

SYBASE®

Installation Guide

Sybase Replication Agent™

15.0

[Linux, Microsoft Windows, and UNIX]

DOCUMENT ID: DC38268-01-1500-02

LAST REVISED: October 2007

Copyright © 1998-2007 by Sybase, Inc. All rights reserved.

This publication pertains to Sybase software and to any subsequent release until otherwise indicated in new editions or technical notes. Information in this document is subject to change without notice. The software described herein is furnished under a license agreement, and it may be used or copied only in accordance with the terms of that agreement.

To order additional documents, U.S. and Canadian customers should call Customer Fulfillment at (800) 685-8225, fax (617) 229-9845.

Customers in other countries with a U.S. license agreement may contact Customer Fulfillment via the above fax number. All other international customers should contact their Sybase subsidiary or local distributor. Upgrades are provided only at regularly scheduled software release dates. No part of this publication may be reproduced, transmitted, or translated in any form or by any means, electronic, mechanical, manual, optical, or otherwise, without the prior written permission of Sybase, Inc.

Sybase trademarks can be viewed at the [Sybase trademarks page](http://www.sybase.com/detail?id=1011207) at <http://www.sybase.com/detail?id=1011207>. Sybase and the marks listed are trademarks of Sybase, Inc. ® indicates registration in the United States of America.

Java and all Java-based marks are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Unicode and the Unicode Logo are registered trademarks of Unicode, Inc.

All other company and product names used herein may be trademarks or registered trademarks of their respective companies.

Use, duplication, or disclosure by the government is subject to the restrictions set forth in subparagraph (c)(1)(ii) of DFARS 52.227-7013 for the DOD and as set forth in FAR 52.227-19(a)-(d) for civilian agencies.

Sybase, Inc., One Sybase Drive, Dublin, CA 94568.

Contents

About This Book	v
CHAPTER 1	
Preparing for Installation.....	1
Reviewing installation requirements.....	1
SySAM requirements	2
System requirements	3
Compatible products	5
Graphical user interface	6
Team skill requirements	7
Reviewing the installation process	8
Completing the Installation and Setup worksheet	11
Section 1: Replication Agent administration information	11
Section 2: Replication Server parameter values for the primary database connection	13
Section 3: Replication Agent parameter values for Replication Server	14
Section 4: Replication Agent parameter values for the ERSSD or RSSD	15
Section 5: Replication Agent parameter values for the primary data server.....	16
Section 6: Replication Server parameter values for the replicate data server.....	18
Installation and Setup worksheet	18
Section 1: Replication Agent administration information	19
Section 2: Replication Server parameter values for the primary database connection	20
Section 3: Replication Agent parameter values for Replication Server	22
Section 4: Replication Agent parameter values for the RSSD	23
Section 5: Replication Agent parameter values for the primary data server	23
Section 6: Replication Server parameter values for the replicate data server.....	25

What's next	26
CHAPTER 2	
Installing Sybase Replication Agent.....	27
Before you begin	27
Read the release bulletin.....	28
Plan for system requirements.....	28
Verify the system environment	29
Complete the Installation and Setup worksheet	30
Setting up connectivity to the primary database	30
DB2 Universal Database JDBC driver.....	30
Oracle and Microsoft SQL Server JDBC drivers	32
Installing the Sybase Replication Agent software	33
Installing with the GUI wizard	34
Installing in console mode	38
Using a response file for installation.....	40
Installation troubleshooting.....	47
Setting up the SYBASE environment.....	49
Uninstalling the Sybase Replication Agent software	50
Uninstalling on a Windows platform	50
Uninstalling on a UNIX platform	51
Verifying the installation	53
SYBASE environment scripts.....	53
What's next	54
Glossary	55
Index	63

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 1, “Preparing for Installation,” *before* you unload the Sybase Replication Agent software from the Sybase Replication Agent 15.0 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 this 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 1, “Preparing for Installation,” describes basic Sybase Replication Agent system requirements. It also 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 2, “Installing Sybase Replication Agent,” describes how to install the Sybase Replication Agent 15.0 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® 15.0 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
- 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 SyBooks™ Web site.

Replication Server Refer to these 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 the 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 <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 time frame 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

These 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-15_0/inst_name/log` subdirectory.

Syntax conventions

These 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.

These 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.

Character case conventions

Accessibility features

Sybase Replication Agent version 15.0 and the HTML documentation have been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

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

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

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.



Preparing for Installation

Topic	Page
Reviewing installation requirements	1
Reviewing the installation process	8
Completing the Installation and Setup worksheet	11
Installation and Setup worksheet	18
What's next	26

Note Review this chapter for system requirements and other information you need to know *before* you install the version 15.0 software.

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

Reviewing installation requirements

Note Be sure to read the Sybase Replication Agent 15.0 *Release Bulletin*, which might contain more up-to-date information than this guide.

Review the following installation requirements before you install the Sybase Replication Agent 15.0 software:

- SySAM requirements
- System requirements
- Compatible products
- Graphical user interface

- Team skill requirements

Note If you are migrating from Sybase Replication Agent version 12.5 or 12.6 to version 15.0, see the Sybase Replication Agent *Primary Database Guide* for database-specific details on migration.

SySAM requirements

This section describes the required licensing information that you need to know before you install any of the components of Sybase Replication Agent.

SySAM overview

Sybase Software Asset Management 2.0 (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 Agent options:

- Replication Server Option for IBM DB2 UDB
- 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.

For all information for SySAM, refer to the Sybase Software Asset Management 2.0 *User's Guide*.

Replication Server Options components

SySAM checks licenses for the following RSO components:

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

Before installing Replication Agent

Before you install Replication Agent, you must decide whether to configure an unserved license or a network license server. This information will be requested during installation. For detailed instructions, refer to the Sybase Software Asset Management 2.0 *User's Guide*.

System requirements

Sybase Replication Agent 15.0 supports the following database servers on Linux, Microsoft Windows 2000 and 2003, and UNIX platforms:

- IBM DB2 Universal Database
- 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:

- For information about JREs on the Linux, Sun Solaris, and Microsoft Windows platforms, see the Web site at <http://java.sun.com/j2se>.
- For information about JREs on AIX platforms, see the Web site at <http://www.ibm.com/developerworks/java/jdk>.

- For information about JREs on HP-UX platforms, see the Web site at <http://www.hp.com/products1/unix/java>.

Platforms and operating systems

The Sybase Replication Agent 15.0 software requires one of the platforms and operating system versions listed in Table 1-1.

Note Be aware of the following installation requirements:

- Sybase Replication Agent for Oracle must be installed on a machine from which it can directly access the Oracle redo logs.
- Replication Agent for IBM DB2 Universal Database (UDB) must be installed on the same machine as the UDB server or the UDB Administration Client.

Table 1-1: Platform and operating system requirements

Platform	Operating system version
HP 9000(8xx)	HP-UX 11i, 11iR2
IBM RISC System/6000	IBM AIX 5.2, 5.3
Linux/Intel x86	<ul style="list-style-type: none">• Red Hat Enterprise Linux 3.0:<ul style="list-style-type: none">• Kernel version 2.4.9-e.27 or later• Red Hat Enterprise Linux 4.0:<ul style="list-style-type: none">• Kernel version 2.6.9-22.EL• SuSE Linux Enterprise Server 9:<ul style="list-style-type: none">• Kernel version 2.6.5-7.191
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 8, 9, 10

Note *Before* you install the Sybase Replication Agent 15.0 software, you must install the most recent operating system patches recommended by your operating system vendor for Java 1.4.2 support.

Table 1-2 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 1-2.

Table 1-2: 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 Data Definition Language (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 1-3 lists the database server versions supported by Sybase Replication Agent 15.0.

Table 1-3: Databases compatible with Sybase Replication Agent

Database	Versions
IBM DB2 Universal Database	Enterprise Edition 8.2.2
Oracle Server	9i (9.2.0), 10g (10.1, 10.2)
Microsoft SQL Server	2000, 2005

Sybase Replication Agent requires a JDBC 2.0-compliant driver for the primary data server. Table 1-4 lists the JDBC driver versions required to support connectivity between Sybase Replication Agent 15.0 and the primary data server.

Table 1-4: Drivers compatible with Replication Agent

Driver	Versions
DB2 Universal Database Administration Client	8.1, 8.2 (32-bit)
Oracle JDBC driver	10.2 for JDK 1.4
Microsoft SQL Server JDBC driver	1.1

Sybase Replication Agent 15.0 is compatible with the Sybase products listed in Table 1-5.

Table 1-5: Sybase Replication Agent 15.0 compatibility

Sybase product	Versions
Replication Server	12.5, 12.6, 15.x
Sybase Software Asset Management (SySAM)	2.0

Graphical user interface

The standard installation procedure for Sybase Replication Agent 15.0 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 38 for more information.

Team skill requirements

You need team members with specific skills to successfully install and configure a replication environment using Sybase Replication Agent 15.0. For your site, identify the person or team responsible for each skill set listed in Table 1-6.

Table 1-6: 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, or Windows 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
ECDA DirectConnect Server Administrator	<ul style="list-style-type: none">• Understanding of the ECDA DirectConnect server and data access from heterogeneous databases• ECDA 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 1-7 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 1-7: 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 30 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 RSSD • Defining connections from Replication Server to the RSSD and routes between Replication Servers • Defining connections using the ECDA DirectConnect server when replicating to a non-Sybase database 	<ul style="list-style-type: none"> • Sybase installer documentation • Replication Server documentation • ECDA documentation for DirectConnect server
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 18. 	<ul style="list-style-type: none"> • Chapter 1, “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 installing the software.</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>	<p>“Installing the Sybase Replication Agent software” on page 33 in this guide</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 A, “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 18 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, in case you 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 (UDB)
- `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 18.

- 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 18.

- 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 and have a range of 1 to 65,535.

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.

Record the port number as item 1c on the “Installation and Setup worksheet” on page 18.

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 or *interfaces* on Linux and UNIX).

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

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

Record the interfaces file location as item 1d on the “Installation and Setup worksheet” on page 18.

- 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 18.

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 30 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 18.

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 18.

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 18.

- 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 18.

- 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 18.

- 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 18.

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. Because 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 18.

- 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 18.

- 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 18.

- 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 18.

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 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 18.

- 2 If your primary database type is 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 18.

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 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 18.
- 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, or \$ORACLE_SID on UNIX).

Record the database name as item 5d (pds_database_name) on the “Installation and Setup worksheet” on page 18.
- 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 18.
- 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 18.
- 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 18.

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 18.

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 18.

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 Replication Manager to administer the Replication Agent instance.	UNIX: <i>\$SYBASE/interfaces</i> Windows: <i>%SYBASE%\ini\sql.ini</i>	
	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 data server name represents 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 can be the name of the Replication Agent instance.</p> <hr/>	ra_sales_instance	
	2b	<p>rs_source_db</p> <p>This database name represents 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 Use any name that helps you identify it 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 the Replication Server 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 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 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 Microsoft SQL Server primary database server.</p>	<p>doc_23</p> <hr/> <p>Note This value is for Microsoft SQL Server only.</p> <hr/>	<hr/> <hr/>
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>	<p>sales_db</p> <hr/> <p>Note This name can be the same as the name you gave for item 2b.</p> <hr/>	<hr/> <hr/>
5e	<p>pds_datasource_name</p> <p>This is the data source name (DSN) of the ODBC driver for the primary database.</p>	<p>sales_db</p> <hr/> <p>Note This value is for DB2 Universal Database only.</p> <hr/>	<hr/> <hr/>
5f	<p>pds_username</p> <p>This is the user ID that Replication Agent uses to log in to the primary database.</p>	<p>pds_user</p> <hr/>	<hr/>
5g	<p>pds_password</p> <p>This is the password for pds_username.</p>	<p>pds_pw</p> <hr/>	<hr/>
5h	<p>This is the Java-equivalent of the primary database character set.</p> <hr/> <p>Note Unless you want to override the default character set that the JVM finds on your system, you do <i>not</i> need to explicitly set the character set-related environment variable called RA_JAVA_DFLT_CHARSET. However, the system default character set must match the character set of the primary database.</p> <hr/>	<p>ISO8859_1</p> <hr/>	<hr/>

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> <hr/> <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> <hr/>	scott	Note This value is for Oracle only.
	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>	tiger	Note This value is for Oracle only.

See also

These 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 2, “Installing Sybase Replication Agent.”

Installing Sybase Replication Agent

Topic	Page
Before you begin	27
Setting up connectivity to the primary database	30
Installing the Sybase Replication Agent software	33
Setting up the SYBASE environment	49
Uninstalling the Sybase Replication Agent software	50
Verifying the installation	53
What's next	54

This chapter describes how to install Sybase Replication Agent version 15.0 software, and how to create, configure, and start up a Sybase Replication Agent instance.

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

Before you begin

Complete these pre-installation tasks *before* you install the Sybase Replication Agent 15.0 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 15.0 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 or 12.6 to version 15.0, 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 3 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 15.0 software in the same installation directory with the following Sybase products:

- Replication Server® version 12.5 or earlier
- Adaptive Server® Enterprise (ASE) version 12.5.0.x or earlier
- Open Client™ or Open Server™ version 12.5.0 or earlier
- OpenSwitch version 12.5 or earlier
- EnterpriseConnect™ Data Access (or DirectConnect™) version 12.5 or earlier

Doing so incapacitates these products and 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 15.0. For this reason, Sybase recommends that you back up your current Sybase installation directory before installing Sybase Replication Agent 15.0.

Verify the system environment

Before you install the Sybase Replication Agent 15.0 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 1, “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 11 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. Contact your Database Administrator if you are not sure that the correct driver is installed.

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. Otherwise, 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 Administration 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 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 source *db2cshrc* to correctly set all required DB2 environment variables.

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

```
source /path_name/sqlllib/db2cshrc
```

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 automatically modifies all required environment variables.

- 2 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 *datasource name* when you configure the data source.

Be sure to record the database name and datasource name in these Replication Agent configuration parameters:

- `pds_database_name` – ODBC database name
- `pds_datasource_name` – ODBC datasource name

Oracle and Microsoft SQL Server JDBC drivers

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

- For Oracle: at http://technet.oracle.com/software/tech/java/sqlj_jdbc/content.html
- For Microsoft SQL Server: at <http://www.microsoft.com/downloads/Browse.aspx?displaylang=en&categoryid=3>

❖ To set the CLASSPATH environment variable

- 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 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/driver:$CLASSPATH
```

where:

- *path_name* is the name of the path where you installed the JDBC driver.
- *driver* is the name of the JDBC driver.
For Oracle, it is *ojdbc14.jar*, and for SQL Server it is *sqljdbc.jar*.

You must log out and log back in for this change to take effect, or issue the command `source .login` after the change.

- For Windows:

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 window:

```
drive:\path_name\driver
```

where:

- *drive* is the drive letter.
- *path_name* is the name of the path where you installed the Oracle JDBC driver.
- *driver* is the name of the JDBC driver:
For Oracle, the name is *ojdbc14.jar*,
and for SQL Server, the name is *sqljdbc.jar*.

Click Apply, and 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.

Installing the Sybase Replication Agent software

The Sybase Replication Agent 15.0 product is distributed on the Sybase Replication Agent 15.0 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.

These sections describe how to install the Sybase Replication Agent 15.0 software on a Linux, Microsoft Windows, or UNIX platform:

- “Installing with the GUI wizard” on page 34
- “Installing in console mode” on page 38

All procedures give you these 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.

These products and features are included on the Sybase Replication Agent 15.0 distribution media:

- Sybase Replication Agent 15.0

- SySAM (the Sybase Software Asset Management license manager)

If you encounter problems during the installation, see “Installation troubleshooting” on page 47.

Note For information about installing the Replication Server 15.0 software, which is included on separate distribution media in the Sybase Replication Agent 15.0 solution package for each platform, see the Replication Server 15.0 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 one of the following:

- 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 38 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 15.0 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 this 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 this 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.

- 8 Specify an installation directory in the Destination window:
 - *%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 and click Next, or
- Enter a directory name in the Destination Directory box and 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) already 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), then InstallShield overwrites the common components.
- The products were installed with InstallShield, then 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 option:

- Typical
- Full
- Custom

Typical or Full If you choose Typical or Full, InstallShield displays these products and features:

- Sybase Replication Agent 15.0
- SySAM License Server

- SySAM License Utilities

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.

- Sybase Replication Agent 15.0
- SySAM License Server
- SySAM License Utilities

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 47.

If the software is installed successfully, InstallShield displays a window confirming the successful installation. Click Next.

- 11 The SySAM License Server window opens and displays this prompt:

```
Will the licenses be obtained from the License
Server?
```

Select Yes to use a preexisting SySAM network and click Next.

- 12 The SySAM notification window prompts you to configure your server for e-mail notification. When configuration is enabled, you receive information about license management events that require attention. Select Yes, and either accept the default values that are supplied, or enter these values from your worksheet:

- SMTP server host name
- SMTP server port number
- E-mail return address
- Recipients of the notification

- Message severity level of an event that will trigger e-mail. Your choices are:
 - Informational
 - Warning
 - Error

If you choose not to have e-mail alerts or severity messages logged, select No.

Click Next.

13 Click Finish to complete the installation and close InstallShield.

To verify that the software components were installed correctly, see “Verifying the installation” on page 53.

Post-installation task

After you complete the Sybase Replication Agent software installation, you must set up the SYBASE environment on the Sybase Replication Agent host machine. For more information, see “Setting up the SYBASE environment” on page 49

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 34, *except*:

- 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 34 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 15.0 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 Start the InstallShield wizard in console mode:
 - On Microsoft Windows:

```
setupwin32 -console
```

- On UNIX:

```
./setup_type -console
```

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

- setupaix
- setuphp11x
- setupsolaris
- setuplinux

The InstallShield wizard starts and displays the Welcome message.

- 6 Follow the remaining wizard prompts to install the Sybase Replication Agent 15.0 software.

See “Installing with the GUI wizard” on page 34 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, and then restart InstallShield. For more information, see “Installation troubleshooting” on page 47.

If the software is installed successfully, InstallShield displays a message confirming the successful installation.

To verify that the software components were installed correctly, see “Verifying the installation” on page 53.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, set up the SYBASE environment on the Sybase Replication Agent host machine. For more information, see “Setting up the SYBASE environment” on page 49.

Using a response file for installation

A response file contains responses to all of the InstallShield wizard prompts. You can install the Sybase Replication Agent 15.0 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:

- Edit a *template* file that contains default responses to all of the wizard prompts, or

- Record 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 15.0 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:

```
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:

```
./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 15.0 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:

```
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:

```
./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.

For a description of all of the wizard prompts, see “Installing with the GUI wizard” on page 34.

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 47.

❖ **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 15.0 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:

```
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:

```
./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 34 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 47.

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:

- On Microsoft Windows:

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

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

- On UNIX:

```
./setup_type -console -options RAX.resp  
-W SybaseLicense.agreeToLicense=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.agreeToLicense=true` command option makes your agreement with the Sybase License Agreement the default option in the console mode installation.

For a description of all of the wizard prompts, see “Installing with the GUI wizard” on page 34.

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 47.

To verify that the software components were installed correctly, see “Verifying the installation” on page 53.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, you must set up the SYBASE environment on the Sybase Replication Agent host machine. For more information, see “Setting up the SYBASE environment” on page 49.

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:

- On Microsoft Windows:

```
setupwin32Console.exe -silent -options RAX.resp  
-W SybaseLicense.agreeToLicense=true
```

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

Warning! When you run a silent installation, Sybase recommends that you use the *setupwin32Console.exe* executable, which runs in the foreground. The normal *setupwin32.exe* executable runs in the background, giving you the false impression that the installation has terminated immediately, without a completion status. This could result in duplicate installation attempts.

- On UNIX:

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

where:

- *setup_type* is one of these strings that corresponds to the UNIX platform type:
 - *setupaix*
 - *setupp11x*

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

Note The `-W SybaseLicense.agreeToLicense=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 47.

To verify that the software components were installed correctly, see “Verifying the installation” on page 53.

Post-installation tasks

After you complete the Sybase Replication Agent software installation, you must set up the SYBASE environment on the Sybase Replication Agent host machine. For more information, see “Setting up the SYBASE environment” on page 49.

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 15.0 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:

```
setupwin32 -log # @ALL -is:log RAX_err.log
```

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

- On UNIX:

```
./setup_type -log # @ALL -is:log 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 34 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 and the *log.txt* file in the installation directory to determine the cause of the errors.

Setting up the SYBASE environment

After you install the Sybase Replication Agent 15.0 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.

❖ 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:

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

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

- On UNIX:

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

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

Uninstalling the Sybase Replication Agent software

InstallShield includes an Uninstall wizard that removes the Sybase Replication Agent 15.0 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-2_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-15_0\uninstaller
```

- Select Start | Run and then enter:

```
%SYBASE%\uninstall\RAX-15_0\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-15_0\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-15_0/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, and then click Next.

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

- 5 Click Finish.

Note If you are prompted 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-15_0/uninstaller -console
```


The Uninstall wizard displays the Welcome window.

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

Note If you are prompted 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 15.0 software, and other specific software that the Sybase Replication Agent requires.

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 variable automatically when you install the Sybase Replication Agent software.

For more information, see “Setting up the SYBASE environment” on page 49.

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 or 12.6 to version 15.0, 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 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> , which 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 *Java Database Connectivity*. JDBC is the standard communication protocol for connectivity between Java clients and data servers. See also **data server** and **Java**.
- JRE** An abbreviation for *Java Runtime Environment*. 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 computer network located on the user’s premises that covers 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** 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.
- 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.
- See also **disk replication** and **transaction replication**.
- LOB** An abbreviation for *large object*, 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> , 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> , the command language used to manage Replication Server.
RDBMS	An abbreviation for <i>relational database management system</i> , 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> , which 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> , 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 system of local-area networks (LANs) connected together with data communication lines. Contrast with LAN .

Index

A

admin_port parameter 19
admin_pw parameter 19
admin_usert parameter 19
administration port
 client socket port number 12
administrative login 12
AIX operating system 4

C

CLASSPATH environment variable 31
commands
 create connection, Replication Server 13
 ra_config 14
compatibility
 older product versions 28
configuration parameters
 admin_port 19
 admin_pw 19
 admin_user 19
 pds_database_name 17, 24
 pds_datasource_name 17, 24
 pds_host_name 16, 23
 pds_password 17, 24
 pds_port_number 16, 23
 pds_server_name 17, 24
 pds_username 17, 24
 rs_host_name 14, 22
 rs_password 15, 22
 rs_port_number 14, 22
 rs_source_db 13, 17, 20
 rs_source_ds 13, 20
 rs_username 15, 22
 rssd_database_name 16, 23
 rssd_host_name 15, 23
 rssd_password 16, 23
 rssd_port_number 15, 23

rssd_username 16, 23
console mode installation 38
 with response file 40
create connection command, Replication Server 13
creating installation response file 40

D

data source name 17
databases
 compatible versions 5
 name of primary database 17
 name of replicate database 18
 primary database parameters 16–17
 replicate database parameters 18
 Replication Agent instance type 11
 RSSD name 16
DB2 Universal Database
 data source name 17
 database alias 17
 JDBC driver 30–31
 ODBC driver 17
 Replication Agent instance type 11
 versions supported 6
disk space requirements 5
drivers
 JDBC 6, 30
 ODBC 6
DSN
 See data source name

E

environment variables
 CLASSPATH 31
environment, SYBASE 49, 53–54
error log, installation 47–49

F

files

- installation error log 47–49
- installation response 40
- interfaces 12

G

- GUI requirement 6–7
- GUI wizard installation 34

H

host machines

- primary database 16
 - replicate database 18
 - Replication Server 14
 - RSSD 15
- HP-UX operating system 4

I

Informix

- database server name 17

installation

- console mode procedure 38
- error log 47–49
- from remote machine 7
- GUI wizard procedure 33
- procedure review 8–10
- response file 40
- silent mode procedure 46
- uninstalling procedure 50–53
- verifying 53–54
- worksheet 18–25
- worksheet instructions 11–18

InstallShield

- console mode installation wizard 38
- error log file 47–49
- GUI installation wizard 34
- installation options 33–34
- response file 40
- silent mode 46

- uninstalling options 50–53
- W** wizard option 45, 46–47

instance

- name 12
 - type 11
- interfaces file 12

J

JDBC driver

- DB2 Universal Database 30–31
- setting up 30
- versions 6

L

license agreement

- W** installation wizard option 45, 46–47

license files

- SySAM 2

M

maintenance user ID 13

memory requirements 5

Microsoft SQL Server

- ODBC driver 6
- Replication Agent instance type 11
- versions supported 6

Microsoft Windows operating system 4

O

ODBC driver

- data source name (DSN) 17
- versions 6

operating system requirements 4

Oracle

- JDBC driver 6, 32
- ORACLE_SID** environment variable 17
- Replication Agent instance type 11
- versions supported 6

P

- passwords
 - maintenance user 13
 - primary database client user 17
 - Replication Agent administrative login 12
 - Replication Server client user 14
 - RSSD client user 16
- pds_database_name** parameter 17, 24
- pds_datasource_name** parameter 17, 24
- pds_host_name** parameter 16, 23
- pds_password** parameter 17, 24
- pds_port_number** parameter 16, 23
- pds_server_name** parameter 17, 24
- pds_username** parameter 17, 24
- port numbers
 - primary database client port 16
 - Replication Agent administration port 12
 - Replication Server client port 14
 - RSSD client port 15
- primary databases
 - client port 16
 - database name 17
 - host machine name 16
 - login for Replication Agent 17
 - Replication Agent parameters 16–17
 - setting up connectivity 30

R

- ra_config** command 14
- remote installation 7
- replicate databases 18
- Replication Agent
 - administration information 11–13
 - administration port 12
 - administrative login 12
 - installation worksheet 18–25
 - instance name 12
 - instance type 11
 - primary database client user ID 17
 - primary database parameters 16–17
 - Replication Server client user ID 14
 - Replication Server parameters 14–15
 - RSSD client user ID 16
 - RSSD parameters 15–16

- Replication Server
 - client port 14
 - client user ID 14
 - create connection** command 13
 - host machine name 14
 - login for Replication Agent 14
 - maintenance user ID 13
 - primary database parameters 13–14
 - replicate database parameters 18
 - version compatibility 6
 - versions 6
- Replication Server Manager (RSM)
 - versions 6
- response file, installation 40
- rs_host_name** parameter 14, 22
- rs_password** parameter 15, 22
- rs_port_number** parameter 14, 22
- rs_source_db** parameter 13, 17, 20
- rs_source_ds** parameter 13, 20
- rs_username** parameter 15, 22
- RSSD
 - client port 15
 - database name 16
 - host machine name 15
 - login for Replication Agent 16
 - Replication Agent parameters 15–16
- rssd_database_name** parameter 16, 23
- rssd_host_name** parameter 15, 23
- rssd_password** parameter 16, 23
- rssd_port_number** parameter 15, 23
- rssd_username** parameter 16, 23

S

- silent mode installation 46
- Sun Solaris operating system 4
- SYBASE environment 49, 53–54
- Sybase Software Asset Management
 - See* SySAM
- SySAM 2
 - licenses files 2
 - multiple license files 2
 - version compatibility 6
- system requirements
 - disk space 5

Index

- graphical user interface 6–7
- memory 5
- operating system 4
- planning 28
- storage 5

U

user IDs

- maintenance user 13
- primary database client 17
- Replication Agent administrative login 12
- Replication Server client 14
- RSSD client 16

V

variables

- CLASSPATH 31
- variables, environment 53
- verifying installation 53–54
- versions
 - databases supported 5

W

- W installation wizard option 45, 46–47
- Windows 2000 operating system 4
- Windows Server 2003 operating system 4
- worksheet, installation and setup 18–25