Installation and Release Bulletin Sybase Real-Time Data Services 4.0

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1. Accessing current bulletin information

A more recent version of this installation 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 release bulletins at the Sybase Product Manuals Web site**

1   Go to Product Manuals at http://www.sybase.com/support/manuals/.

2   Follow the links to the appropriate Sybase product.

3   Select the Release Bulletins link.

4   Select the Sybase product version from the Release Bulletins list.

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. Overview

Sybase Real-Time Data Services (RTDS) provide a way to capture transactions (data changes) in an Adaptive Server® Enterprise database and deliver them as events to external applications in real time. These data changes—or events—are delivered to applications through a Java Messaging Service message bus such as TIBCO Enterprise Message System (EMS), EAServer Java Messaging Service (JMS), or IBM WebSphere MQ.

Note You can exchange messages between TIBCO EMS and TIBCO Rendezvous Server by using the built-in TIBCO connection bridge.

The Java messaging service for TIBCO EMS and EAServer are both referred to in this document as JMS unless discussing TIBCO or EAServer specifically.

There are two ways to use the components in the RTDS product bundle:

•   Using Adaptive Server Enterprise, with a licensed feature that provides messaging-services capability

•   Using RepConnector™, along with Replication Server™

2.1 Using RTDS with Adaptive Server Enterprise

You can use Adaptive Server Enterprise to:

•   Publish any user-defined messages to the TIBCO EMS, EAServer JMS, or MQ messaging system

•   Subscribe to (consume) events from the TIBCO EMS, EAServer JMS, or MQ messaging system

Using RTDS, applications can use Adaptive Server Enterprise directly, taking advantage of Transact-SQL® functions to publish and subscribe messages.

You can use RTDS with Adaptive Server Enterprise for:

•   New applications written on either Adaptive Server versions 12.5.4 ESD #3 or 15.0.1 ESD #1 – allows messaging services to be build into the application within transactions

•   Legacy applications, with Adaptive Server upgraded to either versions 12.5.4 ESD #3 or 15.0.1 ESD #1

To do so, install Adaptive Server Enterprise version 12.5.4 ESD #3 or 15.0.1 ESD #1 with messaging services functionality and one of the following software components:

•   EAServer JMS version 5.2 – included with RepConnector 15.0.

> **Note** Real-Time Data Services version 4.0 on Adaptive Server Enterprise version 12.5.4 ESD #3 does not support EAServer JMS.

•   TIBCO EMS Message Bus system version 4.2 – Adaptive Server does not include TIBCO EMS Message Bus system; obtain the software separately and obtain the license from TIBCO. For more information, and to obtain TIBCO software, see the TIBCO Web site at http://www.tibco.com.

•   MQ messaging system version 5.3 – Adaptive Server does not include IBM WebSphere MQ; obtain the software separately and obtain the license from IBM. For more information, and to obtain MQ dynamic load libraries, see the IBM WebSphere MQ Web site at http://www-306.ibm.com/software/integration/wmq/.

> **Warning!** Real-Time Data Service version 4.0 is not certified on Adaptive Server version 15.0.2 or later. If you have RTDS 4.0 and you upgrade Adaptive Server to version 15.0.2, 15.0.2 ESD#1, or 15.0.2 ESD#2, RTDS messaging stops. To use the RTDS feature, upgrade to RTDS 4.5.

Using Replication Server

You can publish database events from Adaptive Servers earlier than versions 12.5.4 ESD #3 and 15.0.1 ESD #1 to the JMS or MQ messages by using Replication Server.

Figure 1 shows this setup, where Adaptive Server acts as an event hub for heterogeneous applications, with Replication Server delivering events through Adaptive Server.

Figure 1: Using Adaptive Server as an event hub
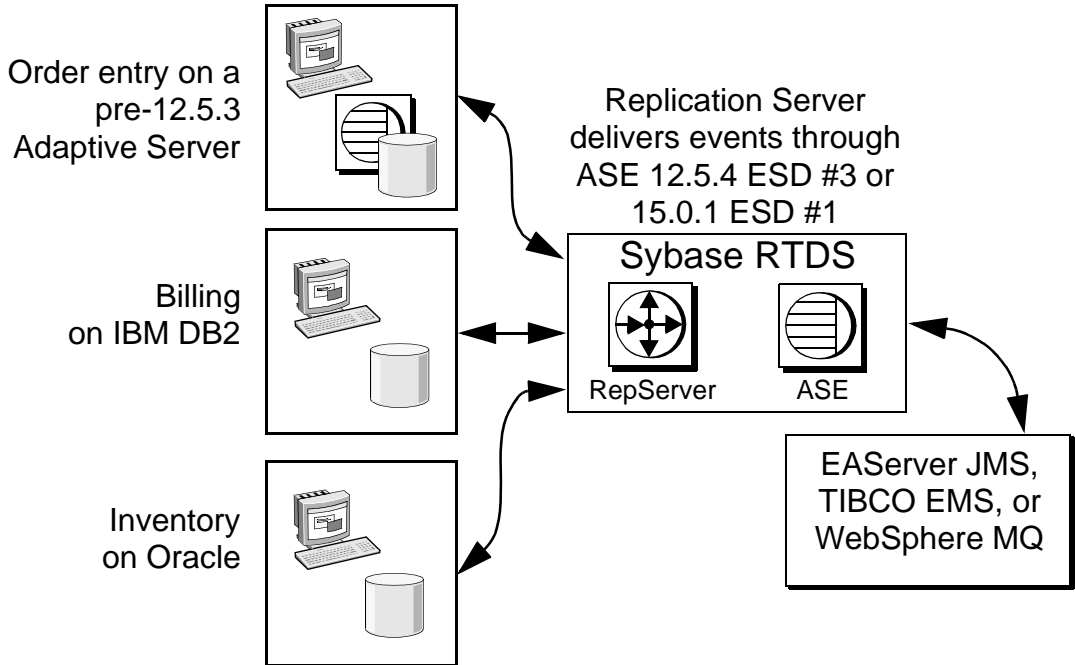
Use this setup to install Replication Server, which is provided in the RTDS product bundle. In this setup:

• Replication Agents for different RDBMs publish data changes to Replication Server.

• Replication Server, through the use of replication function strings, can transform, then call the appropriate Adaptive Server messaging function for Adaptive Server to publish the message to the message bus.

2.2 Using RTDS with RepConnector

You can use RepConnector to publish database events from Adaptive Server and other databases such as Oracle 9.x, and so on, to popular messaging systems such as TIBCO EMS, EAServer JMS, and IBM Websphere MQ.

Note RepConnector is not available HP-UX 64-bit.

In the setup shown in Figure 2, transactions are captured through Replication Server, and delivered as events through RepConnector.

Figure 2: Using RTDS with RepConnector

Order entry on a
pre-12.5.4
Adaptive Server

Billing
on IBM DB2

Inventory
on Oracle

Replication Server
delivers events through
RepConnector

Sybase RTDS

RepServer　RepConnector

EMS
bus
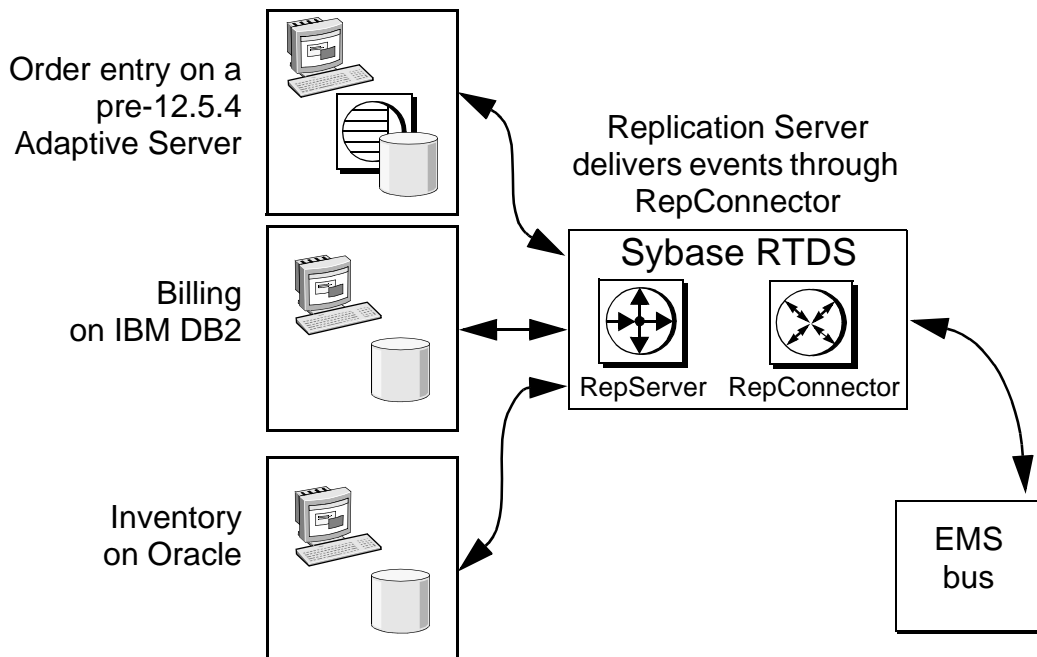
To use RepConnector, install the following software components from the product bundle:

- Replication Server

- RepConnector

- EAServer

The rest of this document is structured along these two setups, using RTDS with either Adaptive Server, or with RepConnector.

3. Product summary

Enclosed is Real-Time Data Services version 4.0, which contains the following software components:

- Replication Server version 15.0.

- RepConnector version 15.0.1, including EAServer version 5.2 in one of these platforms:

    - HP-UX 64-bit

- IBM AIX 64-bit

- Solaris 32-bit and 64-bit

- Linux 32-bit

- Windows 32-bit

The EAServer SySAM license certificate, which you need when you install EAServer, is included with your copy of EAServer.See "Pre-installation tasks for SySAM" on page 12 for instructions on how to use SySAM.

- Adaptive Server Enterprise interface libraries.

Note Adaptive Server Messaging Interface Dynamic Libraries require Adaptive Server Enterprise version 12.5.4.

3.1 EAServer EBF

Warning! An issue stemming from a bug in the Sun JDK version 1.4.2 on UNIX and Linux platforms can expose passwords used in various scenarios to at risk of being discovered.

EAServer Manager allows users to see connection caches, via a dialogue box, which have passwords in them. Under normal circumstances these passwords cannot be seen, however due to a security issue in Sun's JDK 1.4.2, a user with guest permission to EAServer Manager can discover the password stored in a connection cache. This password could then be used to gain unauthorized access to a protected database. EAServer 5.2 and 5.3, and products that embed them, are affected by this issue. In order to exploit this issue with an EAServer connection cache a user has to have a valid login for EAServer Manager. This includes the guest login.

Download and install the appropriate Sybase EBF files listed in Table 1 to addresses this problem.

Table 1: EBF numbers for EAServer and RTDS

Product	Version	Platform	EAS version	EBF no.
EAServer	5.2	Solaris	N/A	13238
EAServer	5.2	Linux	N/A	13507
EAServer	5.2	AIX	N/A	13508
EAServer	5.2	HP-UX	N/A	13509

To use the messaging services feature of Adaptive Server, you must install EAServer JMS, TIBCO EMS, or IBM MQ on your machine.

For detailed information on the features and functions of messaging services, see the *Messaging Services User's Guide for Adaptive Server Enterprise*.

3.2 Platforms

Real-Time Data Services is compatible with the following platform and operating system configurations:

• HP-UX (PA-RISC) 11.2 64-bit

> **Note** RepConnector is not available on HP-UX 64-bit.

• IBM RISC System/6000 AIX 5.1 64-bit and higher
• Linux 2.4 kernel 2.4.6 and higher, glibc 2.2.4 and higher

> **Note** RepConnector is available only on Linux 3.0.

• Solaris 2.8 32-bit and higher
• Solaris 2.8 64-bit and higher
• Windows XP Pro, 2000, and 2003

If your operating system requires patches, install them before you install Real-Time Data Services.

Contact your operating system provider for any patches recommended for your installation. Do not use a patch that is earlier than the version suggested for your operating system. Use the patch recommended by the operating system vendor, even if it supersedes the patch listed.

3.2.1 IBM WebSphere MQ family SupportPac files

Download SupportPac files for MQ version 5.3 from the IBM WebSphere MQ family SupportPacs Web page at http://www-306.ibm.com/software/integration/support/supportpacs/, making sure they contain the most recent Cumulative Service Distribution (CSD) for the SupportPac. See Table 2 for the correct version for your platform.

Table 2: SupportPac versions required by Adaptive Server

Platform	SupportPac name
Solaris 64-bit	MACY
Solaris 32-bit	MACR
HPUX 64-bit	MACZ
IBM RISC System/6000 AIX 64-bit	MACS
Linux 32-bit	MACU
All platforms	MA0C

After you download and install the SupportPac, Sybase recommends that you run some of the sample programs included with the SupportPac to make sure that the installation was successful.

3.3 Documentation

Real-Time Data Services includes the following documentation:

- *Installation and Release Bulletin for Real-Time Data Services version 4.0* (this document)

- *Messaging Services User's Guide for Adaptive Server Enterprise*

In addition, the Sybase Technical Library CD includes all the necessary documentation for the products that are included with Real-Time Data Services, such as RepConnector and EAServer. A list of related and referenced documentation is also available in the preface of the *Messaging Services User's Guide for Adaptive Server Enterprise*. Go to the Product Manuals at http://www.sybase.com/support/manuals/ for their most recent versions.

4. Installing Real-Time Data Services

This section discusses how to install Real-Time Data Services with a system using Adaptive Server Enterprise. To install Real-Time Data services with a system using RepConnector, see "Installing RTDS using RepConnector" on page 31.

To install Adaptive Server Enterprise, follow the instructions in the Adaptive Server Enterprise installation guide for your platform. Include the messaging license that RTDS requires during your Adaptive Server installation:

*   EAServer JMS – ASE_MESSAGING_EASJMS

*   TIBCO EMS – ASE_MESSAGING_TIBJMS

*   IBM Websphere MQ – ASE_MESSAGING_IBMMQ

Note You must install Adaptive Server before you can configure RTDS.

For information on how to install:

*   EAServer and its Java messaging service – see the EAServer documentation.

*   TIBCO Enterprise Message System – see the TIBCO Web site at http://www.tibco.com.

*   IBM WebSphere MQ – see the IBM WebSphere MQ Web site at http://www-306.ibm.com/software/integration/wmq/.

Once you have installed Adaptive Server and TIBCO EMS, EAServer, or MQ, see "Adding an RTDS license for Adaptive Server Enterprise version 15.01 ESD #1" on page 11.

Files on the installation CD

RTDS 4.0 installs the following files into the *$SYBASE/$SYBASE_ASE/lib* directory (*%SYBASE%\%SYBASE_ASE%\bin* in Windows):

*   *javax.jms.jar* – JMS only

*   *jms.jar* – JMS only

*   *jrtms.jar* – JMS only

*   *libshmemrtds.so* (*shmemertds.dll* on Windows, *libshmemrtds.sl* on HP-UX) – JMS only

*   *libsybibmmq.so* (*sybibmmq.dll* on Windows, *libsybibmmq.sl* on HP-UX) – MQ only

*   *log4j-1.2.4.jar* – JMS only

*   *rtms.properties* – JMS only; the file specifies properties for using real-time messaging services with Adaptive Server version 15.0.1 ESD #1, and is automatically added during the installation process

4.1 Adding an RTDS license for Adaptive Server Enterprise version 12.5.4

Install Adaptive Server version 12.5.4 ESD #3 according to the instructions in the Adaptive Server Enterprise installation guide for your platform.

Note Use the Sybase License Certificate that you received with Real-Time Data Services to complete this section.

Follow these steps if you did not specify the Adaptive Server messaging feature license in SySAM during your Adaptive Server installation:

1   Source *SYBASE.csh*.

2   Go to *$SYBASE/SYSAM-1_0/bin* (*%SYBASE%\SYSAM-1_0\bin* on Windows) on Windows and run lmgr. The lmgr program prompts, "Do you have any Sybase Software Asset Management Certificates to register?"

    Click Yes.

3   Enter information from the Sybase Software Asset Management Certificate for each Adaptive Server feature you have purchased. Entries are case-sensitive:

    a   Order Number – your Sybase order number

    b   Feature Name – "SY_RTDS"

    c   Feature Unit – "CPU License"

    d   Feature Count – "1"

    e   Software Version – "2.0"

    f   Authorization Code – your license key for the purchased feature

    The lmgr program records the information for the current feature in the license file and prompts you to enter information for an additional feature.

4   After entering the license key information, lmgr automatically stops and then restarts the license daemon.

4.2 Adding an RTDS license for Adaptive Server Enterprise version 15.01 ESD #1

Install Adaptive Server version 15.0.1 ESD #1 according to the instructions in the Adaptive Server Enterprise installation guide for your platform.

Real-Time Data Services version 4.0 includes a new Sybase Software Asset Management System (SySAM) implementation. SySAM configuration is no longer optional, which results in installation and configuration changes.

Warning! You can only use the Sybase License Certificate enclosed with your copy of Real-Time Data Services with Adaptive Server version 12.5.4 ESD #3. Do not use the certificate if you are using Adaptive Server 15.0.1 ESD #1.

SySAM product licensing software allows you to:

• Manage Real-Time Data Services entitlements

• Perform asset management tasks by viewing and analyzing historic use data

• Control Real-Time Data Services use within your organization

Your product package option includes the SY_RTDS license key for Real-Time Data Services version 4.0. Use this key for version 4.0 of Real-Time Data Services.

For detailed instructions on how to use SySAM 2.0, see the *Sybase Software Asset Management User's Guide version 2.0*.

4.2.1 Pre-installation tasks for SySAM

Before you install Adaptive Server, you should:

1   Decide which of these the SySAM license models to use:

   • The unserved license model – gets licenses directly from the license file. If you are using an unserved license, you should simply save the license to the machine on which you have installed RTDS.

   • The served license model – uses a license server to manage the allocation of your licenses to multiple machines. See the following steps for more information.

   For information about served and unserved licenses, and which model is best suited for your environment, see Chapter 2, "Choosing a License Model" in the *Sybase Software Asset Management User's Guide version 2.0*.

2   If you plan to use a served license, you need a license server. Decide whether it will be an existing license server or a new license server. The license server need not be on the same machine or running on the same operating system and architecture.

- To use an existing license server, you must know the server host name and port number.

- To create a new license server before installing RTDS, see "Installing a new license server" on page 18.

Note You can only have one instance of a SySAM license server running on a given machine. To set up a SySAM 2.0 license server on a machine that is already running a SySAM 1.0 license server, you must migrate the old license server to 2.0. A migrated license server can serve licenses for products enabled for both SySAM 1.0 and 2.0.

Please see Appendix F of the *Sybase Software Asset Management User's Guide version 2.0* for instructions on migrating a license server.

For information about:

- Choosing a license server host, see the "Choosing a license server host" section in Chapter 2, "Choosing a License Model" of the *Sybase Software Asset Management User's Guide version 2.0.*

- License server administration, see Chapter 4, "License Server Administration" in the *Sybase Software Asset Management User's Guide version 2.0.*

3 Sybase recommends that you get your license files from the Sybase Product Download Center (SPDC) at https://sybase.subscribenet.com before you begin installing RTDS. For information about accessing SPDC, see "Accessing SPDC" on page 13, and for information about generating your licenses at SPDC, see "Generating licenses for served and unserved license models at SPDC" on page 15.

❖ **Accessing SPDC**

Once you have purchased a Sybase product, typically you are expected to download the product and generate its licenses from the online Web portal, the Sybase Product Download Center (SPDC).

To access SPDC when you have purchased Sybase products from Sybase:

1 Once you have ordered a Sybase product, you receive a welcome e-mail that contains a URL to the SPDC site, as well as a user name and password.

Note If you have purchased your Sybase software from a Sybase reseller, you receive a Web key rather than an e-mail.

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2   Click on the URL, and when prompted, enter the designated user name and password. Your login is typically your e-mail address. If you have forgotten your password, use the password finder on the SPDC login page.

❖   **Getting your host ID**

1   Change your *bin* subdirectory:

- On Windows – change to *%SYBASE%\%SYBASE_SYSAM%\bin*, where:

    - *%SYBASE%* – is the Sybase installation directory

    - *%SYBASE_SYSAM%* – is *SYSAM-2_0*.

- On UNIX – change to *$SYBASE/$SYBASE_SYSAM/bin*, where:

    - *$SYBASE* is the Sybase installation directory

    - *$SYBASE_SYSAM* is *$SYSAM-2_0*

    You can enter the command *hostid* from a command prompt.

2   Obtain your host ID:

- On HP-UX, IBM and Solaris, enter "`./lmutil lmhostid`"

- On Windows and Linux, enter "`lmutil lmhostid`"

Note On some platforms, the host ID is derived from the network adapter address. If your machine has multiple network adapters, lmutil lmhostid returns one host ID for each network adapter. The output may look similar to:

```
The FLEXlm host ID of this machine
is ""0013023c8251 0015c507ea90""
Only use ONE from the list of hostids.
```

Choose **one** of these host IDs. Sybase recommends using the value associated with the primary wired Ethernet adapter. Do not use values associated with internal loop back adapters. If you cannot determine which host ID to use from the lmutil lmhostid output, use the native operating system command to get additional details to help make the determination. See to the SPDC FAQ titled "What's my Host ID," or "Appendix A" of the *FLEXnet Licensing End User Guide* for the exact commands for your platform.

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3   Save the host ID so you can use it later at SPDC. Your host ID is platform-specific, but may be similar to the following:

- On IBM AIX platforms – `02765131`

- On HP-UX PA-RISC platforms – `778DA450` or `#2005771344`

- On Linux platforms – `00400516E525`

- On Solaris platforms – `170a3472`

- On Windows platforms – `00B0A9DF9A32`

❖ **Generating licenses for served and unserved license models at SPDC**

To generate your license, regardless of license model:

1 At the Welcome screen at SPDC, where you can view all of the product families to which you have access, select the product family that contains the product for which you wish to generate a license.

2 When a list of available Sybase products displays, click the product with the appropriate edition and version. Make sure you select the product for the operating system you are using.

3 The license agreement displays. You must agree to the terms and conditions in the license in order to generate a license. To do so, click I Agree.

> **Note** The license agreement only displays the first time you attempt to download a product. Once you have agreed to the license, you will not encounter the license agreement for all subsequent downloads of that product.

4 At the product download page, click the License Keys link.

5 The License Information page displays. Select the license you wish to generate. When you are selecting the license you wish to generate, consider:

- The license **type** for the license you wish to generate. For more information about license types, see the "License types" in Chapter 3 "Getting and Using your License" of the *Sybase Software Asset Management User's Guide*.

- If you are unsure what you have licensed, your company's purchase order should have the product name, edition, and license type.

6 Once you've determined the license you wish to generate, select it via the Generate radio button on the left side of the screen. Scroll to the bottom of the page, and click Select to Generate.

7   Step one of the SySAM license generation wizard asks you to choose between a served license and an unserved license. If you choose a served license, continue with the steps in "Generating a served license" on page 16, and if you choose an unserved license, continue with the steps in "Generating an unserved license" on page 17.

Note Some Sybase products or specific license types do not give you a choice of license model to use, and therefore do not display this page. If this is the case, proceed with the SySAM license generation wizard to generate your license.

❖   **Generating a served license**

To generate a served license:

1   Select Served License and click Next.

2   Indicate the quantity of licenses you wish to generate and click Next.

3   Enter the License Server Host ID, and optionally, the host name and port number:

   •   Sybase recommends that you provide the host name here to ease future license administration.

   •   A port number is not required unless you are using a 3-node redundant cluster. A valid number is any unused port number between 0 and 64000. On UNIX, choose a port greater than 1024, since those less than 1024 are privileged port numbers. If no TCP/IP port number is specified, one of the default ports in the range of 27000 and 27009 is used.

   •   If you want to generate a license for a 3-node redundant cluster, then you must specify the host ID, host name, and port number for the three nodes of the cluster. The port number is not optional for this configuration and should be outside of the 27,000 to 27,009 range.

   •   For information about how to get the host ID, see "Getting your host ID" on page 14. You can specify redundant server information if you choose to configure your servers for three-server redundancy.

4   Click Generate.

5   Once you have generated the license, you can:

   •   Click Download License File to download the license file

   •   Click Print Friendly to print a paper copy of the license

- Return to the license information page to generate additional licenses.

6   Once you have generated all the licenses you need, save them to the *licenses* directory in your license server installation.

> **Note** SySAM 2.0 requires that you save your license files with a *.lic* extension.

Sybase recommends that you set up the license server and required licenses before you install your SySAM 2.0-enabled Sybase product.

❖   **Generating an unserved license**

To generate an unserved license:

1   Select Un-served License and click Next.

2   Select the number of machines you want to license and click Next. You can generate licenses for up to 10 machines at a time.

3   Enter the host ID, and optionally, the host name for each machine for which you want to generate a license. For information on getting your host ID and host name, see "Getting your host ID" on page 14.

   For some license types, you are asked to enter the number of CPUs or licenses for the machine where this license will be used.

4   Click Generate.

5   Once you have generated the license, you can:

- Download the license file by clicking the Download License File button

- Print a paper copy of the license by clicking the Print Friendly button

- Return to the license information page to generate additional licenses

6   Once you have generated all the licenses you need, save them to the specific location required by your product.

> **Note** SySAM 2.0 requires that you save your license files with a *.lic* extension.

❖ **Installing a new license server**

Perform the following steps to install a new license server.

Note If you have selected a served license model, you must install a license server.

---

1   On HP-UX – mount the CD:

```
mount -F cdfs -o ro,rr <CDROM device> /cdrom
```

2   Install the license server:

a   On Windows – insert the CD into the CD drive. The Installer should start automatically. If it does not, start the setup program manually by selecting Start | Run. Browse to *setup.exe*.

b   Launch the Sybase installer program:

On UNIX:

```
./setup
```

On Windows:

```
X:\setup
```

c   The Welcome Window displays. Click Next.

d   Accept the license agreement.

e   Enter or select the destination directory.

f   Select the Custom installation.

g   Select only "SySAM Network License Server" for installation.

h   Deselect other components, to install the license server only.

i   Click OK for the installer to install the license server.

Note You cannot start the license server until there is at least one valid served license installed in the *licenses* directory.

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3   Get the host ID for the machine on which you plan to run the license server. For information on how to generate the host ID, see "Getting your host ID" on page 14.

4   Go to the Sybase Product Download Center (SPDC) at https://sybase.subscribenet.com.

5   Generate the licenses for the products you want to install. For instructions on generating your licenses, see "Generating licenses for served and unserved license models at SPDC" on page 15.

6   Copy the license file in the licenses directory on the network license server machine:

On UNIX – *$SYBASE/$SYBASE_SYSAM/licenses*

On Windows – *%SYBASE%\%SYBASE_SYSAM%\licenses*

7   Refresh or restart the license server:

a   Change to:

On Unix – *$SYBASE/$SYBASE_SYSAM/bin*

On Windows – *%SYBASE%\%SYBASE_SYSAM%\bin*

b   If the license server is not already started, start it by entering:

```
sysam start
```

If the license server is already started, use the reread command to make the license server read the new license files:

```
sysam reread
```

8   Validate that the license daemon is running by entering:

```
sysam status
```

On Windows, you can expect to see output for a running server that is similar to:

```
> sysam start

Starting the SYSAM service
The SYSAM service is starting.
The SYSAM service was started successfully.
```

On UNIX, you can expect to see output for a running server that is similar to:

```
lmutil - Copyright (c) 1989-2006 Macrovision Europe
Ltd. and/or Macrovision Corporation. All Rights
Reserved. Flexible License Manager status on Wed
5/24/2006 15:04

License server status: 27000@mysysamserver
License file(s) on keyserver:
/opt/sybase/SYSAM_0/licenses/mysysamserver_60302031
5.lic
```

For information about served and unserved licenses, and which model is best suited for your environment, see Chapter 2, "Choosing a License Model" in the *Sybase Software Asset Management User's Guide*.

4.3 Installing RTDS using InstallShield

InstallShield copies the RTDS interface libraries for the current platform into *$SYBASE/$SYBASE_ASE/lib* (*%SYBASE%\%SYBASE_ASE%\bin* on Windows).

At the end of the installation, you can verify the product installation. You may need to perform additional configuration procedures before you can use Real-Time Data Services.

❖ **Installing Real-Time Data Services**

1   On Windows – log in to your Windows computer using an account with Windows administrator privileges.

Free system resources and release any Sybase DLLs by closing any open applications or utilities, including currently installed Sybase products or the SySAM Manager.

Warning! If any Sybase executables or DLLs are loaded into memory, and the installation program tries to overwrite any of the files that are in use, the installation program may generate an error and provide an error log.

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2   Insert the Sybase Real-Time Data Services CD in the CD drive.

- On Windows – InstallShield should start automatically. If it does not, select Start | Run, and enter the following, where *X:* is your drive:

      `X:\setup.exe`

    Click OK.

- On UNIX – mount the CD, then go to the CD directory and enter:

      `./setup`

    The UNIX install script starts.

3   When the license selection displays, select your location from the drop-down list, read the license terms, click "I agree," then click Next.

Not every country is listed in the drop-down list. If your country is not listed, select the most appropriate location.

4   InstallShield asks for the directory you want to install the product to. Usually this is the current SYBASE release.

   •   If you have defined the $SYBASE environment variable (%SYBASE% on Windows) – its value becomes the installation directory where Real-Time Data Services and any other Sybase-required components are automatically installed. The Install Directory window does not display.

       Click Next.

   •   If you have **not** defined the $SYBASE environment variable (%SYBASE% on Windows) – the Install Directory window opens. The directory you enter becomes the $SYBASE environment variable.

       Enter an installation directory, then click Next.

5   After you enter the location for installation of RTDS, the installer searches for a valid installation of Adaptive Server with the most recent installation.

   If the installer finds a valid installation, you see RTDS as an option in the installation dialog, with the check box unmarked.

   Make your selections, then click Next.

6   The Product Selection Summary window displays the components selected for installation. Verify that you selected the correct type of installation and have enough disk space to complete the process.

   Click Next to continue.

7   The Install Progress window shows the installation's progress. When the installation finishes, click Next.

8   Click Finish.

4.4 Creating a properties file for Adaptive Server Enterprise version 12.5.4

Before starting your RTDS installation for Adaptive Server Enterprise version 12.5.4 ESD #3, use one of these methods to create a file called *rtms.properties* to store your RTDS configuration information:

•   Use the sp_msgadmin 'config', 'jvmpropertyfile', 'new location of rtms.properties' stored procedure. See the reference pages for sp_msgadmin in the *Messaging Services User's Guide for Adaptive Server Enterprise* for details.

• Create a file with the following information, and save it as *rtms.properties* in your shared library directory (*$SYBASE/$SYBASE_ASE/lib* in UNIX or *%SYBASE%\%SYBASE_ASE%\lib* in Windows):

```
sample property file
================
TIBCOQUEUEMETHOD =
     createQueueConnection(java.lang.String,java.lang.String)
TIBCOTOPICMETHOD =
     createTopicConnection(java.lang.String,java.lang.String)
TIBCOTFACTORY = com.tibco.tibjms.TibjmsTopicConnectionFactory
TIBCOQFACTORY = com.tibco.tibjms.TibjmsQueueConnectionFactory
TIBCOJAR = $SYBASE/$SYBASE_ASE/lib/tibjms.jar
EASQUEUEMETHOD = com.sybase.jms.InitialContextFactory
EASTOPICMETHOD = com.sybase.jms.InitialContextFactory
EASTFACTORY = javax.jms.TopicConnectionFactory
EASQFACTORY = javax.jms.QueueConnectionFactory
EASJAR = $SYBASE/$SYBASE_ASE/lib/easclient.jar
```

Specify the shared library directory as follows:

• For TIBCO – change *$SYBASE/$SYBASE_ASE/lib/tibjms.jar* to the location where you installed *tibjms.jar* file (*%SYBASE%\%SYBASE_ASE%\lib\tibjms.jar* on Windows)

• For EAServer – change *$SYBASE/$SYBASE_ASE/lib/easclient.jar* to the location where you installed *easclient.jar* file (*%SYBASE%\%SYBASE_ASE%\lib\easclient.jar* on Windows)

Note If you are using Adaptive Server Enterprise version 15.0.1, the *rtms.properties* file is automatically added during the RTDS installation process. See "Configuring RTDS for Adaptive Server" next, for information on how to configure the file.

4.5 Configuring RTDS for Adaptive Server

This section provides instructions on how to configure Real-Time Data Services.

Before you begin, set your Adaptive Server environment settings by sourcing *SYBASE.sh* or *SYBASE.csh*.

Real-Time Data Services, as a messaging services feature, uses these Adaptive Server sp_configure configuration parameters, which you set when you configure Adaptive Server:

- 'enable real time messaging' – configures Adaptive Server to use Real-Time Data Services. Its default value is 0. To turn this parameter on, enter:

```
sp_configure 'enable real time messaging', 1
```

Table 3 describes the settings that must be correct in order for sp_configure 'enable real time messaging', 1 to succeed.

Table 3: Configurations to set in order for sp_configure 'enable real time messaging', 1 to succeed

Configuration	Description

LD_LIBRARY_PATH	• Located in *SYBASE.sh* on IBM AIX – the second line is for MQ only:
	
	```set LIBPATH $SYBASE/$SYBASE_ASE/lib```
	```set LIBPATH /usr/mqm/lib64```
	
	• Located in *SYBASE.sh* on Linux, Solaris, and HP-UX:
	
	```set LD_LIBRARY_PATH $SYBASE/$SYBASE_ASE/lib```
	
	• Located in *SYBASE.bat* on Windows – the last line is for MQ only:
	
	```set PATH```
	```%SYBASE%/%SYBASE_ASE%/bin```
	```set PATH```
	```c:\Program files\IBM\WebSphere MQ\bin```

SYBASE_JRE	• Located in *SYBASE.sh* on UNIX:
	
	```set SYBASE_JRE $SYBASE/shared/jre142```
	
	• Located in *SYBASE.bat* on Windows:
	
	```set SYBASE_JRE```
	```%SYBASE%/shared/sun/jre142```

The provider JAR libraries	Located in *rtms.properties*: • EAServer – *easclient.jar* • TIBCO – *tibjms.jar* The files are provided by these applications.
SYBASE messaging licenses:	Located in the license file under *$SYBASE/SYSAM-2_0/licenses* (*%SYBASE%\SYSAM-2_0\licenses* in Windows): • EAServer JMS – ASE_MESSAGING_EASJMS • TIBCO EMS – ASE_MESSAGING_TIBJMS • IBM Websphere MQ – ASE_MESSAGING_IBMMQ

Configuration	Description
The SYBASE interface libraries from the CD	Located in: • UNIX – *$SYBASE/$SYBASE_ASE/lib* • Windows – *%SYBASE%\%SYBASE_ASE%\bin*

See the *Messaging Services User's Guide for Adaptive Server Enterprise* for detailed instructions.

• 'messaging memory' – specifies the number of memory pages set for messaging. Its default value is 400 2K pages, and its minimum value is 60 2K pages. For example, to set this parameter to 800, enter:

```
sp_configure 'messaging memory', 800
```

• 'max online Q engines' – required for MQ. Specifies the maximum number of Q engines you can have online. You may need to increase 'max online engines' to accommodate the number of 'max online Q engines'. Restart Adaptive Server for 'max online Q engines' to take effect.

• 'number of Q engines at startup' – required for MQ. Specifies the number of Q engines that are online when the server starts. You may need to increase 'max online engines' to accommodate the number of 'max online Q engines'. You must restart Adaptive Server for 'number of Q engines at startup' to take effect.

This example assumes that current 'max online engines' is 4.

```
-- Add 2 more to 'max online engines'.
sp_configure 'max online engines', 6
go
sp_configure 'max online Q engines', 2
go
sp_configure 'number of Q engines at startup, 2
go
```

MQ only – set the path for the MQ client shared libraries to the dynamic linker's search path using the information in Table 4 for your platform.

Table 4: MQ client shared libraries and their paths

Platform	Path
Solaris 64-bit	*/opt/mqm/lib64*
Solaris 32-bit	*/opt/mqm/lib*
Linux 32-bit	*/opt/mqm/lib*
HPUX 64-bit	*/opt/mqm/lib64*
AIX 64-bit	*/usr/mqm/lib64*
Windows	*c:\Program files\IBM\WebSphere MQ\bin*

Note On UNIX platforms, your MQ client shared library path must be correct
before you start Adaptive Server. Windows sets the PATH automatically when
you install IBM MQ even if you install the client shared libraries in other
locations.

❖ **Configuring your installation**

1 Run the installmsgsvss script to install system stored procedures for
   real-time messaging services:

   ```
   isql -Usa -Psa_password -Sserver_name
       -i$SYBASE/$SYBASE_ASE/scripts/installmsgsvss
       -ooutput_file
   ```

2 Add your local server:

   ```
   sp_addserver, <local server name>
   ```

3 Shut down your server.

4 Set the SYBASE_JRE variable to point to *$SYBASE/shared/jre142*
   (*%SYBASE%\Shared\Sun\jre142* on Windows), so that the JVM can start
   when you enable real-time messaging:

   ```
   SYBASE_JRE = $SYBASE/shared/jre142
   ```

5 Restart your server.

6 *Adaptive Server version 15.0.1 ESD #1 only* – when you install Real-Time
   Data Services, the properties file is copied into the your Adaptive Server
   shared libraries directory.

   a After you have installed RTDS, verify that the properties file is its
      default location:

      • On UNIX – in the shared libraries directory in
         $SYBASE/$SYBASE_ASE/lib/rtms.properties

      • On Windows – in the binary directory in
         %SYBASE%\%SYBASE_ASE%\lib\rtms.properties

   b To save the properties file to other locations, specify the new location
      with the sp_msgadmin 'config', 'jvmpropertyfile', '*new location of
      rtms.properties*' stored procedure. See the reference pages for
      sp_msgadmin in the *Messaging Services User's Guide for Adaptive
      Server Enterprise* for details.

c   Before you run RTDS, modify its contents so that the *rtms.properties* file points to the correct location of the messaging provider's client JAR file. The contents of *rtms.properties* should look similar to:

```
TIBCOQUEUEMETHOD =
    createQueueConnection(java.lang.String,java.lang.String)
TIBCOTOPICMETHOD =
    createTopicConnection(java.lang.String,java.lang.String)
TIBCOTFACTORY = com.tibco.tibjms.TibjmsTopicConnectionFactory
TIBCOQFACTORY = com.tibco.tibjms.TibjmsQueueConnectionFactory
TIBCOJAR = $SYBASE/$SYBASE_ASE/lib/tibjms.jar
EASQUEUEMETHOD = com.sybase.jms.InitialContextFactory
EASTOPICMETHOD = com.sybase.jms.InitialContextFactory
EASTFACTORY = javax.jms.TopicConnectionFactory
EASQFACTORY = javax.jms.QueueConnectionFactory
EASJAR = $SYBASE/$SYBASE_ASE/lib/easclient.jar
```

- For TIBCO – change *$SYBASE/$SYBASE_ASE/lib/tibjms.jar* to the location where you installed *tibjms.jar* file (*%SYBASE%\%SYBASE_ASE%\lib\tibjms.jar* on Windows)

- For EAServer – change *$SYBASE/$SYBASE_ASE/lib/easclient.jar* to the location where you installed *easclient.jar* file (*%SYBASE%\%SYBASE_ASE%\lib\easclient.jar* on Windows)

Note Messaging operations such as msgsend and msgrecv fail if Adaptive Server cannot access the JAR file.

---

7   For the new configuration to take effect, restart the Java Real-Time Data Services JVM server by disabling real-time messaging:

```
sp_configure 'enable real time messaging',0
```

8   Re-enable real-time messaging:

```
sp_configure 'enable real time messaging',1
```

9   Assign messaging_role permissions to users. For example:

```
grant role messaging_role to <login>
```

❖   **Setting up MQ**

1   Create and start a Queue Manager. In this example, the queue manager is called QM1:

```
% crtmqm QM1
```

```
WebSphere MQ queue manager created.
Creating or replacing default objects for QM1.
Default objects statistics : 31 created. 0 replaced.
0 failed.
Completing setup.
Setup completed.

% strmqm QM1

WebSphere MQ queue manager 'QM1' started.
```

2   Use the MQSC tool to create a queue. This example creates a queue on the QM1 Queue Manager called Q1:

```
% runmqsc QM1

5724-B41 (C) Copyright IBM Corp. 1994, 2002. ALL RIGHTS RESERVED.
Starting WebSphere MQ script Commands.
define qlocal(Q1)
      1 : define qlocal(Q1)
AMQ8006: WebSphere MQ queue created.
end
      2 : end
No MQSC commands read.
No commands have a syntax error.
All valid MQSC commands were processed.
```

3   Use the MQSC tool to define a server channel in the Queue Manager. This example defines a channel on QM1 called CH1:

```
% runmqsc QM1

5724-B41 (C) Copyright IBM Corp. 1994, 2002. ALL RIGHTS RESERVED.
Starting WebSphere MQ script Commands.
define channel(CH1) chltype(SVRCONN)
      1 : define channel(CH1) chltype(SVRCONN)
AMQ8014: WebSphere MQ channel created.
end
      2 : end
No MQSC commands read.
No commands have a syntax error.
All valid MQSC commands were processed.
```

4   Add authorizations for the SYBASE user login and ASE logins. In this example, Adaptive Server runs as user "sybase," and the Adaptive Server messaging user is "login1" and the queue is "Q1":

```
% setmqaut -m QM1 -t qmgr -p sybase +connect +altusr +inq +setid
% setmqaut -m QM1 -t q -n Q1 -p login1 +inq +get +browse +put
```

5   Start an MQ listener. This example starts a listener on port 8765:

```
% runmqlsr -t tcp -p 8765 -m QM1 &
```

The following shows the endpoint URL for the objects created in these examples, with "myhost" as the host name:

```
ibm_mq:CH1/tcp/myhost(8765)?qmgr=QM1,queue=Q1
```

4.6 Configuring Adaptive Server for MQ

A Q engine uses the same amount of memory resources that Adaptive Server engines use. Messaging operations fail if you do not have enough Q engines. You cannot run any Adaptive Server sessions on the Q engine.

Q engines appear in sysengines, with a "_q" appended to their status:

- online_q – engine is online
- offline_q – engine is offline
- dormant_q – engine is dormant

To bring a Q engine online, use the sp_engine stored procedure; an existing sp_engine works on Q engines. Use sp_configure "max online Q engines" to specify the maximum number of engines online.

4.6.1 Using *sp_config* to configure the Q engine

You can configure the Q engine using sp_config and the parameters discussed in this section. For more information about using sp_config, see *Adaptive Server Enterprise Reference Manual: Procedures*.

max online Q engines

You can use the max online Q engines parameter with sp_config to control the maximum the number of Adaptive Server Q engines. For example:

```
sp_configure "max online Q engines", 4
```

Valid values are:

- Minimum value: 0.
- Default value: 0.
- Maximum value: Depends on the settings using sp_configure "max online engines".

The restrictions are:

- max online Q engines cannot be greater than max online engines minus number of engines at startup.

- The command fails if there is already an engine group referencing an engine in the range max online engines minus max online Q engines to max online engines minus 1.

  For instance, if max online engines is 10 and you then attempt to set max online Q engines to 4, an error is returned if there is an engine group bound to engines 6, 7, 8, or 9.

- max online Q engines cannot be greater than max online engines.

Setting max online Q engines reserves the high range of max online engines for Q engines. Once you set max online Q engines, Adaptive Server engines cannot use the engines in the range that is reserved for Q engines. For example, if you set max online engines to 10, and set max online Q engines to 4, Adaptive Server cannot use engines 6, 7, 8, and 9, and subsequent attempts to change number of engines at startup to 7, 8, or 9 fail, as do attempts to add engines 6, 7, 8, or 9 to an engine group.

Note Setting max online Q engines can affect existing production environments. For this reason, Sybase recommends that you increase max online engines by the same value as you set max online Q engines. For example, to set max online Q engines to 4, increase max online engines by 4 also.

---

number of Q engines at startup

This is an integer option that controls the number of Adaptive Server Q engines that are automatically started when Adaptive Server starts. For example:

```
sp_configure "number of Q engines at startup", 4
```

Valid values are:

- Minimum value is 0

- Default value is 0

- Maximum value must be less than max online Q engines

max native threads per engine

> A Q engine uses operating system native threads. The max native threads per engine configuration parameter controls the maximum number of native threads that a Q engine uses. In this example, the procedure limits every Q engine to a maximum of 100 native threads:

```
sp_configure 'max native threads per engine', 100
```

> The parameter has the following values:

- Minimum value is 50

- Maximum value is 1000

- Default value is 50

> If there are more messaging sessions than there are native threads configured, the messaging operation blocks and waits until a native thread is released.

Online engines and number of CPUs

> The total number of online database management systems and Q engines cannot be greater than the number of CPUs on the system.

> You cannot use msgsend and msgrecv if the values of max online Q engines or number of Q engines at startup are 0.

4.7 Error messages

> Table 5 describes error messages you may see in RTDS, and what you can do.

Table 5: RTDS error messages

Message	Description	What to do
5629	You have not defined your local server.	Define your local server.
15104	• You do not have an RTDS license, or • You have not configured Adaptive Server for RTDS	Obtain an RTDS license, or configure Adaptive Server for RTDS. See "Adding an RTDS license for Adaptive Server Enterprise version 15.01 ESD #1" on page 11 for instructions.
15123	• You have not SYB_RTMS defined in the sysservers database, or • You have not run installmsgsvss.	• Define SYB_RTMS in, or • Run installmsgsvss.

Message	Description	What to do
15146	You have not configured 'number of Q engines at startup' and 'max online Q engines'.	The number of Q engines at startup should be at least 1. See "Configuring your installation" on page 25 for details.
15147	MQ only – RTDS cannot dynamically load MQ libraries.	Verify the path to the libraries by checking the setting of LD_LIBRARY_PATH: • Linux and Solaris – confirm that *libsybibmmq.so* is in *$SYBASE/$SYBASE_ASE/lib/* • HP-UX – confirm that *libsybibmmq.sl* is in *$SYBASE/$SYBASE_ASE/lib/* • IBM AIX – confirm that *libsybibmmq.so* is in *$SYBASE/$SYBASE_ASE/lib/*, and that both *$SYBASE/$SYBASE_ASE/lib/* and */usr/mqm/lib64* are in *$LIBPATH*. • Windows – confirm that *sybibmmq.so* is in *%SYBASE%/%SYBASE_ASE%/bin/*, and that both *%SYBASE%/%SYBASE_ASE%/bin/* and *c:\Program files\IBM\WebSphere MQ\bin* are in *%PATH%*.
15150	RTDS cannot retrieve the SYBASE_JRE environment variable.	Set SYBASE_JRE to *$SYBASE/shared/jre142* (*%SYBASE%/shared/Sun/jre142* on Windows)
15151	RTDS cannot retrieve the SYBASE_ASE environment variable.	Set SYBASE_ASE to: • ASE-15_0 for Adaptive Server 15.x • ASE-12_5 for Adaptive Server 12.5.x
15152	RTDS cannot retrieve the SYBASE environment variable.	Set SYBASE to correct directory where ASE is installed.
15157	There is an error with spawning the Java Real-Time Messaging Service JVM server.	Check all libraries are put in correct location.
"Kernel IBM MQ dynamic libraries failed to load"	• You are missing some libraries, or • There is an error with spawning the Java program.	Reinstall RTDS.

5. Installing RTDS using RepConnector

This section discusses installing and configuring Real-Time Data Services with a system using RepConnector.

Note This option is not available for HP-UX 64-bit.

5.1 Installing RepConnector for RTDS

You must have the following on your local machine before you install RepConnector 15.0.1:

• EAServer version 5.2 Advanced Edition

• BEA WebLogic version 8.1

In addition, you must have Adaptive Server installed on either a local or remote machine.

Follow the instructions in the *RepConnector version 15.0.1 Installation Guide* to install RepConnector on the existing EAServer installation on your machine.

5.2 Configuring RepConnector

Use the RepConnector Manager to configure the RepConnector connections. See the *RepConnector Configuration and User's Guide* for detailed information about RepConnector Manager, and configuration of the RepConnector connections for EAServer JMS, TIBCO EMS, and IBM WebSphere MQ.

Table 6 shows the parameters for configuring RepConnector to connect with Replication Server.

Table 6: Configuring RepConnector for Replication Server

Property name	Description
Inbound Type	The inbound message type. Set as REPLICATION.
Outbound Type	The outbound message type. Specify as JMS.
DSI Name	The name of your Data Server Interface (DSI) connection, defined in the interfaces file for your RepConnector connection.
DSI Port	The port number of your DSI connection, defined in the interfaces file for your RepConnector connection.
DSI User Name and Password	The user name and password, defined for the replication connection configured with your Replication Server.
RSSD URL	The URL of the RSSD database.
RSSD User Name and Password	The user name and password to access to the RSSD database.
Required Group	Select one of the following: • Individual – to route a single event in a transaction. • Group – to route multiple events in a transaction.

Table 7 shows the parameters for configuring RepConnector to connect with TIBCO EMS.

Table 7: Configuring RepConnector for TIBCO EMS

Property name	Description
Inbound Type	Specify one: • JMS – for routing the events from the EMS to the target database • REPLICATION – to route the replication event to the EMS queue or topic
Outbound Type	Specify one: • JMS – for routing the events to route the replication event to the EMS queue or topic • DATABASE – to route the SQL commands to the target database
Destination Type	Select one: • Queue – if you are using a queue configured with the TIBCO EMS • Topic – if you are using a topic
JDBC Provider URL	The URL of the TIBCO EMS. The default is *tcp://localhost:7222*.
Initial Naming	The class of the naming context factory for TIBCO.
Context Factory	EMS. Select com.tibco.tibjms.naming.TibjmsInitialContextFactory.
Connection Factory	The name of the EMS connection factory. Select either: • Queue destination type – com.tibco.tibjms.TibjmsQueueConnectionFactory • Topic destination type – com.tibco.tibjms.TibjmsTopicConnectionFactory
Destination Name	The name of the destination queue or topic.
User Name and Password	The user name and password defined for the queue or topic configuration.
Topic Subscribers	The preregistered subscribers for the topic.
Status Destination	The queue or topic for storing the error message if the SQL command failed to be delivered to the target database.

Table 8 shows the parameters for configuring RepConnector to connect with your target database.

Table 8: Configuring RepConnector for the target database

Property name	Description
Outbound Type	Specify "DATABASE"
JDBC Connection URL	The JDBC URL to connect to the target database
Driver Class	Specify com.sybase.jdbc3.jdbc.SybDriver
User Name and Password	The user name and password to connect to the target database

6. Known problems

This section documents known problems that affect Real-Time Data Service version 3.5. Where available, these problems are identified with Change Request (CR) numbers, to which you can refer when contacting Sybase Technical Support. Workarounds are provided where available.

6.1 RTDS does not start after installing Replication Server 12.6 or Enterprise Connect Data Access 12.6.1

[CRs #445930, #445488]   Real-Time Data Services does not start correctly if you install Replication Server version 12.6 or Enterprise Connect Data Access version 12.6.1 after you install RTDS. This occurs in both Adaptive Server versions 12.5.4 ESD #3 and 15.0.1ESD #1.

Workaround: Set your $SYBASE_JRE environment variable to:

```
/<rtds4.0 install directory>/shared/jre142
```

6.2 JMS RTDS server only attaches to the first Adaptive Server shared memory segment

[CR #444563]   JMS only – When using TIBCO JMS or EAServer JMS with Adaptive Server for messaging, if you do not enable the 'allocate max shared memory' option for Adaptive Server, Real-Time Data Services could fail when you:

• Enable the 'enable real time messaging' option, or

• Executing any messaging operations.

This occurs in both Adaptive Server versions 12.5.4 ESD #3 and 15.0.1ESD #1.

Workaround: Allocate max shared memory when you start Adaptive Server.

6.3 Shutting down an RTDS-enabled Adaptive Server in HP can cause a stack trace

[CR #444221]   Shutting down an RTDS-enabled Adaptive Server in HP can cause a stack trace. This occurs in both Adaptive Server versions 12.5.4 ESD #3 and 15.0.1ESD #1.

Workaround: There is no workaround for this CR.

6.4 Diagnostic RTDS messages refer to EJB instead of RTDS JVM

[CR #443699] Diagnostic messages in RTDS refer to Enterprise Java Beans instead of the RTDS Java Virtual Machine. This occurs in Adaptive Server version 12.5.4. ESD #3.

Workaround: There is no workaround for this CR.

6.5 RTDS fails to boot JRTMS server

[CR #443247] *Windows only* – The RTDS server does not start if PATH does not include *$SYBASE/$SYBASE_ASE/bin*. This occurs in Adaptive Server version 12.5.4. ESD #3.

Workaround: Explicitly set PATH on Windows to include *%SYBASE%\%SYBASE_ASE%\bin*.

6.6 *msgunsubscribe* does not unsubscribe topics in EAServer

[CR #441614] *EAServer only* – The msgconsume(*subscription_name*) function does not work if you use msgunsubscribe on a durable subscription for a topic using the following:

```
select msgunsubscribe('subscription_1' WITH REMOVE)
```

Workaround: Instead of using the msgunsubscribe command, use a different subscription name to subscribe to the same topic with different clients.

6.7 Cannot install Replication Server 12.6 on top of Adaptive Server 15.0

[CRs #400506 and #400508] Installing Replication Server version 12.6 on top of Adaptive Server version 15.0 causes Replication Server to fail.

Workaround: Install either of the following:

• Replication Server version 12.6 into a separate directory than Adaptive Server, or

• Replication Server version 15.0.

6.8 Using *for xml* clause in Adaptive Server 15.0 can cause an overflow

[CR #348124] A message using the for xml clause may cause an overflow.

> **Workaround**: Increase your stack size. The amount you need to increase your stack size depends on the configuration of your site and your for xml query.

7. Product compatibilities

Real-Time Data Services version 4.0 is compatible with the following products:

• Adaptive Server Enterprise versions 12.5.4 ESD #3 and higher

> **Note** RTDS 4.0 does not work with versions of Adaptive Server below 12.5.4 ESD #3.

• Adaptive Server Enterprise versions 15.0.1 ESD #1 and higher

> **Note** RTDS 3.5 does not work with Adaptive Server version 15.0.1 ESD #1.

• Replication Server version 15.0

• RepConnector version 15.0.1

• EAServer Message Bus system version 4.2

• IBM WebSphere MQ messaging system version 5.3

> **Warning!** Real-Time Data Service version 4.0 is not certified on Adaptive Server version 15.0.2 or later. If you have RTDS 4.0 and you upgrade Adaptive Server to version 15.0.2, 15.0.2 ESD#1, or 15.0.2 ESD#2, RTDS messaging stops. To use the RTDS feature, upgrade to RTDS 4.5.

8. 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.

9. 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/.

9.1 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   Select Products from the navigation bar on the left.

3   Select a product name from the product list and click Go.

4   Select the Certification Report filter, specify a time frame, and click Go.

5   Click a 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 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.

9.2 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.

10. 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.

Real-Time Data Services HTML documentation has 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.