

Release Bulletin

Sybase® Replication Server® 15.1 for Microsoft Windows

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1. Accessing updated release bulletin

A more recent version of this release bulletin may be available on the Web. To check for critical product or document information added after the product release, use the Sybase® Product Manuals Web site.

❖ Accessing the release bulletin at the Sybase Product Manuals Web site

- 1 Go to Product manuals at <http://www.sybase.com/support/manuals/>.
- 2 Select a product and language and click Go.
- 3 Select a product version from the Document Set list.
- 4 Select the Release Bulletins link.
- 5 From the list of individual documents, select the link to the release bulletin for your platform. You can either download the PDF version or browse the document online.

2. Product summary

Enclosed is Sybase Replication Server® version 15.1, which is compatible with the following operating system configurations.

- Windows 2000 – Service Pack 4

- Windows 2003 – Service Pack 1
- Windows XP Pro – Service Pack 1
- Windows Vista Business – Service Pack 2

For a complete list of supported operating systems, see the Sybase Platform Certification Web site at <http://certification.sybase.com/ucr/search.do>.

2.1 Replication Server

For detailed information about new features in Replication Server 15.1, see *Replication Server New Features Guide*.

For information about administering Replication Server 15.1, see *Replication Server Administration Guide Volume 1*.

2.2 Replication Manager

Replication Manager, a plug-in to Sybase Central™, Java Edition, is a component of Replication Server 15.0 and later. For details about the new features in Replication Manager 15.1, see *Replication Server New Features Guide*.

Note Replication Manager 15.1 is available as a separate program.

For information about commands used to manage replication, see *Replication Server Reference Manual*.

2.3 Replication Monitoring Services

Replication Monitoring Services (RMS) is a component of Replication Server 15.0 and later. The RMS layer is a middle-management layer that monitors large and complex replication environments. For detailed information about RMS, see *Replication Server New Features Guide* and *Replication Server Administration Guide Volume 1*.

2.4 Support for Internet Protocol version 6

Replication Server on Microsoft Windows 32-bit and Microsoft Windows Vista supports IPv6.

2.5 Separately licensed features

To purchase licensed options, contact your Sybase sales representative.

2.5.1 Sybase LAN Replication Agent and Enterprise Connect Data Access

Sybase LAN Replication Agent™ and Enterprise Connect™ Data Access are available as a product called Replication Server Options. You must have Replication Server to obtain Replication Server Options.

Replication Server Options provides bidirectional replication across distributed, heterogeneous systems.

Replication Server Options is compatible with the same operating system configurations with which Enterprise Connect Data Access 15.0 and Sybase Replication Agent 15.1 are compatible. See the documentation for Enterprise Connect Data Access 15.0 and Sybase Replication Agent 15.1.

Replication Server Options is available in three data-source-specific versions: Microsoft, Oracle, and IBM DB2 UDB.

Each version contains an Adaptive Server® and an emergency bug fix (EBF) for jConnect™ for JDBC™.

3. Special installation instructions

This section includes special installation instructions that are not in the installation guide for your operating system.

3.1 Selecting an installation directory for Replication Server

Consider carefully whether to install Replication Server in its own product directory or in a directory with other Sybase products. *Do not* install Replication Server 15.1 in an existing Sybase installation directory if that directory contains any of these Sybase products:

- Replication Server version 12.5 or earlier
- Adaptive Server version 12.5.0.x or earlier
- Open Client/Server™ version 12.5.0 or earlier
- OpenSwitch™ version 12.5 or earlier

- DirectConnect™ version 12.5 or earlier

Warning! Installing Replication Server 15.1 along with any of the products listed above disables the older versions of these products. You cannot reverse these effects by uninstalling Replication Server 15.1.

3.1.1 Installing Replication Server in an existing directory

Installing Replication Server 15.1 in an existing directory that contains other Sybase products might result in Replication Server and the other Sybase products not working correctly. Before you install Replication Server in an existing directory, consider these points:

- You can install Replication Server 15.1 in an existing Sybase installation directory if that directory contains Adaptive Server® Enterprise 15.0.2 or Open Client/Server version 15.0. If you have newer versions of the *locales* or *charset* files, the installation program prompts you to specify whether to install older *locales* or *charset* files on top of newer files. To ensure that you have the latest version of these files, select “No to all.”
- Replication Server 15.1 includes a new version of Replication Server and supporting components. Other Sybase products installed on your system might contain earlier versions of the same components. Installing Replication Server 15.1 in the directory that contains other Sybase products does not impact the Sybase products.

However, if you are using other Sybase products, installing Replication Server 15.1 can cause some environment variables to change. Reset the environment variables to make the individual products work. For information about setting environment variables, see the *Replication Server Installation Guide* for your operating system.

Note You can install Replication Server 15.1 in the same directory as Adaptive Server Enterprise and Open Client/Server versions 12.5.1 or later.

- If you install Replication Server 15.1 on a system that has Replication Server 15.0.1, Replication Server version 15.1 replaces version 15.0.1. If you require version 15.0.1, create a copy of the Replication Server 15.0.1 directory and subdirectories before installing version 15.1.

- You can install Replication Server 15.1 on top of Replication Server 12.6 or later in the same *%SYBASE%* directory. Installing version 15.1 on top of Replication Server 12.6 or later creates a duplicate entry in the *sql.ini* file for *SAMPLE_RS*, which is the sample Replication Server. *rs_init* warns you about the duplicate entry and uses the first instance of *SAMPLE_RS* found in the *sql.ini* file.
- If you have installed Replication Server 15.1 and Replication Server 12.6 or later in the same directory, Sybase recommends that you do not uninstall either version from this common directory.

Note When you uninstall Replication Server version 15.1, or version 12.6 or later, the uninstallation program prompts you to specify whether you want to delete files that have been modified since installation. Select “No to all.”

3.1.2 Installing Replication Server in a unique directory

Warning! Installing Replication Server in a unique directory might reset environment variables for other Sybase products and produce unpredictable results.

To install Replication Server in a separate installation directory:

- 1 Terminate all Sybase processes running on the system on which you are installing Replication Server, including SySAM.

Note If you do not know which processes are running on the system, see the system administrator.

To stop SySAM:

- a Go to *%SYBASE%\%SYBASE_SYSAM%\bin*.
 - b Run *sysam stop*.
- 2 If you have an existing Adaptive Server that runs as a Windows service, disable the service:
 - a Click Start | Control Panel | Services.
 - b Double-click Administrative Tools.

- c In the Services window, right-click the Adaptive Server service, shown as Sybase SQLServer servername in the Services list.
 - d Select Properties.
 - e Set Startup Type to Disabled.
 - f Close the Services window.
- 3 Record the current environment variable settings by running the following command:

```
set > env.orig
```

This command saves the environment variables in a file called *env.orig*. You can read this file with a text editor.

Specifically, record the current values of:

 - INCLUDE
 - LIB
 - LM_LICENSE_FILE
 - PATH
 - SYBASE
 - SYBASE_JRE
- 4 Insert the Replication Server product CD into the CD drive.
- 5 Install Replication Server 15.1 as described in the *Replication Server Installation Guide for Windows*.
- 6 Specify a unique directory for the Replication Server product.
- 7 Click No when prompted to register a Sybase Software Asset Management Certificate.
- 8 Click Yes when asked, “Have you registered your Sybase Software Asset Management Certificates at a central license host?”
- 9 Specify the host name and port number of the license server.
- 10 Change the environment variables to the original settings that you recorded in step 3:
 - a Go to Start | Settings | Control Panel | System.
 - b Click the Advanced tab.
 - c Select Environment Variables.

- d Under System Variables, change the values of the variables listed in step 3.
- 11 Configure Adaptive Server to start automatically:
 - a Go to Start | Settings | Control Panel | Administrative Tools | Services.
 - b Right-click the Adaptive Server service shown as Sybase SQLServer *servername* in the Services list.
 - c Click Properties.
 - d Set Startup Type to Automatic.
 - 12 Restart your system.

Note When you install Replication Server in a unique installation directory, you must maintain two *sql.ini* files. One *sql.ini* file is required for Replication Server components and another for your other Sybase applications.

3.2 Updating SySAM license server

Replication Server 15.1 is linked with FLEXnet Publisher version 10.8.5 for Windows 32-bit. If you use a SySAM license server, it is required that you update the license server to at least this version before installing Replication Server 15.1. You can check the version information of your license server by examining the license server log or executing the following command:

```
cd %SYBASE%\SYSAM-2_0\bin
lmutil lmver lmgrd
```

3.3 Coexisting with older versions of SySAM

Replication Server version 15.1 uses a newer version of Sybase Software Asset Management System (SySAM) and an updated license format. You can run only one instance of a license server on a computer. To use earlier versions of Sybase products with Replication Server 15.1, you must modify SySAM. See Appendix F, “Migrating the License Server from SySAM 1.0 to SySAM 2.0” in *Sybase Software Asset Management Users Guide*.

3.4 Other sources of installation information

For installation and configuration information other than what the Replication Server 15.1 release bulletin provides, see:

- *Replication Server Installation Guide for Windows*. This guide contains instructions for installing Replication Server version 15.1.

If you are using Adaptive Server Enterprise, see the sections of *Adaptive Server Enterprise Installation Guide for Windows* that are related to using Replication Server and upgrading replicated databases.
- *Replication Server Configuration Guide for Windows*. This guide contains general information about installing Replication Server and instructions for using the `rs_init` file to configure Replication Server.

If you are using Adaptive Server Enterprise older than version 11.5, see the corresponding installation and configuration documentation for information about upgrading replicated databases.

4. Special upgrade and downgrade instructions

Replication Server Configuration Guide for Windows contains detailed upgrade and downgrade instructions. Sybase strongly recommends that you read this information before you upgrade or downgrade Replication Server. This section provides special upgrade and downgrade instructions for Replication Server version 15.1.

Warning! Before upgrading the user database to support Replication Server 15.1, upgrade Adaptive Server Enterprise to version 12.5 or later. Otherwise, the upgrade fails.

4.1 Preparing to upgrade

The Replication Server version must be 12.0 or later and the Adaptive Server containing the RSSD must be 12.5 or later. Upgrading from any earlier version requires an intermediate upgrade.

4.2 Using enhanced monitors and counters

To use enhanced monitors and counters, perform the following steps.

❖ Using enhanced monitors and counters

1 Load this script into the RSSD after upgrading to Replication Server 15.1:

```
%SYBASE%\%SYBASE_REP%\scripts\rs_install_statreport_v1510_[ase|asa].sql
```

- 2 Run the `rs_stat_populate` and `rs_stat_genreport` stored procedures to produce the following information:
 - Replication Server performance overview, such as DIST processing, DSI processing, and so on.
 - Replication Server performance analysis and tuning suggestions based on the critical Replication Server counters.

4.3 Upgrading route versions

If you have a primary Replication Server version 12.0 or 12.1 that you plan to upgrade to version 15.1, and you have a replicate Replication Server that has already been upgraded to version 15.1, use the Upgrade Route option in Replication Manager instead of the `rs_fast_route_upgrade` stored procedure to upgrade the related route to the replicate Replication Server.

❖ Upgrading the route version in Replication Manager

- 1 In Replication Manager, right-click the Replication Server object containing the route to be upgraded.
- 2 Select Upgrade Route.
- 3 Select the route to upgrade.
- 4 Select Upgrade.

Between the site version of your primary Replication Server and the site version of your replicate Replication Server, a route version should reflect the lower value. For example, if the site version of your primary Replication Server is 12.1 and the site version of your replicate Replication Server is 12.0, the route version should be 1200.

However, the version of `rs_fast_route_upgrade` provided in Replication Server version 12.1 and earlier erroneously sets the route version to the higher value. Therefore, the earlier version of `rs_fast_route_upgrade` automatically upgrades the route version to 1510 even if your primary Replication Server has not been upgraded to version 15.1.

If such behavior applies to your replication system and you are upgrading to Replication Server version 15.1, the upgrade script stops and notifies you to fix the route version before upgrading to version 15.1.

4.4 Updating Log Transfer Language version

When the RepAgent connects to the Replication Server, a Log Transfer Language (LTL) version is returned.

When you upgrade to Replication Server version 15.1, the RepAgents are still connected to Replication Server using the older negotiated LTL version. Restart the RepAgents to use the new LTL version.

5. New and modified functionality

For detailed descriptions of new features and functionality in Replication Server 15.1, see *Replication Server New Features Guide*.

6. Known problems

This section describes known problems in Replication Server version 15.1 and workarounds where available. These problems are marked with the corresponding Change Request (CR) numbers. Mention the appropriate CR number when you contact Sybase Technical Support regarding Replication Server issues.

6.1 Problem report location

This section identifies problem reports locations.

Replication Server

Reports on open and fixed problems for Replication Server are in *%SYBASE%\%SYBASE_REP%\install\spr*. These files contain problem reports for Replication Server version 15.1:

- *spr_rs* – reports on open problems
- *cpr_rs* – reports on closed problems

Replication Monitoring Services

Reports on open and fixed problems in Replication Monitoring Services (RMS), which interfaces with Replication Manager, are in *%SYBASE%\UAF-2_0\plugins\com.sybase.rms\install\SPR*. These files contain the problem reports for RMS:

- *spr_rms* – reports on open problems
- *cpr_rms* – reports on closed problems

6.2 Replication Server problems

This section describes problems identified in Replication Server 15.1.

6.2.1 Parallel DSI threads may cause deadlock with Adaptive Server

[CR #452806] An application deadlock involving Replication Server and Adaptive Server may occur when Replication Server is configured to use parallel DSI while applying transactions to a table containing text and image columns.

Workaround: Suspend and resume the DSI connection. If the DSI thread does not suspend, restart the Replication Server.

6.2.2 Replication Server does not preprocess table names qualified with database name

[CR #332068] When you use the Adaptive Server plug-in to issue data definition language (DDL), the plug-in uses a fully qualified identifier in the DDL. If you use multisite availability (MSA) to replicate this DDL, and the replicate database does not have the same name as the primary database, MSA cannot apply the DDL, and Data Server Interface is suspended.

Workaround: Do not use the Adaptive Server plug-in for Sybase Central to create tables for use in this environment, and do not use fully qualified table names when using MSA to replicate DDL.

6.2.3 Decimal with exponent incorrectly translated

[CR #233839] When using a user-defined datatype that defines a decimal type, if the decimal data contains an exponent, when replicating that column to a column of integer type, it may be incorrectly translated. For example, 5.62E3 translates to 6 instead of 5620.

6.2.4 DSI shuts down

[CR #215616] Replication Server reports an error and the DSI shuts down when:

- A transaction involving the update of text columns is replicated.
- One table with text columns has multiple replication definitions.
- Replication definitions are subscribed to by multiple tables in the same replicate database.

6.2.5 Memory used by Open Client/Server not tracked by Replication Server

[CR #206951] Replication Server uses a public-domain memory-allocation implementation that does not track the additional amount of memory used by Open Client™ and Open Server™. Replication Server exceeds the amount of memory specified by the memory limit configuration value before shutting down due to excessive memory usage.

6.2.6 *delete* command for multiple rows may not replicate correctly

[CR #203009] A delete command that affects multiple rows at the primary database may not replicate successfully at the replicate database if the primary database contains self-referential foreign-key constraints.

Workaround: Use any one of the following:

- Use stored procedure replication.
- Drop the constraint on the replicate table.
- Do not use bulk deletes on tables with self-referential foreign-key constraints.

6.2.7 Cannot start Replication Server without -S flag

[CR #65722] You cannot use the DSLISTEN environment variable to specify the Replication Server name. Replication Server stops responding after printing “Contacting the idserver for a siteid.”

Workaround: Specify the Replication Server name with the -S flag from the repsrvr.exe command line.

6.3 Sybase Central problem

This section describes a problem identified in Sybase Central.

6.3.1 Users must have write privileges to home directory

[CR #343973] Sybase Central writes a registry file in the user’s home directory, and uses this registry file to store environment information from the Replication Manager. You must have write privileges on the user’s home directory, or Sybase Central cannot save the environment information.

Workaround: Ensure that each user has write privileges on the user’s home directory.

6.4 Replication Manager problems

This section documents problems identified in Replication Manager.

6.4.1 Uninstalling Replication Manager 15.1 removes *jconn3.jar*

[CR #531426] In environments that include Replication Manager 15.1 and ASEP 15.0.2, uninstalling Replication Manager can remove the *jconn3.jar* file. As a result, ASEP may not function correctly.

Workaround: Remove the *jconn3.jar* file from the `%SYBASE%\shared\lib` directory before uninstalling Replication Manager. After uninstallation, place the file back in the `%SYBASE%\shared\lib` directory.

❖ **Removing and recopying the *jconn3.jar* file**

- 1 Copy the *jconn3.jar* file from the `%SYBASE%\shared\lib` directory.
- 2 Paste the *jconn3.jar* file in any other location.
- 3 Rename the *jconn3.jar* file as *jconn3.jar.sav*.
- 4 After you uninstall Replication Manager, copy the *jconn3.jar.sav* file to the `%SYBASE%\shared\lib` directory.
- 5 Rename *jconn3.jar.sav* as *jconn3.jar*.

6.4.2 Uninstallation does not consistently remove files

[CR #532965] The uninstallation process may not remove the same files on different operating systems due to inconsistencies in InstallShield.

6.4.3 Replication Manager installer does not warn when installing in an existing directory or when the target directory does not exist

[CR #532570] The Replication Manager 15.1 installation program does not display a warning when installing in an existing directory. However, the installation program displays a warning if an earlier version of Replication Manager is installed in the installation directory. Also, the installation program does not display a confirmation message to create a new directory if the target installation directory does not exist.

6.4.4 Uninstallation may not remove *uninstall_RMP.bin*

[CR #531606] The uninstallation process may not remove *uninstall_RMP.bin* when Replication Manager is installed in a multiple Sybase product environment. After such uninstallation, running *uninstall_RMP.bin* produces no results.

6.4.5 Online help may not appear in Chinese language environment

[CR #530692] Replication Manager online help may not appear when running in the Chinese language environment, that is, when you set LANG=zh_CN.UTF8 or zh_CN.gbk or zh_CN.gb18030, and so on.

6.4.6 Incorrect datatypes returned when using *pdb_get_columns*

[CR #494701] When you run the *pdb_get_columns* command, incorrect datatypes are returned for varchar(max), nvarchar(max), and varbinary(max) datatypes.

Workaround: Ensure that the replication agents in your replication environment are version 15.1 ESD #1.

6.4.7 Replication Manager does not display parameters for non-Sybase stored procedures

[CR #454375] If the interface server is a Replication Agent or a mirror Replication Agent from a version earlier than 12.6 ESD #6, Replication Manager does not display the parameters for non-Sybase stored procedures in the stored procedure Properties dialog and the Create Function Replication Definition window.

Workaround: Upgrade the Replication Agent or mirror Replication Agent to version 12.6 ESD #6 or to version 15.0.

6.4.8 Replication Manager may not accurately reflect status in a three-tier environment

[CR #418128] When the Adaptive Server in a three-tier management environment is in a SUSPECT state, it is not reflected in the Tree view and Details view of Replication Manager. In the Properties window of the Details view, the status of the Adaptive Server appears as ACTIVE.

6.4.9 Replication Manager does not report reason for a secondary RMS in a SUSPECT state

[CR #418026] When you add a secondary RMS under a primary RMS, and the secondary RMS status is reported as SUSPECT, Replication Manager does not immediately report any information in the Reason column of the List view or in the Details pane of the suspect RMS.

Workaround:

- In the Details pane, right-click the suspect RMS and select Properties. The reason for the SUSPECT state displays.
- Close the Details pane, wait for the duration of the monitoring interval, then return to the Details pane. The Reason column is now populated with information. The default monitoring interval is 60 seconds.

6.4.10 Status not updated when monitoring is enabled

[CR #402702] When you enable monitoring in Replication Manager, the status of active and standby logical connections is not updated automatically in the Details pane of the Sybase Central window.

Workaround: From the Sybase Central main menu, select either View | Refresh Folder or View | Refresh All.

6.4.11 Owner and password cannot be specified when creating subscriptions

[CR #386456] When you create a subscription, Replication Manager does not allow you to specify a login and password. You must use the same “sa” login and password that Replication Manager uses for adding servers to the replication environment.

If you are using atomic materialization, the “sa” login and password must be the same as that used on the Adaptive Server data server. Otherwise, atomic materialization does not work. This restriction does not apply when you create a database subscription, because a database subscription does not include the atomic materialization option.

Workaround: Use the same “sa” login and password for creating subscriptions in RM that you use for adding servers, and that you use for the Adaptive Server.

6.4.12 Configure Replication wizard may not work under certain circumstances

[CR #371403] Using the Configure Replication wizard to set up a replicate database where the primary database is an existing warm-standby logical connection does not result in a working replication environment.

Workaround: Use Replication Manager to create each individual component in the replication environment such as the connection, the database replication definition, and the database subscription.

6.4.13 Unregister Replication Manager after uninstallation

[CR #337408] The uninstallation process for Replication Manager does not unregister Replication Manager from Sybase Central. When you log in to Sybase Central and unregister Replication Manager, Sybase Central displays an error when you restart your computer that says Sybase Central cannot find Replication Manager.

Workaround: Restart Sybase Central and unregister Replication Manager.

6.5 RMS problems

This section documents problems identified in RMS.

6.5.1 RMS server status information does not appear correctly

[CR #500312] When an RMS server is active and connected, Replication Manager retrieves the server status information correctly. However, even when the replication agent is not running, the Replication Manager Services status icon appears active. The Properties menu indicates that the connection to the Replication Manager Services server is not active. The status icons in the Replication Manager environment continue to indicate that the RMS server is active.

When you restart RMS, the Replication Manager Services icon still indicates the active status. Additionally, the Properties menu indicates that the connection is not active even after you refresh the connection.

Workaround: To view correct information about the RMS server status, disconnect and reconnect the server.

6.5.2 RMS cannot start RepAgent if *sp_addserver* is not running on Adaptive Server

[CR #404196] RMS cannot start RepAgent if you have not defined the name of the Adaptive Server using *sp_addserver*.

Workaround: Before you use RMS to start RepAgent, run *sp_addserver* on Adaptive Server to define the name of the local server:

```
sp_addserver pds01, local
```

where *pds01* is the name of the Adaptive Server on which you want to run RepAgent and *local* is the class parameter value, since the Adaptive Server is the local server. See Chapter 1, “System Procedures,” in the *Adaptive Server Reference Manual: Procedures* for more information about *sp_addserver*.

6.6 Highlighted *rs_init* problems

This section documents problems identified in the Replication Server configuration utility *rs_init*.

6.6.1 *rs_init* radio buttons appear as text fields with mixed-language message

[CR #277765] If you use a non-English version of Windows, the following occurs when you use a non-English version of *rs_init* with an English-language version of Replication Server version 15.0:

- Some Yes/No radio buttons appear incorrectly as text-editable fields.
- Some text in the *rs_init* window appears in English.

This problem does not affect the functionality of *rs_init*.

Workaround:

- 1 Type “yes” or “no” in the native language when prompted. For example in French, type “oui” or “non.”
- 2 Use the English-language version of *rs_init*.

6.6.2 *rs_init* does not update *sql.ini* file automatically

[CR #171729] When attempting to add a Replication Server entry to the *sql.ini* file through *rs_init* using a *resource* file, a message displays indicating that the *sql.ini* file has been updated. However, the file is not updated, and Replication Server does not start.

Workaround: Create the entry in the *sql.ini* file manually before using *rs_init* with the *resource* file.

6.6.3 *rs_init* does not correct run files

[CR #79366] *rs_init* does not correct previously generated *run* files as part of upgrades and downgrades.

Workaround: Edit the *run* files manually.

6.6.4 Incompatible character set specification using *rs_init*

[CR #68642] *rs_init* does not prevent you from creating a configuration file using an *RS_charset* parameter that is incompatible with the character set defined in the *CONFIG_charset* parameter. For example, if the configuration file defines an English character set but the *CONFIG_charset* parameter is set to a Japanese character set, the installation proceeds but behaves unpredictably.

Workaround: Use compatible character sets.

6.6.5 Limitation of reading entries from the *sql.ini* file

The *rs_init* utility uses a 20KB buffer to read server entries from the *sql.ini* file. If the average length of server entries is 10 bytes, the *rs_init* utility cannot read more than 2000 server entries.

6.7 Unsupported operations

These Adaptive Server operations may cause incorrect replication:

- Using *truncate table* on a primary table does not truncate replicated tables because the operation is not logged.
- Disabling the secondary truncation point with *dbcc settrunc* and then truncating the log can cause lost transactions.
- Replication Server does not support nested transactions within replicated stored procedures.

When you enable replication for a stored procedure using *sp_setreproc* or *sp_setreplicate*, Adaptive Server always runs the stored procedure within a transaction. If you have not explicitly run the replicated stored procedure within a transaction, Adaptive Server places an implicit *begin* transaction command at the start of the procedure.

If the replicated stored procedure contains nested transaction commands such as begin transaction, commit transaction, or rollback transaction, you might get errors when you run the procedure. For example, a rollback transaction command rolls back to the start of the stored procedure, rather than to the nested begin transaction command, which was the intended rollback point.

- Data that is inserted into a primary table using an unlogged bulk copy operation is not replicated.
- In a database, you cannot replicate multiple tables that have the same name but different owners. For example, if a database contains two tables `dbo.authors` and `user3.authors`, Replication Server distributes only one of them.
- Sybase recommends that you make the database owner own all tables in the primary database, and that you make the database owner or maintenance user own all tables in the replicate database. If the database owner or maintenance user does not own the table in the replicate database, use user-defined function strings for insert, update, and delete operations.
- To use the atomic method of subscription materialization:
 - The user who enters the create subscription command or the database owner must own the primary table. Alternatively, you must use user-defined function strings for select operations at the primary database.
 - If the database owner or maintenance user does not own the replicate table, use user-defined function strings for select operations at the replicate database. If the owner of the replicate table is different from the owner of the primary table, create a unique function string by using a distinct function-string class.
- Ensure that client applications do not update primary key columns in multiple rows of a replicated table such that a key duplicates the key of another row. Such duplication might cause errors in the replicate database.

For example, if `pcol` is the primary key for the `reptbl` table, this command might cause errors or incorrect data in the replicate database:

```
update reptbl
  set pcol = pcol + 1
```

This table shows before and after values for `pcol` at the primary database if `reptbl` has three rows with `pcol` values 1, 2, and 3.

Before	After
1	2
2	3
3	4

RepAgent retrieves the log records and submits the records to Replication Server using commands equivalent to:

```
update reptbl
  set pcol = 2 where pcol = 1
update reptbl
  set pcol = 3 where pcol = 2
update reptbl
  set pcol = 4 where pcol = 3
```

Replication Server treats each row as an independent update, so the first row is updated three times and the second row is updated twice. If there is a unique index on the table, the additional updates cause errors in the replicate databases. If there is no unique index on the replicate table, duplicate rows result as shown below.

Before	After
1	4
2	4
3	4

7. Product compatibility

This section contains information about products that are compatible with Replication Server version 15.1.

7.1 Adaptive Server

Replication Server version 15.1 is fully compatible with both 32-bit and 64-bit versions of Adaptive Server Enterprise version 12.5 and later.

A replication system can include Adaptive Servers, Replication Servers, DirectConnect products, and RepAgents on multiple operating systems.

Note SQL Server versions 11.0.x and Adaptive Server 12.0.1 and earlier are no longer supported.

7.2 Interoperability of Adaptive Server, Open Client/Server, and Replication Server

Table 1 shows the interoperability of Adaptive Server, Open Client/Server products, and Replication Server across versions.

Table 1: Interoperability between Adaptive Server, Open Client/Server, and Replication Server

Operating systems	Adaptive Server 15.0.x	Adaptive Server 12.5.1	Open Client/Server 15.0	Open Client/Server 12.5.1	Replication Server 15.0.x	Replication Server 12.6	Replication Server 15.1
HP-UX 11.11 and 11.23	Y	Y	Y	Y	Y	Y	Y
HP Itanium (HP-UX 11.23 or later)	Y	Y	Y	Y	Y	Y	Y
IBM RS/6000 AIX 5.2, 5.3, 6.1	Y	Y	Y	Y	Y	Y	Y
Linux Red Hat 3.0, 5.0	Y	Y	Y	Y	Y	Y	Y
Sun Solaris 8, 9, and 10	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows 2000, 2003, XP, Vista	Y	Y	Y	Y	Y	Y	Y

Legend

Y = compatible

Even though two or more products may be interoperable, features introduced in a newer version of a product are not likely to be supported by older versions of the same products.

For the latest information on the interoperability of these products and other compatibility reports, see the Interoperability Matrix Technote at <http://www.sybase.com/detail?id=1026087>.

8. Documentation updates and clarifications

This section contains updates and clarifications to Replication Server and Replication Manager documentation.

8.1 Replication Server Administration Guide

The following note belongs in “MSA mixed-version” in the “Overview” in Chapter 12, “Managing Replicated Objects Using Multisite Availability” in *Replication Server Administration Guide Volume 1*:

Note To create a database subscription from a primary replication server with version 15.0, the replicate replication server must be version 15.0 or later.

8.2 Replication Server Reference Manual

The configuration parameter that points to the location of the stored backup files mentioned in Table 3-21 of *Replication Server Reference Manual* is `erssd_backup_dir`, not `erssd_backup_path`.

8.3 Replication Manager online help

In the "Preparing to manage a replication environment" topic, add `$SYBASE/RMP-15_x/lib/callback.jar` as a separate bullet point after `$SYBASE/RMP-15_x/lib/ldap.jar`.

9. Language and globalization issues

This section describes language and globalization issues for Replication Server.

9.1 Hankaku Katakana conversion

In general, Japanese character sets are compatible. However, Hankaku Katakana characters, although they exist in both the `ucjis` and `sjis` character sets, cannot be converted. Converting data that contains Hankaku Katakana characters between `ucjis` and `sjis` does not work. This conversion problem occurs with character datatypes and the `text` datatype and is documented in Chapter 20, “Configuring Client/Server Character Set Conversions,” of the *Adaptive Server Enterprise System Administration Guide*.

This conversion problem affects both Adaptive Server and the Sybase Open Client/Open Server libraries. Because Replication Server uses these libraries for all conversions, this problem also affects Replication Server.

In Replication Server, this type of failure is treated in the same way as is the case of a single character missing from the target character set. The remainder of the conversion succeeds and replication proceeds, and problem characters are replaced by question marks in the target data area. There is currently no way to escape this restriction with the Sybase connectivity libraries. However, in Adaptive Server, if you turn on trace flag number 2402, you can remove this restriction.

9.1.1 Using trace flag 2402

Generally, Sybase recommends that you set up your replication system so that Replication Server handles all character set conversions at the replicate Replication Server and prevents the replicate data server from performing any conversions. In this case, you can work around the Hankaku Katakana restriction if you set up your system so that the replicate data server performs the conversion.

The following table shows how this might look if the primary data server used the `sjis` character set and the replicate data server used `ucjis`. Communication in this system is between each data server and its Replication Server and between the two Replication Servers.

Primary Replication Server	<code>sjis</code>
Replicate Replication Server	<code>sjis</code>
Primary data server	<code>sjis</code>
Replicate data server	<code>ucjis</code>

The primary and replicate Replication Servers are configured to use the same character set as the primary data server. (If only one Replication Server manages the primary and replicate data servers, configure it with the character set of the primary data server.)

In this configuration, when the replicate Replication Server connects to the replicate data server with character set sjis, the replicate data server detects this condition and converts data into its own character set, eucjis. If trace flag 2402 is activated in the replicate data server, then the conversion includes the Hankaku Katakana characters.

❖ **Setting up this workaround**

- 1 Configure your system as suggested.
- 2 Turn on trace flag 2402 in the replicate data server (Adaptive Server) by including `-T2402` on the command line when you start Adaptive Server.

9.2 Changing default date format for a language

If you modify the *common.loc* file to change the default date format for a given language, make the corresponding change to the `syslanguages` table on all affected Adaptive Servers.

10. 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.

11. Other sources of information

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

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

- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.

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

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

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

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

11.1 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 operating system 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.

11.2 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.

12. 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 Server 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.

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.