

Release Bulletin Replication Agent™ 15.5 for Linux, Microsoft Windows, and UNIX

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1. Accessing current release bulletin information

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2. Product summary

This release bulletin provides late-breaking information about Replication Agent™ version 15.5. Replication Agent extends the capabilities of Replication Server® by allowing non-Sybase database servers to act as primary data servers in a replication system based on Sybase replication technology.

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

2.1 Compatible products

Table 1 lists the database server versions that Replication Agent 15.5 supports.

Table 1: Databases compatible with Replication Agent

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

Replication Agent requires a JDBC™ 3.0-compliant driver for the primary data server. Table 2 lists the JDBC driver versions required to support connectivity between Replication Agent and the primary data server.

Table 2: Drivers compatible with Replication Agent

Driver	Versions
Oracle JDBC driver	10.2 or 11.1 for JDK 1.4 and 1.5
Microsoft SQL Server JDBC driver	1.2
DB2 Universal Database Administration Client	9.1 and 9.5 (64-bit on all UNIX platforms; 32-bit on Linux and Windows platforms)

Replication Agent is compatible with the Sybase products listed in Table 3.

Table 3: Replication Agent 15.5 compatibility

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

3. Special installation instructions

This section documents additional installation requirements.

3.1 Visual C++ 2005 runtime components

When installing on Microsoft Windows, the Replication Agent 15.5 installation program requires components of the Microsoft Visual C++ 2005 libraries. When the Microsoft Visual C++ 2005 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 at <http://www.microsoft.com/downloads/details.aspx?FamilyID=200B2FD9-AE1A-4A14-984D-389C36F85647&displayLang=en>. Run *vcredist_x86.exe* to install the Visual C++ runtime components on Microsoft Windows 32-bit or 64-bit machines.

3.2 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 through the Replication Agent installation program has been configured to use IPv4. Sybase recommends that you maintain this configuration. If you must use IPv6, choose an unserved license to license Replication Agent.

4. Special upgrade and downgrade instructions

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

5. Known issues

This section describes known issues in Replication Agent 15.5 at the time of release. Most issues are identified with Change Request (CR) numbers to which you can refer when contacting Sybase Technical Support. Workarounds are provided where available.

The following issues are grouped by the database targets that they affect:

- Known issues for the Replication Agent installer
- Known issues for all database targets

- Known issues for Oracle
- Known issues for Microsoft SQL Server
- Known issues for IBM DB2 UDB

5.1 Known issues for the Replication Agent installer

This section describes known issues with the Replication Agent installer.

5.1.1 SySAM *Imgrd* daemon is not always installed

[CR #631310] The SySAM *Imgrd* daemon is not installed unless you provide a served license during installation.

Workaround: To install a SySAM server during the installation of Replication Agent 15.5, specify a served license.

To install a SySAM server without running the Replication Agent 15.5 installer, invoke the SySAM server installer directly from the *archives* directory of the Replication Agent 15.5 installation media:

- On Windows: *archives\sysam_server\setup.exe LAX_VM %JAVA_HOME%\bin\java.exe*
- On UNIX: *archives/sysam_server/setup.bin LAX_VM \$JAVA_HOME/bin/java*

Note If you do not have access to a Java installation, run the Replication Agent 15.5 installer and a suitable JRE will be installed. You can reference this JRE through the SYBASE_JRE6 environment variable.

5.1.2 Licenses directory is not always created

[CR #622349] When you install Replication Agent using an unserved license, *licenses*, the default license directory, is not created. Because Replication Agent does not have access to the license file, it uses the graced license, which expires after 30 days.

Workaround:

- Manually create the *licenses* directory in *\$SYBASE/SYSAM-2_0*.
- Copy the unserved license to the *licenses* directory.
- Restart Replication Agent.

5.1.3 Issues when installing using a served license

[CR #618407] 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.

Workaround: None.

5.1.4 Issues when reinstalling Replication Agent on IBM AIX

[CR #616338] 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.

Workaround: None.

5.1.5 SySAM Server and SySAM Utilities installation information not displayed

[CR #615072] 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.

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.

5.1.6 Replication Agent is installed with a served license even if a SySAM server is already running

[CR #614944] When installing in console mode on Windows Vista, the installation program allows you to install Replication Agent with a served license even if a SySAM server is already running. The correct behavior is for the installation program to stop the installation process with this error:

```
Error: The license key(s) you entered requires a Sybase
Software Asset Management (SySAM) license server. The
installer has detected a SySAM license server running
on this host. Only one SySAM server can be setup on a
system. You need to deploy the served-license key(s) to
the existing server.
```

Workaround: When installing Replication Agent in console mode on Windows Vista, change the compatibility mode of the console installer to Windows XP:

- 1 In Windows Explorer, right-click *setupConsole.exe*.
- 2 Select Properties.
- 3 On the Compatibility tab, select the Windows XP compatibility mode.
- 4 Launch the installation program using:

```
setupConsole.exe -i console
```

5.1.7 Available License Check window does not display correct database name

[CR #614742] 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:

```
Replication Agent for database_type, license not found
```

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.

Workaround: Ignore the message and ensure that you enter a valid license.

5.1.8 An extra console opens when installing Replication Agent on Windows Vista

[CR #609606] Installing Replication Agent in console mode on Windows Vista opens an extra console. Sybase recommends that you do not use this extra console.

Workaround: To suppress the extra console, deactivate User Account Control (UAC) before running the installation program:

- 1 Go to Control Panel | User Accounts | Turn User Account Control On or Off.
- 2 Uncheck “Use User Account Control (UAC) to help protect your computer.”
- 3 Reboot your machine.

5.1.9 Cannot view text fields properly when using Hummingbird Exceed from a Windows workstation

[CR #606761] 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.

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 *Replication Agent Installation Guide*.

5.1.10 Installation program cannot create installation directory on Microsoft Windows 2008

[CR #595614] 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.

Workaround: Create the installation directory before running the installation program.

5.1.11 Installer fails to launch when path to *setup.bin* contains “..”

[CR #595582] On UNIX and Linux platforms, the installer fails to launch if you specify a path to *setup.bin* that contains “..”.

Workaround: Ensure that the path to *setup.bin* does not contain “..”.

5.1.12 Uninstallation process stops responding

[CR #595573] The uninstallation program stops responding when you select Delete from the Delete User Files screen and then click Previous from the Uninstall Complete screen. Delete User Files and Uninstall Complete are the last two screens shown in the uninstallation program.

Workaround: Do not return to the Delete User Files screen after you have selected Delete.

5.1.13 Inaccurate disk space information

[CR #594586] The installation program displays inaccurate disk space requirement.

Workaround: Refer to the *Replication Agent Installation Guide* for the correct disk space requirement for your platform.

5.1.14 Installation program cannot uncompress the Replication Agent archive

[CR #593410] 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:

```
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.
```

Workaround: In the \$PATH environment variable, specify the operating system-supplied tar utility before the GNU tar utility.

5.1.15 “./setup.bin: !: not found” message appears when installing Replication Agent on Sun Solaris

[CR #579988] You see this error message when you install Replication Agent on Sun Solaris:

```
Preparing to install...
./setup.bin: !: not found
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...
```

Workaround: Ignore the message and continue.

5.2 Known issues for all database targets

This section describes known issues in Replication Agent 15.5 that are not specific to a particular environment or data server type.

5.2.1 Replication Agent initialization may fail when tables are automatically marked for replication

[CR #628568] The pdb_xlog init command may fail when pdb_automark_tables is set to true.

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.

5.2.2 Windows service instance of Replication Agent cannot connect to supported data servers

[CR #626165] A Microsoft Windows service instance of Replication Agent that has been created using the *agt_service.bat* or *magt_service.bat* script cannot connect to supported data servers even if you have already added the JDBC JAR file to the CLASSPATH environment variable.

Workaround: Ensure that the JDBC JAR file is loaded correctly by adding the JDBC JAR file in the RAX_LIBS environment variable found in *agt_service.bat* and *magt_service.bat*. For example:

```
RAX_LIBS=%JCONN_CLASSES%\jconn3.jar;%JCONN_CLASSES%\
jTDS3.jar;%JHOME%\lib\charsets.jar;%RAX_DIR%\classes\
sylapi.jar;%RAX_DIR%\classes\EccpressoFIPS.jar;
%RAX_DIR%\classes\EccpressoFIPSJca.jar;%RAX_DIR%\
classes\xstream.jar;E:\sybase\RAX-15_3\classes\
ojdbc14.jar
```

5.2.3 Limitation of running Replication Agent as a Windows service on a Microsoft Windows 64-bit platform

[CR #624714] Currently, you cannot use the Microsoft Windows Services utility to start, stop, remove, or install a Microsoft Windows service instance of Replication Agent.

Workaround: Use *agt_service.bat* or *magt_service.bat* to start, stop, remove, or install a Replication Agent instance.

5.2.4 Java Virtual Machine stops responding due to thread stack overflow

[CR #611175] When Replication Agent for an 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:

```
Pid xxxx was killed due to failure in writing to user
register stack - possible stack overflow.
```

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:

```
PTHREAD_DEFAULT_STACK_SIZE=2048000
export PTHREAD_DEFAULT_STACK_SIZE
```

5.2.5 Incorrect LTL generated

[CR# 583437] 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:

```
create table table1 (id int constraint PK_1 PRIMARY KEY
  CLUSTERED WITH FILLFACTOR=90 on myRangePS1(id),
  value1 varchar(8) null);

create table table2 (id int constraint FK_1 FOREIGN KEY
  REFERENCES table1(id) ON UPDATE CASCADE,
  value1 varchar(8) null);
```

Data is inserted into both tables:

```
insert into table1 values(3,'aaa');
insert into table2 values(3,'aaa');
```

The primary-key column of the first table is subsequently updated:

```
update table1 set id =4
```

The resulting update transaction results in the following logged commands:

```
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
```

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.

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.

5.2.6 Changes to the table replication definition in Replication Server 15.2 or earlier is not recognized by Replication Agent

[CR #545932] 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.

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.

5.2.7 IBM AIX licensing

[CR #545622] Replication Agent 15.2 and later on IBM AIX counts the total number of CPUs available to a partition. If you are running Replication Agent with logical partitions, Replication Agent on IBM AIX may fail to start and you may find that the number of CPUs reported is not as expected.

Workaround: Currently, Sybase Replication Agent does not support subcapacity licensing for IBM LPAR. If you believe that you may encounter this issue, contact Sybase Customer Support to raise a support incident.

5.2.8 Error while loading shared libraries when running on Red Hat Linux 5.0

You may be unable to start Replication Agent due to this error message:

```
Error while loading shared libraries.
```

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.

5.3 Known issues for Oracle

This section describes known issues in Replication Agent 15.5 that are specific to Oracle.

5.3.1 Oracle resynchronization limitation

[CR #630089] Replication Agent for Oracle does not support the resynchronization scenario described in section “Resynchronizing the active and standby databases in a warm standby application,” in Chapter 13, “Resynchronizing Oracle Replicate Databases,” of the *Replication Server Heterogeneous Replication Guide*.

Workaround: None.

5.3.2 Supplemental logging not enabled error

[CR #624026] 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 *Replication Agent Primary Database Guide* 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.

Workaround: Shut down and restart Replication Agent after you enable supplemental logging in the primary database.

5.3.3 Database resynchronization feature support

[CR #620157] Replication Agent cannot use the Replication Server 15.5 database resynchronization feature.

Workaround: To use the database resynchronization feature, install Replication Server 15.5 ESD #1.

5.3.4 RMAN utility reports incorrect number of deleted archive redo log files

[CR #619663] 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 is unable to find the word “Deleted.”

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:

- On Windows: `set nls_lang=american_america.zhs16gbk`

- On UNIX: `setenv NLS_LANG american_america.zhs16gbk`

5.3.5 Replication definition is not created when table owner is not specified

[CR #615023] 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.

Workaround: Specify a table owner in the `rs_create_repdef` syntax. For example:

```
rs_create_repdef qaxuser.qax_tab1
```

where `qaxuser` is the table owner.

5.3.6 LOB support limitation

[CR #613898] Replication Agent does not support the replication of partial updates to large object (LOB) columns. For example, use of the Oracle `DBMS_LOB.WRITE()` function, which updates LOB data from a specified offset, is not replicated.

Workaround: None.

5.3.7 Owner information is not supported in function replication definition for Oracle

[CR #596320] 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.

Workaround: For each stored procedure replicate from active to standby database, create a corresponding function string that specifies the owner information of the target stored procedure.

To alter the function string class of the standby connection to a customized function string class, which is inherited from `rs_oracle_function_class`:

```
alter connection to dco2stb.ordb (standby connection)
set function string class to my_oracle_function_class
go
```

5.3.8 Initialization failure when isolation level is set to *serializable* in an Oracle RAC environment

[CR #585513] In an Oracle Real Application Clusters (RAC) environment, Replication Agent 15.5 may fail during initialization when you set the isolation level to *serializable*. This failure is due to an internal Oracle error.

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.

5.3.9 Replication Agent fails with an error during table redefinition

[CR #562889] In Oracle 11g, during table redefinition, Replication Agent goes to ADMIN state with an `IteratorException` error. In Oracle 10g, after a table redefinition, all DML commands against the source table fail to replicate to the replicate site as Replication Agent sends an incorrect table name in LTL, which causes the DSI to go down.

Workaround: None.

5.3.10 *create table* DDL has limited support for UDD object types

[CR# 405207] Replication of a *create table* DDL command is not supported for tables with UDDs, when a UDD has a nested object type.

Workaround: Reinitialize the Replication Agent.

5.3.11 *alter type* DDL command has limited support

[CR# 405206] During replication of the *alter type* command, the type change does not propagate to the dependents of the type.

Workaround: Reinitialize the Replication Agent.

5.3.12 Disabling the *recyclebin* in Oracle 10.1

The Oracle “*recyclebin*” configuration property was not added until Oracle 10.2 and is available in Oracle 11g. To disable the recycle bin in Oracle 10.1, set the Oracle hidden property:

```
ALTER SYSTEM SET "_recyclebin"=FALSE SCOPE = BOTH;
```

5.4 Known issues for Microsoft SQL Server

This section describes known issues in Replication Agent 15.5 that are specific to Microsoft SQL Server.

5.4.1 *varchar(max)*, *nvarchar(max)*, and *varbinary(max)* can be replicated only to Microsoft SQL Server

[CR #570511] *varchar(max)*, *nvarchar(max)*, and *varbinary(max)* datatypes can be replicated only to Microsoft SQL Server databases.

Workaround: None.

5.4.2 An error occurs when applying service patch

[CR #569586] When you run the SQL Server 2005 service patch, the Replication Agent system tables `sys.sp_SybSetLogforLOBCol` and `sys.sp_SybSetLogforReplTable` are deleted from the resource database, triggering error 29537:

```
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.
```

Workaround: Before you apply the service patch, disable the database triggers that Replication Agent created:

- 1 Log in to the primary database.
- 2 Disable the automark trigger if it is enabled. For example:

```
DISABLE TRIGGER ra_createtable_trig_ ON DATABASE
```

where `ra_createtable_trig_` is the automark trigger created by Replication Agent.
- 3 Disable the data definition language (DDL) trigger. For example:

```
DISABLE TRIGGER ra_ddl_trig_ ON DATABASE
```

where `ra_ddl_trig_` is the DDL trigger created by Replication Agent.

5.4.3 *pdb_xlog init* fails when Microsoft SQL Server 2005 is upgraded to the developer version

[CR #623810] *pdb_xlog init* fails when a SQL Server instance is upgraded from Microsoft SQL Server 2005 standard version to the developer version. This is a limitation of Microsoft SQL Server—during SQL Server upgrading, the “Agent XPs” component is turned off, which prevents *pdb_xlog init* from succeeding.

Workaround:

- 1 Run these scripts using SQL Server Management Studio or SQLCMD to enable the SQL Server Agent extended stored procedures:

```
sp_configure 'show advanced options', 1;
GO
RECONFIGURE;
GO
sp_configure 'Agent XPs', 1;
GO
RECONFIGURE
GO
```

- 2 Run *pdb_xlog init* to reinitialize Replication Agent.

5.4.4 Microsoft SQL Server 2005 log error prevents LTL processing

[CR #493242] The partial update of varchar (max) or varbinary (max) with off-row storage cannot be replicated correctly due to a Microsoft SQL Server 2005 logging error. The LTL does not process the partial update.

Workaround: None.

5.4.5 Replication Agent instance fails to start after upgrading a version 15.0 on a UNIX platform to a Windows platform

[CR# 490356] When you upgrade a Replication Agent 15.0 instance to version 15.1 or later by migrating from a non-Microsoft Windows platform to a Microsoft Windows platform, the instance may encounter this error during start up:

```
Error setting logging directory for instance XXX
because: <Log directory <YYY> does not exist>.
```

Workaround: After upgrading the Replication Agent instance, edit its configuration file to modify the value of the `log_directory` parameter to point to the correct path of the Replication Agent instance log directory. By default, the log directory resides under the Replication Agent instance directory.

For example, change this line:

```
log_directory=/opt/Sybase/RAX-15_0/myra/log
```

to

```
log_directory=c\:\\sybase\\RAX-15_5\\myra\\log
```

Note On Microsoft Windows, include the double backslashes as shown in the example.

5.5 Known issues for IBM DB2 UDB

This section describes known issues in Replication Agent 15.5 that are specific to IBM DB2 Universal Database (UDB).

5.5.1 Error occurs if the library path contains two colons

For HP, if SHLIB_PATH contains two colons (::) with no intervening directory, you see this error message when you resume Replication Agent:

```
java.lang.NoClassDefFoundError
```

Workaround: Add a line to the `$SYBASE/RAX-15_5/bin/ra.sh` script to source your UDB instance's `db2profile` (which does not have the same problem as the `db2cshrc`). For example, if your UDB instance directory is `/home/db2inst1`, edit your Replication Agent script to add

```
/home/db2inst1/sqllib/db2profile:
```

```
elif [ $os = HP-UX ]
then
. /home/db2inst1/sqllib/db2profile
SRVR=-server
SHLIB_PATH=$ASA_LIB:$RAX_DIR/lib/hpux:$SHLIB_PATH
export SHLIB_PATH
```

6. Documentation updates and clarification

This section describes clarification on Replication Agent documentation.

6.1 Replication Agent 15.5 package does not include SyBooks CD

Replication Agent 15.5 does not include the SyBooks™ CD. To learn more about your product, use the Sybase Getting Started CD and the Sybase Product Manuals Web site. See “Other sources of information.”

6.2 Examining Replication Agent if a failure occurs

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

6.2.1 Obtain JVM thread dump

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

❖ **Obtaining a thread dump on a Windows machine:**

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

❖ **Obtaining a thread dump on a UNIX or Linux machine:**

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

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

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

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

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

- 2 Terminate the process with the `kill` command and `QUIT` option:

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

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

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

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

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

6.3 Marking procedures with predefined PL/SQL numeric datatypes

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

- BINARY_DOUBLE
- BINARY_FLOAT
- NUMBER

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

6.4 Required Replication Agent permissions

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

6.5 Correction to *pdb_xlog* example

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

```
pdb_xlog move_truncpt
```

6.6 *lr_max_op_queue_size* support clarification

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

7. Technical support

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you have any questions about this installation or if you need assistance during the installation process, ask the designated person to contact Sybase Technical Support or the Sybase subsidiary in your area.

8. Other sources of information

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

- The Getting Started CD is included with your software and contains release bulletins, installation guides in PDF format, and other documents or updated information. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.

You can also access the documents available on the Getting Started CD from the Sybase Product Manuals Web site.

- The Sybase Product Manuals Web site, which can be accessed using a standard Web browser, includes the Replication Agent documents that are not included in the Getting Started CD. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

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

8.1 Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ Finding the latest information on product certifications

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

❖ Finding the latest information on component certifications

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

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

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

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

8.2 Sybase EBFs and software maintenance

❖ Finding the latest information on EBFs and software maintenance

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

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

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

9. Accessibility features

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

Replication Agent 15.5 and the HTML documentation have been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

For a section 508 compliance statement for Replication Server Options, go to the Voluntary Product Assessment Template at http://www.sybase.com/detail_list?id=52484

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

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

