The Replication Server command
should not contain the keyword ''rs_rcl''');
            return;
        end if;
        cmd := 'rs_rcl ''' || replace(rs_api, '''', ''''''') || '''
rs_rcl';
        if ('rs_rcl' != substr(cmd, length(cmd) - 5)) then
            DBMS_OUTPUT.put_line('The Replication Server command is
too long. ');
            DBMS_OUTPUT.put_line('Please split it into two or more
commands');
            return;
        end if;
        plsql_block := 'begin rs_marker(:a); end;';
        EXECUTE IMMEDIATE plsql_block USING cmd;
    END;
/

drop public SYNONYM rs_send_repserver_cmd;

create public SYNONYM rs_send_repserver_cmd for

```

Known Issues

```
rs_send_repserver_cmd;  
commit;
```

Known Issues for Microsoft SQL Server

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

Table 12. Replication Agent for Microsoft SQL Server Issues

CR#	Description
738442	<p>Cannot downgrade Replication Agent for Microsoft SQL Server 15.7.1 SP100 after upgrading.</p> <p>Workaround: None.</p>
738326	<p>Data inconsistency with ltl_send_only_primary_keys enabled and custom function strings.</p> <p>If you have ltl_send_only_primary_keys set to true and are using custom function strings on table columns other than text or image columns, data in the replicate database may be inconsistent with data in the primary database.</p> <p>Workaround: Set ltl_send_only_primary_keys to false.</p>
737991	<p>WRITETEXT and UPDATETEXT are not supported.</p> <p>Replication Agent for Microsoft SQL Server does not support use of the Microsoft SQL Server WRITETEXT and UPDATETEXT statements. Data inserted or updated with these statements may therefore be replicated as null.</p> <p>Workaround: The WRITETEXT and UPDATETEXT have been deprecated as of Microsoft SQL Server 2005. Microsoft recommends using the large-value datatypes and the WRITE clause of the UPDATE statement instead.</p>
709113	<p>Cannot use a database replication definition and database subscription with dsi_alt_writetext set to dcany.</p> <p>Workaround: Use table replication definition and table subscriptions.</p>

CR#	Description
623810	<p>pdb_xlog init fails when Microsoft SQL Server 2008 is upgraded to the developer version.</p> <p>pdb_xlog init fails when a SQL Server instance is upgraded from Microsoft SQL Server 2008 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="400 539 975 743">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.

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="364 413 1180 487">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="364 510 1180 585">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="364 644 1180 690">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="364 749 1180 777">update table1 set id =4</pre> <p>The resulting update transaction results in the following logged commands:</p> <pre data-bbox="364 836 1180 1038">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
569586	<p>An error occurs when applying service patch.</p> <p>When you run the SQL Server 2008 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> <pre>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.</pre> <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 <i>ra_createtable_trig_</i> 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 <i>ra_ddl_trig_</i> is the DDL trigger created by Replication Agent.</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 13. Replication Agent for IBM DB2 UDB Issues

CR#	Description
740632	<p>Misleading error messages in the error log when connecting to an IBM DB2 database.</p> <p>When Replication Agent starts, you may see in the error log error messages such as:</p> <pre>ERROR com.sybase.ra.conn.drivers.UDBJDBCInfo Connection type UDBJDBC requires that a user name be configured.</pre> <p>If you set pds_username before other connectivity settings such as pds_host_name, Replication Agent produces the error messages on its initial attempt to connect to the primary database. The errors do not affect the running of the Replication Agent.</p> <p>Workaround: You can ignore the error messages.</p>

CR#	Description
737314	<p>Direct load materialization is not supported between tables with different names.</p> <p>Replication Server direct load materialization is not supported for replication definitions in which the primary table has been marked for replication with a replicate table name that is different than the primary table name.</p> <p>Workaround: None.</p>
700501	<p>Replication Agent for UDB now recommends using the IBM DB2 Universal Database JDBC driver for database connectivity.</p> <p>Workaround: Change the <code>pds_connection_type</code> value to UDBJDBC.</p> <hr/> <p>Note: Upgrade from an earlier release to 15.7.1 automatically changes the connection type to UDBJDBC.</p>

Known Issues for Enterprise Connect Data Access

Learn about known issues and workarounds for Enterprise Connect Data Access (ECDA).

CR#	Description
703935	<p>ECDA hangs when inserting image with dcany to Microsoft SQL.</p> <p>Workaround: Upgrade to ECDA 15.7.</p>

Document Updates and Clarifications

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

Obtaining ECO Static Licence

Correction to the location for obtaining the ECO Static license.

The text in *Obtaining ECO Static License* in the *ExpressConnect for Oracle Configuration Guide* incorrectly states that you can obtain the ECO license file from the Getting Started CD. Instead, you must obtain the ECO license file from SPDC or SMP.

ECDA Documentation Changes

Read about updates, corrections, and clarifications to released documentation for ECDA.

As of Replication Server Options 15.5, the ECDA Option for Oracle has been replaced by ExpressConnect for Oracle, though ECDA manuals continue to mention the ECDA Option for Oracle. For information on ExpressConnect for Oracle, see the *ExpressConnect for Oracle Configuration Guide* and the *Replication Server Options Overview Guide*.

No Support for Oracle to Oracle Reference Implementation

You cannot use the Reference Implementation for Oracle to Oracle Replication.

Disregard *Reference Implementation for Oracle to Oracle Replication* in the *Replication Server Heterogeneous Replication Guide*.

Support for Microsoft SQL Server 2012

Replication Agent supports replication from Microsoft SQL Server 2012 at the Microsoft SQL Server 2005 functional level.

Disregard *Support for Microsoft SQL Server 2012* in the *Replication Server Options 15.7.1 SP100 New Features Bulletin* which states that support is at the 2008 level.

To find the latest information about certifications:

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