

SYBASE®

Installation Guide

Sybase Replication Agent™

12.6

[Linux, Microsoft Windows, and UNIX]

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About This Book

This book describes how to install Sybase® Replication Agent™ on Linux, Microsoft Windows 2000 and 2003, and UNIX platforms.

Audience

This book is for replication System Administrators and Database Administrators who are responsible for managing a replication system within an enterprise network.

How to use this book

Read Chapter 2, “Preparing for Installation,” *before* you unload the Sybase Replication Agent software from the Sybase Replication Agent 12.6 distribution media. Use the Installation and Setup worksheet in Chapter 1 to gather and record the connectivity and configuration information you need to set up the Sybase Replication Agent.

See Chapters 1 and 2 in the Sybase Replication Agent *Administration Guide* for more information about the Sybase Replication Agent system:

- An introduction to the Sybase Replication Agent system, and an overview of its topology
- Specific configuration requirements for each Sybase Replication Agent system component

This book provides the following information:

- Chapter 2, “Preparing for Installation,” describes basic Sybase Replication Agent system requirements, and provides a worksheet to help you gather and record the configuration information that you need to install the Sybase Replication Agent software and set up the Sybase Replication Agent system.
- Chapter 3, “Installing Sybase Replication Agent,” describes how to install the Sybase Replication Agent 12.6 software on a Linux, Microsoft Windows, or UNIX platform. This chapter also describes how to uninstall the software.

Note For information about installing the Replication Server® 12.6 software, see the Replication Server installation and configuration guides for your platform.

Related documents

Sybase Replication Agent Refer to the following documents to learn more about the Sybase Replication Agent:

- Sybase Replication Agent *Reference Manual* – for information about all Replication Agent commands and configuration parameters, including syntax, examples, and detailed command usage notes
- Sybase Replication Agent *Primary Database Guide* – for detailed, database-specific information about each non-Sybase database that is supported by the Sybase Replication Agent
- Sybase Replication Agent *Administration Guide* – for an introduction to the Sybase Replication Agent system, and information about setting up and administering the Sybase Replication Agent and other components of the Sybase Replication Agent system.
- The Sybase Replication Agent release bulletin – for last-minute information that was too late to be included in the books

Note A more recent version of the Sybase Replication Agent release bulletin may be available on the World Wide Web. To check for critical product or document information that was added after the release of the product CD, use the Sybase Technical Library Web site.

Replication Server Refer to the following documents for more information about transaction replication systems and the Replication Server software:

- Replication Server *Design Guide* – for an introduction to basic transaction replication concepts and Sybase replication technology
- Replication Server *Heterogeneous Replication Guide* – for detailed information about configuring Replication Server and implementing a Sybase replication system with non-Sybase databases

Primary data server Make sure that you have appropriate documentation for the non-Sybase primary data server that you use with the Sybase replication system.

Java environment The Sybase Replication Agent requires a Java Runtime Environment (JRE) on the Replication Agent host machine.

- The Sybase Replication Agent release bulletin contains the most up-to-date information about Java and JRE requirements.
- Java documentation available from your operating system vendor describes how to set up and manage the Java environment on your platform.

Additional information about the Java environment is available at the following URL:

<http://java.sun.com>

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/>.

Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ To find the latest information on product certifications

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

❖ **To find the latest information on component certifications**

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

❖ **To create 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.

Sybase EBFs and software maintenance

❖ **To find 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.

Style conventions

The following style conventions are used in this book:

- In a sample screen display, commands that you should enter exactly as shown appear like this:

```
pdb_xlog
```

- In the regular text of this document, variables or user-supplied words appear like this:

If you specify the *value* option, it changes the setting of the specified configuration parameter.

- In a sample screen display, variables or words that you should replace with the appropriate value for your site appear like this:

...where *rds* and *rdb* are the variables you should replace.

- In the regular text of this document, names of programs, utilities, procedures, and commands appear like this:

Use the `pdb_init` command to initialize the primary database.

- In the regular text of this document, names of database objects (tables, columns, stored procedures, etc.) appear like this:

Check the price column in the widgets table.

- In the regular text of this document, names of datatypes appear like this:

Use the date or datetime datatype.

- In the regular text of this document, names of files and directories appear like this:

Log files are in the `$SYBASE/RAX-12_6/inst_name/log` subdirectory.

Syntax conventions

The following syntax conventions are used in this book:

Table 1: Syntax conventions

Key	Definition
{ }	Curly braces indicate that you must choose at least one of the enclosed options. Do not type the braces when you enter the command.
[]	Brackets mean that choosing one or more of the enclosed options is optional. Do not type the brackets when you enter the command.
()	Parentheses are to be typed as part of the command.
	The vertical bar means you can select only one of the options shown.
,	The comma means you can choose as many of the options shown as you like, separating your choices with commas that you type as part of the command.

In reference sections of this document, statements that show the syntax of commands appear like this:

```
ra_config [param [, value]]
```

The words *param* and *value* in the syntax are variables or user-supplied words.

The following character case conventions are used in this book:

- All command syntax and command examples are shown in lowercase. However, Sybase Replication Agent command names are *not* case sensitive. For example, PDB_XLOG, Pdb_Xlog, and pdb_xlog are equivalent.
- Names of configuration parameters are case sensitive. For example, Scan_Sleep_Max is not the same as scan_sleep_max, and the former would be interpreted as an invalid parameter name.
- Database object names are *not* case sensitive in Sybase Replication Agent commands. However, if you need to use a mixed-case object name in a command (to match a mixed-case object name in the database), you must delimit the object name with quote characters. For example:

```
pdb_get_tables "TableName"
```

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.

Sybase Replication Agent version 12.6 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.

Character case conventions

Accessibility features

The online help for this product is also provided in HTML, which you can navigate using a screen reader.

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.

For a Section 508 compliance statement for Sybase Replication Agent version 12.6, see Sybase Accessibility at <http://www.sybase.com/detail?id=1028493>.

If you need help

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 cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.



Sybase Software Asset Management (SySAM)

This chapter describes licensing concepts that you need to know before you install any of the components for Sybase Replication Server Options (RSO).

Topic	Page
SySAM overview	1
How SySAM works	3
Registering licenses using a network license server	4
SySAM administration	7

Note Sybase recommends that you read this entire chapter before installing any RSO components.

SySAM overview

Sybase Software Asset Management (SySAM) is a licensing mechanism that:

- Allows System Administrators to monitor their site's use of Sybase products and optional features
- Records the Sybase software being used and licensed

SySAM verifies that a valid license exists for one of the following Sybase Replication Server Options:

- Replication Server Option for UDB
- Replication Server Option for Informix
- Replication Server Option for Microsoft SQL Server
- Replication Server Option for Oracle

The basic components of SySAM are:

- A license file
- The SySAM software, which consists of a license manager and management utilities

When you install Sybase Replication Agent, a SySAM license manager is automatically installed. It is used to manage the licenses of all the RSO components. After installation, you have two choices:

- You can run the license manager daemon on your local machine.
- You can run the license manager daemon on a remote machine in a network system and then point to it from your local machine.

Note Sybase recommends using a network license server to manage the licenses of RSO components. For more information, see “Registering licenses using a network license server” on page 4.

RSO component licenses

SySAM checks licenses for the following RSO components:

- Sybase Replication Agent
- Enterprise Connect Data Access Option (ECDA)

Note Before ECDA version 12.5, its options were sold as individual DirectConnect products named “DirectConnect for [target].” You will see the name “DirectConnect” used in the software and in documents, including this document.

- Adaptive Server Enterprise (ASE)

You must register the RSO license through the license manager in SySAM.

RSO license files

A license file contains a set of information that enables a set of features of a Sybase product set. The LM_LICENSE_FILE environment variable is used to point to a license file.

Following are the license identifiers for the RSO features that are licensed through SySAM:

- REP_UDB
- REP_INFORMIX
- REP_MSSQL
- REP_ORACLE

Required license information

When you purchase your RSO product, Sybase provides a Sybase Software Asset Management certificate with the following information, which is required and must be entered for each license. When you configure the SySAM License Manager, it prompts you for the following information for each license:

- Order number – the order number of your software purchase.
- Feature name – the feature name from the certificate package or bundle license.
- Feature count – the number of licenses you purchased for the feature package or bundle.
- Software version – the version number specified on the license certificate.
- Authorization code – the authorization code shown on your license certificate for RSO.

How SySAM works

SySAM consists of two utilities called `lmgr` and `lmutil`, which manage licensing activities, and two services: the license management service, `lmgrd`, and the SYBASE service. The SySAM `lmgrd` service contains a pointer that locates the license file for verification and can reside either on the primary server, known as the local license host, or on a remote license host. The services handle requests to validate licensed features.

Using information in the license file, each RSO component connects to the SySAM daemon and attempts to check out a license for the base component feature. If the component feature license is checked out successfully (a license exists in the *license* file), the RSO component continues to operate.

If a license does not check out successfully (a license is not found), the RSO component *may* continue to operate; however, it does record this discrepancy in the log.

Registering licenses using a network license server

Because you can install RSO components on different machines or in different Sybase directories on the same machine, Sybase recommends that you use a network license server. You can have *licensee* servers on many different machines, but you must have connectivity pointers to the *license* server. The licenses must be entered with the license server.

If you do not already have a designated network license server, you must choose one. Sybase recommends using the SySAM license manager installation in the Replication Server that is associated with your Replication Server Option. See Appendix A in the Replication Server *Installation Guide* for more information on setting up a network license server.

❖ To register the RSO license with a network license server

- 1 Determine the location (the host and path) of your network license server and locate its `$SYBASE/SYSAM-1_0/licenses/license.dat` file.
- 2 Install Replication Agent on the platform of your choice.

Note If you do not install Replication Agent, you will not be able to correctly configure and register your RSO license.

- 3 Navigate to the `$SYBASE/SYSAM-1_0/licenses` directory in your Replication Agent installation.
- 4 Open the `sybpkg.rax` file and copy its contents to the `license.dat` file of the network license server.
- 5 Start the license manager on the network license server.

For Windows:

- From a command-line prompt, execute the following:


```
cd \path\sybase
SYBASE
cd SYSAM-1_0\bin
lmgr
```

For UNIX:

- Execute the following:

```
cd /path/sybase
source SYBASE.csh
cd SYSAM-1_0/bin
./lmgr
```

The following prompt appears:

```
Do you have Sybase Software Asset Management
Certificates to register?
```

- 6 Click Yes.
- 7 The SySAM License Manager window that appears prompts you for:
 - Order Number
 - Feature Name
 - Feature Count
 - Software Version
 - Authorization Code
- 8 Click More until you have entered all available licenses. Click Done.
- 9 Because you edited the *license.dat* file, you must notify the license daemon of the changes by executing the *reread* command for your platform.

For Windows:

- From a command-line prompt, execute the following:

```
%SYBASE%\SYSAM-1_0\bin\lmutil lmreread
```

For UNIX:

- Execute the following:

```
$(SYBASE)/$(SYBASE_SYSAM)/bin/lmutil lmreread
```

All the components of your RSO are now registered with the network license server.

Adding connectivity pointers for RSO component installations

❖ To point RSO component installations to the network license server

After you install RSO components in your replication environment, you *must* set up a SysSAM connectivity pointer from each different component installation to the network license server. If all RSO components are in one installation directory, then you only need to do this procedure once. If you have RSO components in different installation directories, complete this procedure for each one.

- 1 Start the license manager in the RSO component installation.

For Windows:

- From a command-line prompt, execute the following:

```
cd \path\sybase
SYBASE
cd SYSAM-1_0\bin
lmgr
```

For UNIX:

- Execute the following:

```
cd /path/sybase
source SYBASE.csh
cd SYSAM-1_0/bin
./lmgr
```

The following prompt appears:

```
Do you have Sybase Software Asset Management
Certificates to register?
```

- 2 Click No.

The following prompt appears:

```
Have you registered your Sybase Software Asset
Management Certificates at a central license host?
```

- 3 Click Yes.

The following prompt appears:

```
Please enter the following Sybase Network License
Manager information.
```

- 4 Enter the host name and port number of your network license server, as defined in the network license server's `$SYBASE/SYSAM-1_0/licenses/license.dat` file.

- 5 Click OK.

A connectivity pointer is set up for the RSO component installation.

SySAM administration

This section describes how to verify the installation and how to start SySAM manually. It also provides additional information for administering SySAM.

Verifying that the License Manager is running

Sybase supplies utilities with license manager to check the status of the license manager daemon.

❖ To verify that the license manager daemon is running

- 1 Enter the following:

For Windows:

```
%SYBASE%\SYSAM-1_0\bin\lmutil lmstat -c
```

For UNIX:

```
lmstat -c
```

- 2 Verify that both lmgrd and SYBASE are running before you run Replication Agent.

If the license manager daemon is not running, you see a message similar to the following:

```
lmgrd is not running: Cannot connect to license server
```

If the license manager daemon is not running, you must start it manually, as described in the following procedure.

❖ To start the license manager daemon on Windows

- 1 From the Windows Start menu, select Select Programs | Sybase | Sybase Software Asset Management (SySAM).
- 2 The license manager daemon can run either as a service or as a process.
 - To run it as a service, enter the following:

```
%SYBASE%\%SYBASE_SYSAM%\sysam.bat
```

- To run it as a process, enter the following:

```
lmgrd -c %LM_LICENSE_FILE% -l %SYBASE%\%SYBASE_SYSAM%\log\lmgrd.log
```

❖ **To start the license manager daemon on UNIX**

- Enter the following command:

```
$SYBASE/$SYBASE_SYSAM/bin/lmgrd -c $LM_LICENSE_FILE -l  
$SYBASE/$SYBASE_SYSAM/log/lmgrd.log &
```

Note If you need help, enter `lmgrd -h`.

Preparing for Installation

This chapter describes the Sybase Replication Agent system requirements, and other information you need to know *before* you install the Sybase Replication Agent version 12.6 software.

Topic	Page
Reviewing installation requirements	9
Reviewing the installation process	14
Completing the Installation and Setup worksheet	17
Installation and Setup worksheet	24
What's next	24

Note The Sybase Replication Agent 12.6 release bulletin might contain more up-to-date information than this guide. Be sure to read the release bulletin for the most recent product information.

Note In this document, Linux is treated as a UNIX platform, unless the specific context requires a distinction.

Reviewing installation requirements

Review the following installation requirements before you install the Sybase Replication Agent 12.6 software:

- System requirements
- Compatible products
- Graphical user interface

- Team skill requirements

Note If you are migrating from Sybase Replication Agent version 12.5 to version 12.6, see the Sybase Replication Agent *Primary Database Guide* for database-specific details on migration.

System requirements

Sybase Replication Agent 12.6 supports the following database servers on Linux, Microsoft Windows 2000 and 2003, and UNIX platforms:

- IBM DB2 Universal Database
- Informix Dynamic Server
- Microsoft SQL Server
- Oracle

Java Runtime Environment (JRE)

Because Sybase Replication Agent is a Java-based application, a Java Runtime Environment (JRE) must be installed on the Sybase Replication Agent host machine. A JRE appropriate for your operating system is installed automatically when you install the Sybase Replication Agent software.

Operating system patch levels must be current to support Java 1.4.2. See the following Web sites to determine which patches are required for your platform, and for current information about JREs for your platform:

- <http://java.sun.com/j2se> for information about JREs on the Linux, Sun Solaris, and Microsoft Windows platforms
- <http://www.ibm.com/developerworks/java/jdk/aix> for information about JREs on AIX platforms
- <http://www.hp.com/products1/unix/java> for information about JREs on HP-UX platforms

Platforms and operating systems

The Sybase Replication Agent 12.6 software requires one of the platforms and operating system versions listed in Table 2-1.

Note Sybase Replication Agent for Oracle must be installed on a machine from which it can directly access the Oracle redo logs.

Table 2-1: Platform and operating system requirements

Platform	Operating system version
HP 9000(8xx)	HP-UX 11i
IBM RISC System/6000	IBM AIX 5.1, 5.2, and 5.3
Linux/Intel x86	Red Hat Enterprise Linux 2.1 <ul style="list-style-type: none"> • Kernel version 2.4.9-e.27 or later • RPM version 4.0.4 or later Red Hat Enterprise Linux 3.0 <ul style="list-style-type: none"> • Kernel version 2.4.21-27.0.2.EL • RPM version 4.2.3
Microsoft Windows 2000	Windows 2000 v.5.0.2195
Microsoft Windows Server 2003	Windows Server 2003 v.5.2.3790
Sun Solaris (SPARC) system	Sun Solaris 2.8 or 2.9

Note Before you install the Sybase Replication Agent 12.6 software, you must install the most recent operating system patches recommended by your operating system vendor for Java 1.4.2 support.

Table 2-2 lists the minimum physical memory, storage, and media device requirements on the Sybase Replication Agent host machine. Your Sybase Replication Agent configuration may require more memory and disk space than the minimums listed in Table 2-2.

Table 2-2: Memory, disk space, and media device requirements

Memory	Disk space	Media device
128MB RAM	300MB hard disk	CD-ROM drive

Accommodating the RASD Replication Agent for Oracle

Each Sybase Replication Agent for Oracle instance uses an embedded Adaptive Server Anywhere database to manage its Replication Agent System Database (RASD).

Because the RASD stores information about primary database structure or schema objects, its size depends partly on the number of tables and procedures replicated, and the number of database users in the primary database.

When it replicates a DDL transaction, the Sybase Replication Agent creates a new *version* of the affected object's metadata in its RASD. Over time, the size of the RASD can grow significantly, depending on the number and frequency of DDL transactions replicated.

If the RASD runs out of disk space, the Sybase Replication Agent will shut down and suspend replication. To prevent this, you must provide adequate disk space on the Sybase Replication Agent host machine to accommodate the initial size of the RASD, as well as some potential growth.

See the Sybase Replication Agent *Administration Guide* for more information about the RASD.

Compatible products

Table 2-3 lists the database server versions supported by Sybase Replication Agent 12.6.

Table 2-3: Databases compatible with Sybase Replication Agent

Database	Versions
IBM DB2 Universal Database	Enterprise Edition 6.1, 7.1, 7.2
Informix Dynamic Server	7.3, Dynamic Server.2000 (9.2)
Oracle Server	9.0.1, 9.2.0
Microsoft SQL Server	7.0, SQL Server 2000 (8.0)

Sybase Replication Agent requires a JDBC 2.0-compliant driver for the primary data server. Table 2-4 lists the JDBC driver versions required to support connectivity between Sybase Replication Agent 12.6 and the primary data server.

Table 2-4: Drivers compatible with Replication Agent

Driver	Versions
DB2 Universal Database Administration Client, JDBC driver	7.1 (DB2 Universal Database 7.1) for JDK 1.2.x 7.2 (DB2 Universal Database 7.2) for JDK 1.2.x
Informix JDBC driver	2.21.JC5
Oracle JDBC driver	JDBC Thin 9.2.0.5 for JDK 1.4
Microsoft SQL Server JDBC driver	DataDirect/Merant JDBC 2.0 (supplied with Replication Agent software)

Sybase Replication Agent 12.6 is compatible with the Sybase products listed in Table 2-5.

Table 2-5: Sybase Replication Agent 12.6 compatibility

Sybase product	Version
Adaptive Server Enterprise (as the RSSD)	12.x
Adaptive Server Anywhere (as the RASD and RSSD)	8.0.2
jConnect™ for JDBC™	6.0, EBF 12723
Replication Server	12.5, 12.6
Sybase Software Asset Management (SySAM)	8.3 or later

Graphical user interface

The standard installation procedure for Sybase Replication Agent 12.6 software uses the InstallShield wizard in GUI mode (the GUI wizard).

If you want to use the InstallShield GUI wizard to install Sybase Replication Agent on a server without a display, keyboard, and pointing device, you need access to a remote machine with a GUI environment, networked to the Sybase Replication Agent host. Before you start the InstallShield wizard, verify that the remote machine is configured to provide a GUI environment for the server on which the Sybase Replication Agent software will be installed.

Note You can use the InstallShield wizard in console mode to install Sybase Replication Agent from an operating system command prompt, without a GUI environment. See “Installing in console mode” on page 46 for more information.

Team skill requirements

You need team members with specific skills to successfully install Sybase Replication Agent 12.6. For your site, identify the person or team responsible for each skill set listed in Table 2-6.

Table 2-6: Replication Agent installation skill requirements

Role	Skill set
Operating System Administrator	<ul style="list-style-type: none"> • Understanding of Linux, Sun Solaris, HP-UX, AIX, Windows 2000, 2003 operating system • Knowledge of standards and conventions at the installation site
Communications Administrator	<ul style="list-style-type: none"> • Understanding of connectivity and communication protocols used at your site, such as TCP/IP • Understanding of your site's network configuration • Ability to design, establish, test, and troubleshoot remote communications between the primary database, Replication Agent, and Replication Server
Replication Server Administrator	<ul style="list-style-type: none"> • Understanding of Replication Server and the replication system environment • Replication Server administrator privileges
DirectConnect Administrator	<ul style="list-style-type: none"> • Understanding of DirectConnect and data access from heterogeneous databases • DirectConnect administrator privileges
Primary Database Administrator	<ul style="list-style-type: none"> • Understanding of the primary database • Primary database administrator privileges

Reviewing the installation process

Installing Sybase Replication Agent software is just one part of the process of setting up a replication system.

Table 2-7 lists the major steps required to set up a replication system to replicate transactions from a non-Sybase primary database in an enterprise network.

Table 2-7: Setting up a Sybase replication system

Step	To do this	Refer to
1	<p><i>Install the primary data server.</i></p> <p>The primary data server is the source of transactions to be replicated.</p>	<ul style="list-style-type: none"> • Primary data server documentation • Vendor documentation or Web site for the primary data server
2	<p><i>Install the connectivity drivers for the primary database server.</i></p> <p>You must install the correct JDBC driver for your primary database server.</p>	<ul style="list-style-type: none"> • “Setting up connectivity to the primary database” on page 36 in this manual • Vendor documentation or Web site for the primary data server
3	<p><i>Install Replication Server and Adaptive Server and create connections.</i></p> <p>This includes:</p> <ul style="list-style-type: none"> • Designing the replication system • Installing Replication Server and its ERSSD • Defining connections from Replication Server to the ERSSD and routes between Replication Servers • Defining connections using DirectConnect when replicating to a non-Sybase database 	<ul style="list-style-type: none"> • Sybase installer documentation • Replication Server documentation • DirectConnect documentation
4	<p><i>Prepare to install Sybase Replication Agent.</i></p> <ul style="list-style-type: none"> • Review installation requirements and the installation procedure for Sybase Replication Agent. • Complete the “Installation and Setup worksheet” on page 24. 	<ul style="list-style-type: none"> • Chapter 2, “Preparing for Installation,” in this book and Chapter 1, “Setup and Configuration,” in the Sybase Replication Agent <i>Administration Guide</i> • Sybase Replication Agent release bulletin
5	<p><i>Install the Sybase Replication Agent software.</i></p> <p>This includes:</p> <ul style="list-style-type: none"> • Installing the software 	<p>“Installing the Sybase Replication Agent software” on page 40 in this manual</p>
	<p>Note Sybase Replication Agent for Oracle must be installed on a machine from which it can directly access the Oracle redo logs.</p>	

Step	To do this	Refer to
6	<p><i>Configure Replication Server and primary data server connections.</i></p> <p>This includes:</p> <ul style="list-style-type: none"> • Creating a Replication Server database connection to the primary data server • Creating a Replication Server login for the Replication Agent instance • Configuring Replication Agent parameters • Testing connections between the Replication Agent and the primary Replication Server, and between the Replication Agent and the primary data server 	<p>Sybase Replication Agent <i>Administration Guide</i>, Chapter 3, “Administering Sybase Replication Agent”</p>
7	<p><i>Set up the Replication Agent instance.</i></p> <p>This includes:</p> <ul style="list-style-type: none"> • Creating the Replication Agent transaction log objects • Marking primary objects for replication 	<p>Sybase Replication Agent <i>Administration Guide</i>, Chapter 2, “Setup and Configuration”</p>
8	<p><i>Prepare for replication.</i></p> <p>Refer to the checklist to verify that all the replication system components are in place before you start replication.</p>	<p>Sybase Replication Agent <i>Administration Guide</i>, Chapter 2, “Setup and Configuration”</p>
9	<p><i>Verify your replication system using Sybase Replication Agent test scripts (optional).</i></p> <p>Use the test scripts provided with Sybase Replication Agent to set up a test environment and verify replication from a primary database to a replicate database.</p>	<p>Sybase Replication Agent <i>Primary Database Guide</i>, the chapter for your primary data server</p>
10	<p><i>Materialize subscriptions to primary data.</i></p> <p>For each subscription, this process:</p> <ul style="list-style-type: none"> • Validates and activates the subscription • Populates tables in the replicate database so they are synchronized with the primary database before you start replication 	<ul style="list-style-type: none"> • Replication Server documentation • Sybase Replication Agent <i>Administration Guide</i>, Appendix E, “Materializing Subscriptions to Primary Data”
11	<p><i>Start replication.</i></p> <p>Put the Replication Agent instance in the <i>Replicating</i> state.</p>	<p>Sybase Replication Agent <i>Administration Guide</i>, Chapter 2, “Setup and Configuration”</p>

Completing the Installation and Setup worksheet

The “Installation and Setup worksheet” on page 24 provides a place for you to record the information you need to install and configure your replication system.

Note Record all the information in the Installation and Setup worksheet *before* you begin software installation. The worksheet organizes several configuration parameter values and other values that you need to know to install Sybase Replication Agent properly.

Make a copy of the Installation and Setup worksheet, and record the required information as you read through the following sections. You may need to refer to the worksheet often as you install and set up Sybase Replication Agent.

Save a copy of the completed worksheet for your site records. You may need to refer to it during future Sybase product installations or upgrades.

Section 1: Replication Agent administration information

Identify the Replication Agent instance name, the administration port number, and the other administration information, and record it on the worksheet.

❖ **To complete Section 1 of the Installation and Setup worksheet**

- 1 Determine the instance type of the Replication Agent. This instance type determines which primary database server the Replication Agent will work with.

Instance types are:

- `ibmudb` – IBM DB2 Universal Database
- `informix` – Informix Dynamic Server
- `mssql` – Microsoft SQL Server
- `oracle` – Oracle Database Server

Note Sybase Replication Agent for Oracle must be installed on a machine from which it can directly access the Oracle redo logs.

Record the instance type as item 1a on the “Installation and Setup worksheet” on page 24.

- 2 Determine the name of the Replication Agent instance. This name should identify this specific instance.

Record the name of the instance as item 1b on the “Installation and Setup worksheet” on page 24.

- 3 Identify the client socket port number of the administration port for this Replication Agent instance. The port number must be unique on the Replication Agent host machine.

If you are not the System Administrator for the system on which you are installing the Replication Agent instance, ask your System Administrator which port number you should use for the Replication Agent administration port.

Note Port numbers have a range of 1 to 65,535.

Record the port number as item 1c on the “Installation and Setup worksheet” on page 24.

Note Replication Agent for Oracle requires two port numbers. The additional one is for the RASD. By default, Replication Agent for Oracle assigns the RASD port—*admin port + 1*. This number must also be unique on the Replication Agent host machine.

- 4 Determine the location of the interfaces file (*sql.ini* on Windows 2000 and 2003, or *interfaces* on Linux and UNIX).

Use this item only if you plan to use the *isql* or *jisql* utility or Replication Server Manager (RSM) to administer the Replication Agent instance.

Note The interfaces file must reside on the same machine as the Replication Agent client (*isql* or Replication Server Manager) not necessarily the Replication Agent host machine.

Record the interfaces file location as item 1d on the “Installation and Setup worksheet” on page 24.

- 5 Determine the administrative user ID and password for logging in to the Replication Agent administration port. Use this information to create the administrative user ID during configuration and setup.

See the Sybase Replication Agent *Administration Guide* for more information.

Record the administrative user ID as item 1e (admin_user) and the password as item 1f (admin_pw) on the “Installation and Setup worksheet” on page 24.

Section 2: Replication Server parameter values for the primary database connection

Determine the values of the connection parameters for Replication Server. These values are used in the Replication Server create connection command when you create the database connection for the primary database.

See “Setting up connectivity to the primary database” on page 36 for more information about using the Replication Server create connection command.

❖ To complete Section 2 of the Installation and Setup worksheet

- 1 Identify a data server name and a database name representing the primary database connection for the Replication Server.

Replication Server connects to the primary database through the Replication Agent instance, so the data server name can be the name of the Replication Agent instance.

The database name can be any name that helps you identify the connection Replication Server uses to communicate with the primary database.

Record the instance name or data server name as item 2a (rs_source_ds) and the database name as item 2b (rs_source_db) on the “Installation and Setup worksheet” on page 24.

Note These names are case sensitive.

- 2 Identify the Maintenance User ID and password associated with the Replication Server database connection to the primary database.

The Maintenance User ID must be a valid user ID at the primary database.

Note The Maintenance User ID must not be the user ID of a primary database user who applies transactions that might need to be replicated.

Record the Maintenance User ID as item 2c (Maintenance User) and the password as item 2d (Maintenance User password) on the “Installation and Setup worksheet” on page 24.

Section 3: Replication Agent parameter values for Replication Server

Determine and record the values of the Replication Agent configuration parameters for the primary Replication Server. These values are used with the Replication Agent `ra_config` command when you configure the Replication Agent instance.

See the Sybase Replication Agent *Administration Guide* for more information about using the `ra_config` command for the initial configuration of Replication Agent parameters.

❖ To complete Section 3 of the Installation and Setup worksheet

- 1 Identify the name of the Replication Server host machine.

Record the Replication Server host machine name as item 3a (`rs_host_name`) on the “Installation and Setup worksheet” on page 24.

- 2 Identify the port number of the client socket port for Replication Server.

This is the port number Replication Agent uses to log in to Replication Server.

Note All port numbers have a range of 1 to 65,535.

Record the port number as item 3b (`rs_port_number`) on the “Installation and Setup worksheet” on page 24.

- 3 Identify the user name and password Replication Agent uses to log in to Replication Server.

This Replication Server client user ID must have connect source permission in Replication Server. See the *Replication Server Reference Manual* for more information about granting connect source permissions.

If you are not the System Administrator for the system on which you are installing the Replication Agent instance, ask your System Administrator for the correct user ID and password for the primary Replication Server.

Record the Replication Server client user ID as item 3c (rs_username) and the password as item 3d (rs_password) on the “Installation and Setup worksheet” on page 24.

- 4 Identify Replication Server’s character set and record it as item 3e.

Record the port number as item 3e (rs_port_number) on the “Installation and Setup worksheet” on page 24.

Section 4: Replication Agent parameter values for the ERSSD or RSSD

Determine and record the values of the Replication Agent configuration parameters for the ERSSD or the RSSD for the primary Replication Server.

Note Replication Agent supports connection to either ERSSD or RSSD. There is no difference in configuration between the two. This section refers to both RSSD and ERSSD installations as "RSSD".

❖ To complete Section 4 of the Installation and Setup worksheet

- 1 Identify the name of the host machine on which the RSSD resides.

Record the name of the host machine as item 4a (rssd_host_name) on the “Installation and Setup worksheet” on page 24.

- 2 Identify the port number of the client socket port for the server where the RSSD resides.

Note All port numbers have a range of 1 to 65,535.

- Record the port number as item 4b (rssd_port_number) on the “Installation and Setup worksheet” on page 24.
- 3 Identify the RSSD database name for the primary Replication Server.
Record the RSSD database name as item 4c (rssd_database_name) on the “Installation and Setup worksheet” on page 24.
 - 4 Identify the user ID and password Replication Agent uses to access the RSSD for the primary Replication Server.
You must have a Replication Server ID and password. If you do not, contact your Replication Server System Administrator.
Record this RSSD client user ID as item 4d (rssd_username) and record the password as item 4e (rssd_password) on the “Installation and Setup worksheet” on page 24.

Section 5: Replication Agent parameter values for the primary data server

Determine and record the values of the Replication Agent configuration parameters for the primary data server.

❖ To complete Section 5 of the Installation and Setup worksheet

- 1 If your primary database type is Informix, Microsoft SQL Server, or Oracle, identify the name of the primary data server host machine.
Record the host machine name as item 5a (pds_host_name) on the “Installation and Setup worksheet” on page 24.
- 2 If your primary database type is Informix, Microsoft SQL Server, or Oracle, identify the port number of the client socket port for the primary data server.

Note Port numbers have a range of 1 to 65,535.

Record the client socket port number as item 5b (pds_port_number) on the “Installation and Setup worksheet” on page 24.

Note If the primary database type is DB2 Universal Database, you do not need to specify values for the pds_host_name and pds_port_number parameters.

- 3 If your primary database type is Informix or Microsoft SQL Server, identify the name of the primary database server.

Record the primary database server name as item 5c (pds_server_name) on the “Installation and Setup worksheet” on page 24.
- 4 Identify the name of the primary database on the primary data server.

The value of the pds_database_name parameter (worksheet item 5d) can be identical to the value of rs_source_db (worksheet item 2b), as long as the value of the pds_database_name parameter exists as a valid database at the primary database server.

If your primary database server is Oracle, you must use the value of the ORACLE_SID system environment variable (%ORACLE_SID% on Windows 2000 and 2003, or \$ORACLE_SID on UNIX).

Record the database name as item 5d (pds_database_name) on the “Installation and Setup worksheet” on page 24.
- 5 If your primary database server is DB2 Universal Database, identify the data source name (DSN) configured in the ODBC driver for the primary database. The value of the data source name parameter (pds_datasource_name) must be the DB2 database alias that identifies the primary database.

Record the appropriate value for the data source name (DSN) as item 5e (pds_datasource_name) on the “Installation and Setup worksheet” on page 24.
- 6 Identify the user ID and password that Replication Agent uses to log in to the primary data server.

Note This user ID must *not* be the same as the Replication Server maintenance ID for the primary database connection.

This primary data server user ID must have several database-level privileges for the primary database. See the Sybase Replication Agent *Primary Database Guide* for more information.

Record this primary data server user ID as item 5f (pds_username) and the password as item 5g (pds_password) on the “Installation and Setup worksheet” on page 24.
- 7 Identify the character set of the primary database.

For a list of valid Java character sets for your primary database, see Supported Encodings on the Internationalization page under Documentation for the J2SE 1.4.2 JDK at <http://java.sun.com/j2se/corejava/intl/index.jsp>.

Record the name of the equivalent Java character set as item 5h on the “Installation and Setup worksheet” on page 24.

Section 6: Replication Server parameter values for the replicate data server

Determine and record the values of the parameters for the replicate data server. These values are used in the materialization step.

❖ To complete Section 6 of the Installation and Setup worksheet

1 Identify the name of the replicate data server host machine.

Record the host machine name as item 6a (replicate host name) on the “Installation and Setup worksheet” on page 24.

2 Identify the name of the replicate database on the replicate data server.

Record the database name as item 6b (replicate database name) on the “Installation and Setup worksheet” on page 24.

Installation and Setup worksheet

Make a copy of this worksheet for each Replication Agent instance you install. Fill out the worksheet before you install the Sybase Replication Agent software.

See the Sybase Replication Agent *Reference Guide* for detailed descriptions of Replication Agent commands, options, and parameters.

Section 1: Replication Agent administration information

	Item	Description	Example value	Your value
Section 1: Replication Agent administration information	1a	Replication Agent instance type This identifies the type of primary database the Replication Agent instance works with.	oracle	
	1b	Replication Agent instance name This name must be unique among all Replication Agent instances.	ra_sales_instance	
	1c	admin_port This is the client socket port number for the Replication Agent administration port. The port number must be unique (not used by any other application on the Replication Agent host machine). Check with your System Administrator to determine which port numbers are available. Note Replication Agent for Oracle requires two port numbers. The additional one is for the RASD. By default, Replication Agent for Oracle assigns the RASD port— <i>admin port + 1</i> . This number must be unique.	10000	
	1d	Location of the interfaces file Use this item only if you plan to use the isql utility or RSM to administer the Replication Agent instance.	<i>\$\$SYBASE/interfaces</i> on UNIX, or <i>%SYBASE%\ini\sql.ini</i> on Windows 2000 or 2003	
	1e	admin_user This is the administrative user ID you use to log in to the Replication Agent instance. The default value is sa.	admin_user	
	1f	admin_pw This is the administrative password you use to log in to the Replication Agent instance. The default value is an empty string ("").	admin_pw	

Section 2: Replication Server parameter values for the primary database connection

	Item	Description	Example value	Your value
Section 2: Replication Server parameter values for the primary database connection	2a	<p>rs_source_ds</p> <p>This is a data server name representing the primary data server to which Replication Server connects.</p> <p>This value is specified in the Replication Server create connection command used to create the Replication Agent connection in the primary Replication Server.</p> <hr/> <p>Note This name can be the name of the Replication Agent instance.</p> <hr/>	ra_sales_instance	
	2b	<p>rs_source_db</p> <p>This is a database name representing the primary database to which Replication Server connects.</p> <p>This value is specified in the Replication Server create connection command used to create the Replication Agent connection in the primary Replication Server.</p> <hr/> <p>Note This name can be any name that helps you identify this as the connection to the primary database.</p> <hr/>	sales_db	
	2c	<p>Maintenance User</p> <p>This is the Replication Server Maintenance User ID associated with the connection to the primary database.</p> <p>Replication Server requires a Maintenance User ID for every database connection. This value is used in the create connection command when you create the connection to the primary database.</p> <hr/> <p>Note This user ID must be valid at the primary database.</p> <hr/>	maint_user	

	Item	Description	Example value	Your value
	2d	Maintenance User password This is the Replication Server Maintenance User password associated with the connection to the primary database.	maint_pwd	

Section 3: Replication Agent parameter values for Replication Server

	Item	Description	Example value	Your value
Section 3: Replication Agent parameter values for Replication Server	3a	rs_host_name This is the name of the Replication Server host machine.	rs_host	
	3b	rs_port_number This is the port number Replication Agent uses to log in to Replication Server. Check with your System Administrator to determine which port numbers are available.	1111	
	3c	rs_username This is the Replication Server client user ID that Replication Agent uses to log in to the primary Replication Server. This user ID must have connect source authority in the Replication Server. Note The value for the rs_username parameter must not be the same as the value for the pdb_maint_user parameter (item 2c).	rauser	
	3d	rs_password This is the Replication Server client user password that Replication Agent uses.	rapwd	
	3e	rs_charset This is the character set that Replication Agent uses when creating LTL commands for Replication Server. It must match Replication Server's character set. Note Setting this property to anything other than the character set of the primary Replication Server causes it to incorrectly do character set conversion of the LTL commands it receives from Replication Agent. Only if this value is different from the RA_JAVA_DFLT_CHARSET value (which should match the primary database's character set), will Replication Agent do character set conversion on the character data being replicated. Character set conversion slows performance.	iso_1	

Section 4: Replication Agent parameter values for the RSSD

	Item	Description	Example value	Your value
Section 4: Replication Agent parameter values for the RSSD	4a	rssd_host_name This is the name of the host machine on which the RSSD of the primary Replication Server resides.	as_host	
	4b	rssd_port_number This is the client socket port number for the RSSD data server.	1111	Note Check with your System Administrator to determine which port numbers are available.
	4c	rssd_database_name This is the database name of the RSSD of the primary Replication Server.	rsdb_RSSD	
	4d	rssd_username This is the RSSD client user ID that Replication Agent uses to access the RSSD of the primary Replication Server.	rssd_user	
	4e	rssd_password This is the RSSD client password that Replication Agent uses.	rssd_pass	

Section 5: Replication Agent parameter values for the primary data server

	Item	Description	Example value	Your value
Section 5: Replication Agent parameter values for the primary data server	5a	pds_host_name This is the name of the host machine on which the primary data server resides.	pds_host	Note This value is for Informix, Microsoft SQL Server, and Oracle only.
	5b	pds_port_number This is the client socket port number for the primary database gateway server.	1111	Note This value is for Informix, Microsoft SQL Server, and Oracle only.

Item	Description	Example value	Your value
5c	<p>pds_server_name</p> <p>This is the name of the Informix or Microsoft SQL Server primary database server.</p>	doc_23	<p>_____</p> <p>Note This value is for Informix and Microsoft SQL Server only.</p> <p>_____</p>
5d	<p>pds_database_name</p> <p>This is the name of the primary database on the primary database server.</p> <p>Replication Agent uses this value to determine which database is the primary database.</p>	sales_db	<p>_____</p> <p>Note This name can be the same as the name you gave for item 2b.</p> <p>_____</p>
5e	<p>pds_datasource_name</p> <p>This is the data source name (DSN) of the ODBC driver for the primary database.</p>	sales_db	<p>_____</p> <p>Note This value is for DB2 Universal Database only.</p> <p>_____</p>
5f	<p>pds_username</p> <p>This is the user ID that Replication Agent uses to log in to the primary database.</p>	pds_user	<p>_____</p>
5g	<p>pds_password</p> <p>This is the password for pds_username.</p>	pds_pw	<p>_____</p>
5h	<p>This is the Java-equivalent of the primary database character set.</p> <p>_____</p> <p>Note Unless you want to override the default character set that the JVM finds on your system, you do <i>not</i> have to explicitly set the character set-related environment variable, RA_JAVA_DFLT_CHARSET. However, the system default character set must match the character set of the primary database.</p> <p>_____</p>	ISO8859_1	<p>_____</p>

Section 6: Replication Server parameter values for the replicate data server

	Item	Description	Example value	Your value
Section 6: Replication Server parameter values for the replicate data server	6a	<p>Replicate host name</p> <p>The name of the host machine on which the replicate data server resides.</p> <p>You need this name when you create subscriptions. See the Replication Server documentation for more information.</p>	rds_host	
	6b	<p>Replicate database name</p> <p>This is the name of the replicate database on the replicate database server.</p> <p>You need this name when you create subscriptions. See the Replication Server documentation for more information.</p>	replicate_db	
	6c	<p>ddl_username</p> <p>This is the standby database client user ID that Replication Server uses to log in to the standby database to apply DDL commands.</p> <p>This user ID must have authority in the standby database to create any schema or issue any DDL command replicated from the primary database.</p> <p>The Replication Agent sends this ID and password to Replication Server together with any DDL command executed at the primary database.</p> <p>Note The value for the ddl_username must not be the same as the value of the maintenance user defined in Replication Server for the standby connection.</p>	<p>_____</p> <p>Note This value is for Oracle only.</p> <p>_____</p> <p>scott</p>	
	6d	<p>ddl_password</p> <p>This is the standby database client user password that Replication Server uses with the value for ddl_username</p>	<p>_____</p> <p>Note This value is for Oracle only.</p> <p>_____</p> <p>tiger</p>	

See also

The following Sybase Replication Agent guides contain more information about installation and configuration:

- The Sybase Replication Agent *Administration Guide* for more information about the initial configuration of Replication Agent parameters for Replication Server.
- The Sybase Replication Agent *Primary Database Guide* for more information about the initial configuration of the primary database you are replicating.
- The Sybase Replication Agent *Reference Guide* for more general information about the use of the `ra_config` command.
- The Replication Server *Reference Manual* for more information about Replication Server commands and parameters.

What's next

Proceed to Chapter 3, “Installing Sybase Replication Agent.”

Note If you are migrating from Sybase Replication Agent version 12.5 to version 12.6, see the Sybase Replication Agent *Primary Database Guide* for database-specific details on migration.

Installing Sybase Replication Agent

This chapter describes how to install Sybase Replication Agent version 12.6 software on a Linux, Microsoft Windows, or UNIX platform, and how to create, configure, and start up a Sybase Replication Agent instance.

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Note In this document, Linux is treated as a UNIX platform, unless the specific context requires a distinction.

Before you begin

Complete the following pre-installation tasks *before* you install the Sybase Replication Agent 12.6 software:

- Read the release bulletin.
- Plan for system requirements.
- Verify the system environment.
- Complete the Installation and Setup worksheet.

The following sections describe each pre-installation task.

Read the release bulletin

Read the Sybase Replication Agent 12.6 release bulletin for current information about specific requirements of Sybase Replication Agent.

The release bulletin provides:

- Product information that might not be included in the Sybase Replication Agent guides, such as known issues and documentation updates
- Additional information about installing and setting up the Sybase Replication Agent that was not available until after the software and documentation was released

Note If you are migrating from Sybase Replication Agent version 12.5 to version 12.6, see the Sybase Replication Agent *Primary Database Guide* for database-specific details on migration.

Plan for system requirements

Installing Sybase Replication Agent requires adequate disk space and RAM on the Sybase Replication Agent host machine. The Sybase Replication Agent host also requires network connectivity to the primary database and the Replication Server, and local access to the mirror log devices.

Note Sybase Replication Agent for Oracle must be installed on a machine from which it can directly access the Oracle redo logs.

See “System requirements” on page 10 for more information about:

- Platform and operating system requirements
- Memory, disk space, and media device requirements
- Compatibility with other Sybase products

See the Sybase Replication Agent release bulletin for additional current information about system requirements.

Warning! Do not install the Sybase Replication Agent 12.6 software in the same installation directory with the following Sybase products:

- Replication Server® version 12.5 or earlier
- Adaptive Server® Enterprise version 12.5.0.x or earlier
- Open Client™ or Open Server™ version 12.5.0 or earlier
- OpenSwitch version 12.5 or earlier
- DirectConnect™ version 12.5 or earlier

Doing so incapacitates these products, and it can adversely affect other Sybase products.

You cannot reverse this with an uninstallation, as that could remove some of the required components of the older Sybase products that were updated by installing Sybase Replication Agent 12.6. For this reason, Sybase recommends that you back up your current Sybase installation directory before installing Sybase Replication Agent 12.6.

Verify the system environment

Before you install the Sybase Replication Agent 12.6 software, verify the following in your Sybase Replication Agent system environment:

- Primary database
Verify that the primary data server and primary database are online and configured properly for your production systems. For more information, refer to the documentation provided by your database software vendor.
- Replication Server
Verify that the Replication Server is installed, configured, and running. For more information, refer to the Replication Server installation and configuration guides for your platform.

Complete the Installation and Setup worksheet

Complete the Installation and Setup worksheet in Chapter 2, “Preparing for Installation.” The worksheet organizes the Sybase Replication Agent configuration parameter values that you need to set up and configure a Sybase Replication Agent instance.

See “Completing the Installation and Setup worksheet” on page 17 for detailed instructions.

Setting up connectivity to the primary database

Replication Agent connects to primary data servers using a JDBC driver that implements the JDBC 2.0 standard.

You must install the correct connectivity driver for your primary database environment before installing Sybase Replication Agent.

In general, JDBC drivers are available with client/server products for your database server. Check with your Database Administrator if you are not sure that the correct driver is installed.

Note The JDBC driver for Microsoft SQL Server is provided with the Sybase Replication Agent software.

The following sections contain procedures for setting up the JDBC drivers for primary data servers.

Note Only one version of a vendor's JDBC driver should be in the CLASSPATH. If more than one version is in the CLASSPATH Replication Agent will have problems connecting to the primary database.

DB2 Universal Database JDBC driver

The JDBC driver for DB2 Universal Database is incorporated in the DB2 Java Enablement component of the DB2 client.

Note The DB2 JDBC driver is effectively a JDBC/ODBC bridge. For each primary database, you must configure an ODBC data source name (DSN) in the DB2 client software.

If the Sybase Replication Agent is installed on the same host machine as the DB2 Universal Database primary data server, a separate DB2 client is not required for connectivity.

If the Replication Agent host machine is not the same as the DB2 Universal Database host, you must install the DB2 Administration Client with the DB2 Java Enablement component on the Replication Agent host machine.

For information on installing the DB2 Administration Client on your Replication Agent host machine, see the IBM publication, *DB2 Universal Database and DB2 Connect, Installation and Configuration Supplement*.

❖ To set up a JDBC driver for DB2 Universal Database servers

- 1 When you install a DB2 client on a UNIX platform, you need to add the JDBC driver to your CLASSPATH variable.

Add the following to the *.login* file of the user account that starts and stops the Replication Agent instance:

```
setenv CLASSPATH /path_name/sqlllib/java/db2java.zip:$CLASSPATH
```

where *path_name* is the path where you installed the DB2 client. You must log out and log back in for this change to take effect, or issue the command source *.login* after the change.

Note When you install a DB2 client on Windows 2000 or 2003, the installation program modifies the CLASSPATH variable automatically.

- 2 Execute the *usejdbc2* script in the *path_name/sqllib/java12* directory to configure the Administration Client to use JRE version 1.2 and the JDBC 2.0 driver.

Note You must run the *usejdbc2* script after you install the DB2 Administration Client on either UNIX or Windows.

- 3 For each primary database (regardless of platform), you must configure an ODBC data source name (DSN) in the DB2 client software. Make a note of the *database name* and *database alias* when you configure the data source.

You must record the database name and database alias in the following Replication Agent configuration parameters:

- *pds_database_name* – ODBC database name
- *pds_datasource_name* – ODBC database alias

Informix and Oracle JDBC drivers

JDBC drivers for Informix and Oracle databases are provided by the database vendors. If the JDBC driver for your database is not already installed, obtain the appropriate driver from the database vendor or the vendor's Web site:

- For Informix:

<http://www.ibm.com/software/data/informix/tools/jdbc/>

- For Oracle:

http://technet.oracle.com/software/tech/java/sqlj_jdbc/content.html

❖ To set up a JDBC driver for Informix or Oracle data servers

- 1 Install the JDBC driver on the machine on which Sybase Replication Agent resides or where Sybase Replication Agent can access it.
 - 2 Add the location of the JDBC driver to the *CLASSPATH* environment variable.
- For Oracle:

On UNIX, add the following to the *.login* file of the user account that is used to start and stop the Replication Agent instance:

```
setenv CLASSPATH /path_name/ojdbc14.jar:$CLASSPATH
```

where *path_name* is the path where you installed the Oracle JDBC driver. You must log out and log back in for this change to take effect, or issue the command `source .login` after the change.

On Windows 2000 or 2003, go to Start | Settings | Control Panel | System | Environment, and add the following to the existing CLASSPATH environment variable, using the semicolon (;) as the path separator, or create the path in the User Variables panel:

```
drive:\path_name\ojdbc14.jar
```

where:

- *drive* is the drive letter.
- *path_name* is the name of the path where you installed the Oracle JDBC driver.

Click Apply, then OK.

- For Informix:

On UNIX, add the following to the *.login* file of the user account that is used to start and stop the Replication Agent instance:

```
setenv CLASSPATH /path_name/ixjjdbc.jar:$CLASSPATH
```

where *path_name* is the name of the path where you installed the Informix JDBC driver. You must log out and log back in for this change to take effect, or issue the command `source .login` after the change.

On Windows 2000 or 2003, go to Start | Settings | Control Panel | System | Environment, and add the following to your existing CLASSPATH environment variable, using the semicolon (;) as the path separator, or create the path in the User Variables panel:

```
drive:\path_name\ixjjdbc.jar
```

where:

- *drive* is the drive letter.
- *path_name* is the path to the directory where you installed the Informix JDBC driver.

Click Apply, then OK.

- 3 On Oracle, the Oracle primary server must be running the Transparent Network Substrate (TNS) Listener Service. See the Oracle networking document for more information about TNS.

Microsoft SQL Server JDBC driver

The JDBC driver for Microsoft SQL Server is installed automatically with the Sybase Replication Agent 12.5 software. If you create a Replication Agent instance for Microsoft SQL Server, the start-up script (*ra*) includes the JDBC driver in its CLASSPATH command line option.

Installing the Sybase Replication Agent software

The Sybase Replication Agent 12.6 product is distributed on the Sybase Replication Agent 12.6 distribution media. See the Sybase Replication Agent release bulletin for the current distribution media catalog numbers.

Note Sybase Replication Agent for Oracle must be installed on a machine from which it can directly access the Oracle redo logs.

The following sections describe how to install the Sybase Replication Agent 12.6 software on a Linux, Microsoft Windows, or UNIX platform, using InstallShield:

- “Installing with the GUI wizard” on page 42
- “Installing in console mode” on page 46

All procedures give you the following installation options:

- *Typical* – The Sybase Replication Agent software product will be installed with the recommended products and features.
- *Full* – All software products and features on the CD will be installed.
- *Custom* – From a list of all products and features on the CD, you can select the specific products and features that you want to install.

The following products and features are included on the Sybase Replication Agent 12.6 distribution media:

- Sybase Replication Agent 12.6
- jConnect (the Sybase JDBC driver)
 - Debug Classes (for advanced jConnect troubleshooting)
 - Javadocs
 - Documentation for jConnect (in English, French, German, and Japanese)
 - Free utilities for jConnect
 - isql (the JDBC version of the interactive SQL isql utility)
 - Ribo (a tool for troubleshooting JDBC-to-database communications)
 - Samples (jConnect sample code)
- SySAM (the Sybase Software Asset Management license manager)
- Shared (JREs for each supported platform)

Minimal installation

For a minimal Sybase Replication Agent installation, choose the Custom installation option, and select *only* the Sybase Replication Agent 12.6 product. The following products and features are installed automatically when you select only the Sybase Replication Agent 12.6 product:

- Sybase Replication Agent 12.6
- jConnect
- SySAM
- Shared

If you encounter problems during the installation, see “Installation troubleshooting” on page 55.

Note For information about installing the Replication Server 12.6 software, which is included on separate distribution media in the Sybase Replication Agent 12.6 solution package for each platform, see the Replication Server 12.6 installation and configuration guides for your platform.

Installing with the GUI wizard

This installation procedure uses the InstallShield wizard in GUI mode (the GUI wizard), which requires either:

- A GUI environment (with a display, keyboard, and pointing device) on the Sybase Replication Agent host machine, or
- A remote machine configured to provide a GUI environment for the Sybase Replication Agent host machine.

See “Installing in console mode” on page 46 for information about installing the Sybase Replication Agent software in an interactive text (or console) mode.

❖ To install Sybase Replication Agent with the GUI wizard

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).
- 2 Close all non-essential applications, and minimize any open windows.
- 3 Insert the Sybase Replication Agent 12.6 distribution CD in the CD-ROM drive.
- 4 Start the InstallShield GUI wizard:
 - On Microsoft Windows platforms, the InstallShield GUI wizard should start automatically.

If the GUI wizard does not start automatically, select Start | Run, and enter the following in the Open box:

```
x:\setupwin32.exe
```

where *x*: is your CD-ROM drive.

You can also start the GUI wizard from Windows Explorer by double-clicking the *setupwin32.exe* file icon.

- On UNIX platforms, enter the following at the command prompt:

```
cd /cdrom
./setup_type
```

where *setup_type* is one of the following strings that corresponds to the UNIX platform type:

- setupaix

- `setuphp11x`
- `setupsolaris`
- `setuplinux`

5 Click Next to continue.

Note You can click Cancel to exit the GUI wizard and stop the installation at any point before it is complete.

6 Select your geographic location in the license agreement and copyright notice window.

7 Read the Sybase license agreement and select “I agree.”

Note You must agree to the terms of the software license before you can continue the installation.

Click Next to continue.

8 Specify an installation directory in the Destination window.

The default installation directory is:

- `%SYBASE%` or `c:\sybase` on Microsoft Windows platforms
- `$SYBASE` or `/opt/sybase` on UNIX platforms

Click Next to accept the default installation directory, or do one of the following:

- Click Browse to select an installation directory in the file browser, then click Next, or
- Enter a directory name in the Destination Directory box, then click Next.

If you enter a directory name that does not exist, InstallShield prompts:

```
The directory does not exist.  
Do you want to create it?
```

Click Yes to create the installation directory you specified.

If the directory you specified (either by default or by entering a directory name) exists, InstallShield prompts:

```
You have chosen to install into an existing
```

directory. Any older versions of the products you choose to install that are detected in this directory will be replaced. Do you want to continue with installation into this directory?

If you click Yes, and:

- The Sybase products were installed with Studio Installer (for example, Replication Server version 12.5), InstallShield overwrites the common components.
- The products were installed with InstallShield, InstallShield determines the correct course of action.

Note On Microsoft Windows platforms, if you are prompted to overwrite a DLL, click Yes *only* if the version of the new DLL is newer than the one InstallShield is attempting to overwrite.

9 Select the type of installation from three options:

- Typical
- Full
- Custom

Typical If you choose Typical, InstallShield displays the following products and features:

- Sybase Replication Agent 12.6
- jConnect
 - Free Utilities for jConnect
 - jisql
- SySAM
- Shared

Full If you choose Full, InstallShield displays the complete list of products and features on the Sybase Replication Agent 12.6 distribution CD:

- Sybase Replication Agent 12.6
- jConnect
 - Debug Classes
 - Javadocs

- Documentation for jConnect:
 - English documentation
 - French documentation
 - German documentation
 - Japanese documentation
- Free Utilities for jConnect:
 - jisql
 - Ribo
- Samples
- SySAM
- Shared

Custom If you choose Custom, InstallShield displays the same products and features as the Full installation list, with check boxes that allow you to select the specific products and features you want to install.

For a minimal Sybase Replication Agent installation, choose Custom, and select *only* the Sybase Replication Agent 12.6 product. The following products and features are installed automatically when you select only the Sybase Replication Agent product:

- Sybase Replication Agent 12.6
- jConnect
- SySAM
- Shared

After you select the products and features for a Custom installation and click Next, InstallShield displays the products and features you selected.

- 10 Click Next to continue.

InstallShield installs the components in the installation directory you specified, and displays an installation progress indicator.

If errors occur during the installation, InstallShield displays error messages. In the event of an installation error, exit the InstallShield wizard to correct the cause of the error, then restart InstallShield. For more information, see “Installation troubleshooting” on page 55.

If the software is installed successfully, InstallShield displays a final window confirming the successful installation, and reminding you to check for updates on the Sybase downloads Web page.

- 11 Click Next, and then click Finish to complete the installation and shut down InstallShield.

To verify that the software components were installed correctly, see “Verifying the installation” on page 61.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, you must complete the following post-installation tasks:

- Set up the SYBASE environment on the Sybase Replication Agent host machine. See “Setting up the SYBASE environment” on page 57 for more information.
- Register the Sybase Replication Agent license certificate with the Sybase Software Asset Management (SySAM) license manager. See “Registering license certificates” on page 58 for more information.

Installing in console mode

You can install the Sybase Replication Agent software in an interactive text (or console) mode, using the same steps as those described in “Installing with the GUI wizard” on page 42, except that:

- You invoke the InstallShield wizard at the command prompt, using the `-console` option, and
- You use only the keyboard to select all of the installation options.

This installation procedure uses the InstallShield wizard in console mode, which requires either:

- A display and keyboard on the Sybase Replication Agent host machine, or
- A display and keyboard on a remote machine configured to control the Sybase Replication Agent host machine.

Note This installation procedure does *not* require a pointing device or a GUI environment to install the Sybase Replication Agent software.

See “Installing with the GUI wizard” on page 42 for information about installing the Sybase Replication Agent software in a GUI environment.

❖ **To install the Sybase Replication Agent in console mode**

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).
- 2 Close all non-essential applications, and minimize any open windows.
- 3 Insert the Sybase Replication Agent 12.6 distribution CD in the CD-ROM drive.

Note If the InstallShield GUI wizard starts automatically on a Microsoft Windows platform, choose Cancel to exit the GUI wizard.

- 4 Open an operating system command window, and set the CD-ROM drive as the current drive.
- 5 Start the InstallShield wizard in console mode:
 - On Microsoft Windows platforms:


```
setupwin32 -console
```
 - On UNIX platforms:


```
./setup_type -console
```

where *setup_type* is one of the following strings that corresponds to the UNIX platform type:

- setupaix
- setuphp11x
- setupsolaris
- setuplinux

The InstallShield wizard starts and displays the Welcome window.

- 6 Follow the remaining wizard prompts to install the Sybase Replication Agent 12.6 software.

See “Installing with the GUI wizard” on page 42 for a description of all of the wizard prompts.

InstallShield installs the components in the installation directory you specified, and displays an installation progress indicator.

If errors occur during the installation, InstallShield displays error messages. In the event of an installation error, exit the InstallShield wizard to correct the cause of the error, then restart InstallShield. For more information, see “Installation troubleshooting” on page 55.

If the software is installed successfully, InstallShield displays a final window confirming the successful installation, and reminding you to check for updates on the Sybase downloads Web page.

To verify that the software components were installed correctly, see “Verifying the installation” on page 61.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, you must complete the following post-installation tasks:

- Set up the SYBASE environment on the Sybase Replication Agent host machine. See “Setting up the SYBASE environment” on page 57 for more information.
- Register the Sybase Replication Agent license certificate with the Sybase Software Asset Management (SySAM) license manager. See “Registering license certificates” on page 58 for more information.

Using a response file for installation

A response file is a file that contains responses to all of the InstallShield wizard prompts. You can install the Sybase Replication Agent 12.6 software using a response file in either console mode or silent mode.

The following sections describe how to use a response file for installation:

- Creating a response file
- Installing in console mode with a response file
- Installing in silent mode

Creating a response file

There are two ways to create a response file:

- Editing a *template* file that contains default responses to all of the wizard prompts

- Recording the actual responses to InstallShield wizard prompts, while the wizard runs in either GUI mode or console mode

Note Recording responses to the InstallShield wizard installs the Sybase Replication Agent software, and then generates the template file *after* the installation is complete.

You can create a template file without running the InstallShield wizard (and installing the software) by invoking the InstallShield wizard at the command prompt with the `-options-template` option.

You can record your responses to the InstallShield wizard in either GUI mode or console mode, while installing the software, by invoking the InstallShield wizard at the command prompt with the `-options-record` option.

Use one of the following procedures to create a response file.

❖ **To create a response file from a template**

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).
- 2 Close all non-essential applications, and minimize any open windows.
- 3 Insert the Sybase Replication Agent 12.6 distribution CD in the CD-ROM drive.

Note If the InstallShield GUI wizard starts automatically on a Microsoft Windows platform, click Cancel to exit the GUI wizard.

- 4 Open an operating system command window, and set the CD-ROM drive as the current drive.
- 5 Invoke the InstallShield wizard at the command prompt, using the `-options-template` option:

- On Microsoft Windows platforms, enter:

```
setupwin32 -options-template RAX.resp
```

where *RAX.resp* is the full path to the response (template) file you want to create.

Note that there is no space in the `-options-template` string.

- On UNIX platforms, enter:

```
./setup_type -options-template RAX.resp
```

where:

- `setup_type` is one of the following strings that corresponds to the UNIX platform type:
 - `setupaix`
 - `setuphp11x`
 - `setupsolaris`
 - `setuplinux`
- `RAX.resp` is the full path to the response (template) file you want to create.

Note that there is no space in the `-options-template` string.

InstallShield creates a template response file with the name you specified. The template file contains the default responses for each wizard prompt.

- 6 Use your preferred text editor to edit the template file, and record the values you want to use to install the Sybase Replication Agent software.

❖ To create a response file by recording a GUI installation

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).
- 2 Close all non-essential applications, and minimize any open windows.
- 3 Insert the Sybase Replication Agent 12.6 distribution CD in the CD-ROM drive.

Note If the InstallShield GUI wizard starts automatically on a Microsoft Windows platform, click Cancel to exit the GUI wizard.

- 4 Open an operating system command window, and set the CD-ROM drive as the current drive.

- 5 Invoke the InstallShield wizard at the command prompt, using the `-options-record` option:

- On Microsoft Windows platforms, enter:

```
setupwin32 -options-record RAX.resp
```

where *RAX.resp* is the full path to the response (template) file you want to create.

Note that there is no space in the `-options-record` string.

- On UNIX platforms, enter:

```
./setup_type -options-record RAX.resp
```

where:

- *setup_type* is one of the following strings that corresponds to the UNIX platform type:
 - `setupaix`
 - `setuphp11x`
 - `setupsolaris`
 - `setuplinux`
- *RAX.resp* is the full path to the response (template) file you want to create.

Note that there is no space in the `-options-record` string.

The InstallShield wizard starts in GUI mode, and it captures all of the prompt responses in a file with the name you specified.

See “Installing with the GUI wizard” on page 42 for a description of all of the wizard prompts.

In the event of an installation error, exit the InstallShield wizard to correct the cause of the error, and then restart InstallShield. For more information, see “Installation troubleshooting” on page 55.

❖ To create a response file by recording a console installation

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).
- 2 Close all non-essential applications, and minimize any open windows.

- 3 Insert the Sybase Replication Agent 12.6 distribution CD in the CD-ROM drive.

Note If the InstallShield GUI wizard starts automatically on a Microsoft Windows platform, click Cancel to shut down the GUI wizard.

- 4 Open an operating system command window, and set the CD-ROM drive as the current drive.
- 5 Invoke the InstallShield wizard at the command prompt, using the `-console` and `-options-record` options:

- On Microsoft Windows platforms, enter:

```
setupwin32 -console -options-record RAX.resp
```

where *RAX.resp* is the full path to the response (template) file you want to create.

Note that there is no space in the `-options-record` string.

- On UNIX platforms, enter:

```
./setup_type -console -options-record  
RAX.resp
```

where:

- *setup_type* is one of the following strings that corresponds to the UNIX platform type:
 - `setupaix`
 - `setuphp11x`
 - `setupsolaris`
 - `setuplinux`
- *RAX.resp* is the full path to the response (template) file you want to create.

Note that there is no space in the `-options-record` string.

The InstallShield wizard starts in console mode, and it captures all of the prompt responses in a file with the name you specified.

See “Installing with the GUI wizard” on page 42 for a description of all of the wizard prompts.

In the event of an installation error, exit the InstallShield wizard to correct the cause of the error, then restart InstallShield. For more information, see “Installation troubleshooting” on page 55.

Installing in console mode with a response file

A console mode installation using a response file allows you to accept all of the defaults as you move through an interactive text installation, because all of the default values are supplied by the response file.

Follow the same steps as you would for a standard console mode installation, but invoke the InstallShield wizard at the command prompt as follows:

- On Microsoft Windows platforms, enter:

```
setupwin32 -console -options RAX.resp  
-W SybaseLicense.agree=true
```

where *RAX.resp* is the full path to the response file.

- On UNIX platforms, enter:

```
./setup_type -console -options RAX.resp  
-W SybaseLicense.agree=true
```

where:

- *setup_type* is one of the following strings that corresponds to the UNIX platform type:
 - *setupaix*
 - *setuphp11x*
 - *setupsolaris*
 - *setuplinux*
- *RAX.resp* is the full path to the response file.

Note The `-W SybaseLicense.agree=true` command option makes your agreement with the Sybase License Agreement the default option in the console mode installation.

See “Installing with the GUI wizard” on page 42 for a description of all of the wizard prompts.

In the event of an installation error, exit the InstallShield wizard to correct the cause of the error, then restart InstallShield. For more information, see “Installation troubleshooting” on page 55.

To verify that the software components were installed correctly, see “Verifying the installation” on page 61.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, you must complete the following post-installation tasks:

- Set up the SYBASE environment on the Sybase Replication Agent host machine. See “Setting up the SYBASE environment” on page 57 for more information.
- Register the Sybase Replication Agent license certificate with the Sybase Software Asset Management (SySAM) license manager. See “Registering license certificates” on page 58 for more information.

Installing in silent mode

The InstallShield silent mode, sometimes referred to as an “unattended installation,” allows you to install the software with a response file to set default values, without any interaction required on your part.

Follow the same steps as you would for a standard console mode installation, but invoke the InstallShield wizard at the command prompt as follows:

- On Microsoft Windows platforms, enter:

```
setupwin32 -silent -options RAX.resp  
-W SybaseLicense.agree=true
```

where *RAX.resp* is the full path to the response file.

- On UNIX platforms, enter:

```
./setup_type -silent -options RAX.resp  
-W SybaseLicense.agree=true
```

where:

- *setup_type* is one of the following strings that corresponds to the UNIX platform type:
 - *setupaix*
 - *setuphp11x*
 - *setupsolaris*

- `setuplinux`
- `RAX.resp` is the full path to the response file.

Note The `-W SybaseLicense.agree=true` command option makes your agreement with the Sybase License Agreement the default option in the silent mode installation.

In the event of an installation error, see “Installation troubleshooting” on page 55.

To verify that the software components were installed correctly, see “Verifying the installation” on page 61.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, you must complete the following post-installation tasks:

- Set up the SYBASE environment on the Sybase Replication Agent host machine. See “Setting up the SYBASE environment” on page 57 for more information.
- Register the Sybase Replication Agent license certificate with the Sybase Software Asset Management (SySAM) license manager. See “Registering license certificates” on page 58 for more information.

Installation troubleshooting

If you encounter errors during installation, invoke the InstallShield wizard with the `-is:log` option to record the installation errors in a log file. After the wizard runs, check the log file to view a record of the installation process.

You can record installation errors with the InstallShield wizard in either GUI or console mode (with or without a response file), and in silent mode.

Use the following procedure to record an installation log file with the InstallShield wizard in GUI mode.

❖ To record an installation log file

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).

- 2 Close all non-essential applications, and minimize any open windows.
- 3 Insert the Sybase Replication Agent 12.6 distribution CD in the CD-ROM drive.

Note If the InstallShield GUI wizard starts automatically on a Microsoft Windows platform, click Cancel to exit the GUI wizard.

- 4 Open an operating system command window, and set the CD-ROM drive as the current drive.
- 5 Invoke the InstallShield wizard at the command prompt, using the `-is:log` option:

- On Microsoft Windows platforms:

```
setupwin32 -is:log $SYBASE\RAX_err.log
```

where *RAX_err.log* is the full path to the installation error log file you want to create.

- On UNIX platforms:

```
./setup_type -is:log $SYBASE/RAX_err.log
```

where:

- *setup_type* is one of the following strings that corresponds to the UNIX platform type:
 - `setupaix`
 - `setuphp11x`
 - `setupsolaris`
 - `setuplinux`
- *RAX_err.log* is the full path to the installation error log file you want to create.

Note You can use the `-is:log` option, along with the `-console` or `-silent` options, to record an installation log file in non-GUI wizard modes.

- 6 Follow the wizard prompts to install the Sybase Replication Agent software.

See “Installing with the GUI wizard” on page 42 for a description of all of the wizard prompts.

InstallShield attempts to install the software, and creates an installation log file with the name you specified.

- 7 After the wizard exits, examine the contents of the installation log file to determine the cause of the errors.

Setting up the SYBASE environment

After you install the Sybase Replication Agent 12.6 software, and *before* you start the Sybase Replication Agent or run any Sybase Replication Agent utilities, you must set up the SYBASE environment on the Sybase Replication Agent host machine.

Setting up the SYBASE environment sets the value of an environment variable (%SYBASE% on Microsoft Windows platforms and \$\$SYBASE on UNIX platforms) to point to the Sybase Replication Agent installation directory.

Note You must set up the SYBASE environment on the Sybase Replication Agent host machine *before* you register license certificates.

❖ To set up the SYBASE environment

- 1 Log in to the Sybase Replication Agent host machine using an operating system user account with authority to start, stop, and administer the Sybase Replication Agent instance (for example, the “sybase” user).
- 2 At the command prompt, execute the *SYBASE* batch or script file:

- On Microsoft Windows platforms:

```
c : \ %SYBASE%\SYBASE
```

where %SYBASE% is the path to the Sybase Replication Agent installation directory.

- On UNIX platforms:

```
source $SYBASE/SYBASE.csh
```

where `$SYBASE` is the path to the Sybase Replication Agent installation directory.

Registering license certificates

After you successfully install the Sybase Replication Agent 12.6 software and set up the `SYBASE` environment, register the Sybase Replication Agent license certificate with the Sybase Software Asset Management (SySAM) license manager. See Chapter 1, “Sybase Software Asset Management (SySAM)” for more information on SySAM.

Uninstalling the Sybase Replication Agent software

InstallShield includes an *Uninstall* wizard that removes the Sybase Replication Agent 12.6 software and its related components.

You can run the Uninstall wizard in either GUI mode or console mode. Sybase recommends that you use the GUI mode.

InstallShield removes only the files and directories for the products and features that you select in the Uninstall wizard. However, some files (such as log and configuration files) are left intact for administrative purposes, even if you choose to uninstall all of the products and features.

Note InstallShield does *not* remove the root installation directory (`%SYBASE%` or `$SYBASE`), and the `SYSAM-1_0` directory and its subdirectories.

Uninstalling on a Windows platform

Before uninstalling the Sybase Replication Agent software, you must:

- Log in to the Sybase Replication Agent host machine using an account with administrator privileges.

- Shut down all Sybase Replication Agent instances and all other processes for the components you are uninstalling.

Use one of the following procedures to uninstall the Sybase Replication Agent software on a Microsoft Windows platform.

❖ **To uninstall in GUI mode on Windows platforms**

- 1 Choose one of the following methods to start the Uninstall wizard in GUI mode:

- From the Start menu, select Settings | Control Panel | Add/Remove Programs.
- Enter the following at the command prompt:

```
%SYBASE%\uninstall\RAX-12_6\uninstaller
```

- Click Start | Run and then enter:

```
%SYBASE%\uninstall\RAX-12_6\uninstaller
```

- In Windows Explorer, double-click the *uninstaller.exe* file icon.

The Uninstall wizard window opens.

- 2 Click Next.
- 3 Select the products and features that you want to uninstall from the list of installed products and features, then click Next.

The default option is *all* installed products and features.

- 4 Verify the summary information, then click Next.

InstallShield removes the files and directories associated with the products and features you selected.

- 5 Click Finish.

Note You may be prompted to decide whether to remove shared files. Sybase recommends that you do *not* remove shared files.

❖ **To uninstall in console mode on Windows platforms**

- 1 Open an operating system command window.
- 2 Set the Sybase installation directory as the current directory:

```
cd %SYBASE%
```

where `%SYBASE%` is the path to the Sybase Replication Agent installation directory.

- 3 Invoke the Uninstall wizard at the command prompt, using the `-console` option:

```
uninstall\RAX-12_6\uninstaller -console
```

The Uninstall wizard displays the Welcome window.

- 4 Follow the remaining Uninstall wizard prompts to uninstall the Sybase Replication Agent software.

Note You may be prompted to decide whether to remove shared files. Sybase recommends that you do *not* remove shared files.

Uninstalling on a UNIX platform

Before uninstalling the Sybase Replication Agent software, you must:

- Log in to the Sybase Replication Agent host machine using an account with administrator privileges.
- Shut down all Sybase Replication Agent instances and all other processes for the components you are uninstalling.

Use one of the following procedures to uninstall the Sybase Replication Agent software on a UNIX platform.

❖ To uninstall in GUI mode on UNIX platforms

- 1 Invoke the Uninstall wizard at the command prompt:

```
$$SYBASE/uninstall/RAX-12_6/uninstaller
```

where `$$SYBASE` is the path to the Sybase Replication Agent installation directory.

The Uninstall wizard window opens.

- 2 Click Next.
- 3 Select the products and features that you want to uninstall from the list of installed products and features, then click Next.

The default option is *all* installed products and features.
- 4 Verify the summary information, then click Next.

InstallShield removes the files and directories associated with the products and features you selected.

- 5 Click Finish.

Note You may be prompted to decide whether to remove shared files. Sybase recommends that you do *not* remove shared files.

❖ **To uninstall in console mode on UNIX platforms**

- 1 Open an operating system command window.
- 2 Set the Sybase installation directory as the current directory:

```
cd $SYBASE
```

where `$SYBASE` is the path to the Sybase Replication Agent installation directory.

- 3 Invoke the Uninstall wizard at the command prompt, using the `-console` option:

```
uninstall/RAX-12_6/uninstaller -console
```

The Uninstall wizard displays the Welcome window.

- 4 Follow the remaining Uninstall wizard prompts to uninstall the Sybase Replication Agent software.

Note You may be prompted to decide whether to remove shared files. Sybase recommends that you do *not* remove shared files.

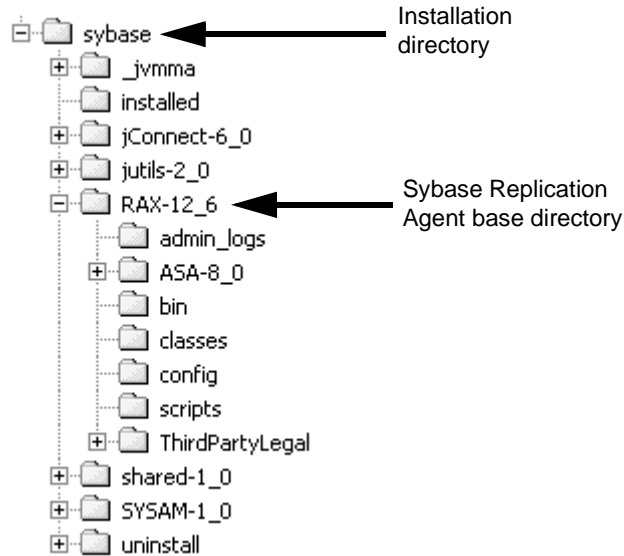
Verifying the installation

InstallShield creates subdirectories in the Sybase Replication Agent installation directory (`%SYBASE%` on Microsoft Windows platforms and `$SYBASE` on UNIX platforms) for the Sybase Replication Agent 12.6 software, and certain other software that the Sybase Replication Agent requires.

Figure 3-1 shows a typical Sybase Replication Agent software installation on a Microsoft Windows platform.

Note The same subdirectories are created in the installation directory on UNIX platforms.

Figure 3-1: Example installation on Microsoft Windows platform



SYBASE environment scripts

InstallShield creates SYBASE environment scripts that set PATH and other environment variables on the Sybase Replication Agent host machine. These scripts allow you to run the Sybase Replication Agent software and its utilities from any directory on the host machine.

The SYBASE environment scripts are created in the Sybase installation directory and named as follows:

- *SYBASE.bat* on Microsoft Windows platforms
- *SYBASE.sh* or *SYBASE.csh* on UNIX platforms

You can use these scripts to permanently set the environment variables, or you can use them to temporarily change environment variables by running (or sourcing) the scripts each time you log in to the Sybase Replication Agent host machine.

Note On Microsoft Windows platforms, InstallShield sets up the SYBASE environment automatically when you install the Sybase Replication Agent software.

For more information, see “Setting up the SYBASE environment” on page 57.

What’s next

Refer to the Sybase Replication Agent *Administration Guide* for information about creating a Sybase Replication Agent instance, and setting up the Sybase Replication Agent system.

Note If you are migrating from Sybase Replication Agent version 12.5 to version 12.6, see the Sybase Replication Agent *Primary Database Guide* for database-specific details on migration.

Glossary

This glossary describes Sybase Replication Agent terms used in this book.

Adaptive Server

The brand name for Sybase relational database management system (RDBMS) software products.

- *Adaptive Server Enterprise* manages multiple, large relational databases for high-volume online transaction processing (OLTP) systems and client applications.
- *Adaptive Server IQ* manages multiple, large relational databases with special indexing algorithms to support high-speed, high-volume business intelligence, decision support, and reporting client applications.
- *Adaptive Server Anywhere* manages relational databases with a small DBMS footprint, which is ideal for embedded applications and mobile device applications.

See also **DBMS** and **RDBMS**.

atomic materialization

A materialization method that copies subscription data from a primary database to a standby database in a single, atomic operation. No changes to primary data are allowed until the subscription data is captured at the primary database. See also **bulk materialization** and **nonatomic materialization**.

BCP utility

A bulk copy transfer utility that provides the ability to load multiple rows of data into a table in a target database. See also **bulk copy**.

bulk copy

An Open Client interface for the high-speed transfer of data between a database table and program variables. It provides an alternative to using SQL insert and select commands to transfer data.

bulk materialization

A materialization method whereby subscription data in a standby database is initialized outside of the replication system. You can use bulk materialization for subscriptions to table replication definitions or function replication definitions. See also **atomic materialization** and **nonatomic materialization**.

client	In client/server systems, the part of the system that sends requests to servers and processes the results of those requests. See also client application .
client application	Software that is responsible for the user interface, including menus, data entry screens, and report formats. See also client .
commit	An instruction to the DBMS to make permanent the changes requested in a transaction. See also transaction . Contrast with rollback .
data client	A client application that provides access to data by connecting to a data server. See also client , client application , and data server .
data distribution	A method of locating (or placing) discrete parts of a single set of data in multiple systems or at multiple sites. Data distribution is distinct from data replication, although a data replication system can be used to implement or support data distribution. Contrast with data replication .
data replication	The process of copying data to remote locations, and then keeping the replicated data synchronized with the primary data. Data replication is distinct from data distribution. Replicated data is stored copies of data at one or more remote sites throughout a system, and it is not necessarily distributed data. Contrast with data distribution . See also disk replication and transaction replication .
data server	A server that provides the functionality necessary to maintain the physical representation of a table in a database. Data servers are usually database servers, but they can also be any data repository with the interface and functionality a data client requires. See also client , client application , and data client .
database	A collection of data with a specific structure (or schema) for accepting, storing, and providing data for users. See also data server , DBMS , and RDBMS .
database connection	A connection that allows Replication Server to manage the database and distribute transactions to the database. Each database in a replication system can have only one database connection in Replication Server. See also Replication Server and route .
datatype	A keyword that identifies the characteristics of stored information on a computer. Some common datatypes are: char, int, smallint, date, time, numeric, and float. Different data servers support different datatypes.

DBMS	An abbreviation for <i>database management system</i> . A DBMS is a computer-based system for defining, creating, manipulating, controlling, managing, and using databases. The DBMS can include the user interface for using the database, or it can be a stand-alone data server system. Compare with RDBMS .
disaster recovery	A method or process used to restore the critical business functions interrupted by a catastrophic event. A disaster recovery (or business continuity) plan defines the resources and procedures required for an organization to recover from a disaster, based on specified recovery objectives.
ERSSD	An abbreviation for embedded <i>Replication Server System Database</i> . The ERSSD manages replication system information for a Replication Server. See also Replication Server .
failback	A procedure that restores the normal user and client access to a primary database, after a failover procedure switched access from the primary database to a standby database. See also failover .
failover	A procedure that switches user and client access from a primary database to a standby database, particularly in the event of a failure that interrupts operations at the primary database, or access to the primary database. Failover is an important fault-tolerance feature for systems that require high availability. See also failback .
function	A Replication Server object that represents a data server operation such as insert, delete, or begin transaction. Replication Server distributes operations to standby databases as functions. See also function string .
function string	A string that Replication Server uses to map a function and its parameters to a data server API. Function strings allow Replication Server to support heterogeneous replication, in which the primary and standby databases are different types, with different SQL extensions and different command features. See also function .
gateway	Connectivity software that allows two or more computer systems with different network architectures to communicate.
inbound queue	A stable queue managed by Replication Server to spool messages received from a Sybase Replication Agent. See also outbound queue and stable queue .
interfaces file	A file containing information that Sybase Open Client and Open Server applications need to establish connections to other Open Client and Open Server applications. See also Open Client and Open Server .

isql	An interactive SQL client application that can connect and communicate with any Sybase Open Server application, including Adaptive Server, Sybase Replication Agent, and Replication Server. See also Open Client and Open Server .
Java	An object-oriented programming language developed by Sun Microsystems. A platform-independent, “write once, run anywhere” programming language.
Java VM	The Java Virtual Machine. The Java VM (or JVM) is the part of the Java Runtime Environment (JRE) that is responsible for interpreting Java byte codes. See also Java and JRE .
JDBC	An abbreviation for <i>Java Database Connectivity</i> . JDBC is the standard communication protocol for connectivity between Java clients and data servers. See also data server and Java .
JRE	An abbreviation for <i>Java Runtime Environment</i> . The JRE consists of the Java Virtual Machine (Java VM or JVM), the Java Core Classes, and supporting files. The JRE must be installed on a machine to run Java applications, such as the Sybase Replication Agent. See also Java VM .
LAN	An abbreviation for “local area network.” A local area network is a computer network located on the user’s premises and covering a limited geographical area (usually a single site). Communication within a local area network is not subject to external regulations; however, communication across the LAN boundary can be subject to some form of regulation. Contrast with WAN .
latency	<p>In transaction replication, the time it takes to replicate a transaction from a primary database to a standby database. Specifically, latency is the time elapsed between committing an original transaction in the primary database and committing the replicated transaction in the standby database.</p> <p>In disk replication, latency is the time elapsed between a disk write operation that changes a block or page on a primary device and the disk write operation that changes the replicated block or page on a mirror (or standby) device.</p> <p>See also disk replication and transaction replication.</p>
LOB	An abbreviation for <i>large object</i> . A LOB is a type of data element that is associated with a column that contains extremely large quantities of data.
Log Reader	An internal component of the Sybase Replication Agent that interacts with the primary database and mirror log devices to capture transactions for replication. See also Log Transfer Interface and Log Transfer Manager .

Log Transfer Interface	An internal component of the Sybase Replication Agent that interacts with Replication Server to forward transactions for distribution to a standby database. See also Log Reader and Log Transfer Manager .
Log Transfer Manager	An internal component of the Sybase Replication Agent that interacts with the other Sybase Replication Agent internal components to control and coordinate Sybase Replication Agent operations. See also Log Reader and Log Transfer Interface .
Maintenance User	A special user login name in the standby database that Replication Server uses to apply replicated transactions to the database. See also Replication Server .
materialization	The process of copying the data from a primary database to a standby database, initializing the standby database so that the Sybase Replication Agent system can begin replicating transactions. See also atomic materialization , bulk materialization , and non-atomic materialization .
nonatomic materialization	A materialization method that copies subscription data without a lock on the primary database. Changes to primary data are allowed during data transfer, which may cause temporary inconsistencies between the primary and standby databases. Contrast with atomic materialization . See also bulk materialization .
ODBC	An abbreviation for <i>Open Database Connectivity</i> . ODBC is an industry standard communication protocol for clients connecting to data servers. See also JDBC .
Open Client	A Sybase product that provides customer applications, third-party products, and other Sybase products with the interfaces needed to communicate with Open Server applications. See also Open Server .
Open Client application	An application that uses Sybase Open Client libraries to implement Open Client communication protocols. See also Open Client and Open Server .
Open Server	A Sybase product that provides the tools and interfaces required to create a custom server. See also Open Client .
Open Server application	A server application that uses Sybase Open Server libraries to implement Open Server communication protocols. See also Open Client and Open Server .
outbound queue	A stable queue managed by Replication Server to spool messages to a standby database. See also inbound queue and stable queue .
primary data	The version of a set of data that is the source used for replication. Primary data is stored and managed by the primary database. See also Sybase Replication Agent , primary database , and Replication Server .

primary database	The database that contains the data to be replicated to another database (the standby database) through a replication system. The primary database is the database that is the source of replicated data in a replication system. Sometimes called the <i>active database</i> . Contrast with standby database . See also primary data .
primary key	The column or columns whose data uniquely identify each row in a table.
primary site	The location or facility at which primary data servers and primary databases are deployed to support normal business operations. Sometimes called the <i>active site</i> or <i>main site</i> . See also primary database and standby site .
primary table	A table used as a source for replication. Primary tables are defined in the primary database schema. See also primary data and primary database .
primary transaction	A transaction that is committed in the primary database and recorded in the primary database transaction log. See also primary database , replicated transaction , and transaction log .
quiesce	To cause a system to go into a state in which further data changes are not allowed. See also quiescent .
quiescent	<p>In a replication system, a state in which all updates have been propagated to their destinations. Some Sybase Replication Agent and Replication Server commands require that you first quiesce the replication system.</p> <p>In a database, a state in which all data updates are suspended so that transactions cannot change any data and the data and log devices are stable.</p> <p>This term is interchangeable with <i>quiesced</i> and <i>in quiesce</i>. See also quiesce.</p>
RASD	An abbreviation for <i>Replication Agent System Database</i> . Information in the RASD is used by the primary database to recognize database structure or schema objects in the transaction log.
RCL	An abbreviation for <i>Replication Command Language</i> . RCL is the command language used to manage Replication Server.
RDBMS	An abbreviation for <i>relational database management system</i> . An RDBMS is an application that manages and controls relational databases. Compare with DBMS . See also relational database .
relational database	A collection of data in which data is viewed as being stored in tables, which consist of columns (data items) and rows (units of information). Relational databases can be accessed by SQL requests. See also SQL .

replicated data	A set of data that is replicated from a primary database to a standby database by a replication system. See also primary database , replication system , and standby database .
replicated transaction	A primary transaction that is replicated from a primary database to a standby database by a transaction replication system. See also primary database , primary transaction , standby database , and transaction replication .
Replication Agent	An application that reads a primary database transaction log to acquire information about data-changing transactions in the primary database, processes the log information, and then sends it to a Replication Server for distribution to a standby database. See also primary database and Replication Server .
replication definition	A description of a table or stored procedure in a primary database, for which subscriptions can be created. The replication definition, maintained by Replication Server, includes information about the columns to be replicated and the location of the primary table or stored procedure. See also Replication Server and subscription .
Replication Server	The Sybase software product that provides the infrastructure for a robust transaction replication system. See also Replication Agent .
RSSD	An abbreviation for <i>Replication Server System Database</i> . The RSSD manages replication system information for a Replication Server. See also Replication Server .
replication system	A data processing system that replicates data from one location to another. Data can be replicated between separate systems at a single site, or from one or more local systems to one or more remote systems. See also disk replication and transaction replication .
rollback	An instruction to a database to back out of the changes requested in a unit of work (called a transaction). Contrast with commit . See also transaction .
SQL	An abbreviation for <i>Structured Query Language</i> . SQL is a non-procedural programming language used to process data in a relational database. ANSI SQL is an industry standard. See also transaction .
stable queue	A disk device-based, store-and-forward queue managed by Replication Server. Messages written into the stable queue remain there until they can be delivered to the appropriate process or standby database. Replication Server provides a stable queue for both incoming messages (the inbound queue) and outgoing messages (the outbound queue). See also database connection , Replication Server , and route .

standby data	The data managed by a standby database, which is the destination (or target) of a replication system. See also data replication and standby database .
standby database	A database that contains data replicated from another database (the primary database) through a replication system. The standby database is the database that receives replicated data in a replication system. Sometimes called the <i>replicate database</i> . Contrast with primary database . See also standby data .
standby site	The location or facility at which standby data servers and standby databases are deployed to support disaster recovery, and normal business operations during scheduled downtime at the primary site. Sometimes called the <i>alternate site</i> or <i>replicate site</i> . Contrast with primary site . See also standby database .
subscription	A request for Replication Server to maintain a replicated copy of a table, or a set of rows from a table, in a standby database at a specified location. See also replication definition and Replication Server .
table	In a relational DBMS, a two-dimensional array of data or a named data object that contains a specific number of unordered rows composed of a group of columns that are specific for the table. See also database .
transaction	A unit of work in a database that can include zero, one, or many operations (including insert, update, and delete operations), and that is either applied or rejected as a whole. Each SQL statement that modifies data can be treated as a separate transaction, if the database is so configured. See also SQL .
transaction log	Generally, the log of transactions that affect the data managed by a data server. Sybase Replication Agent reads the transaction log to identify and acquire the transactions to be replicated from the primary database. See also Sybase Replication Agent , primary database , and Replication Server .
transaction replication	A data replication method that copies data-changing operations from a primary database transaction log to a standby database. See also data replication and disk replication .
transactional consistency	A condition in which all transactions in the primary database are applied in the standby database, in the same order that they were applied in the primary database.
WAN	An abbreviation for “wide area network.” A wide area network is a system of local-area networks (LANs) connected together with data communication lines. Contrast with LAN .

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