



Overview Guide

Sybase® Replication Server® Options

12.6

[Linux, Microsoft Windows, and UNIX]

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

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About This Book

Audience

This book is intended for those using components in addition to Replication Server® for replication to or from Adaptive Server® Enterprise (ASE) and an Oracle, Informix, Microsoft, or IBM database.

Product name changes

Before Enterprise Connect Data Access 12.5, its options were sold as individual DirectConnect™ products named “DirectConnect for [target].” Other than in the installer, you will see the name “DirectConnect” used in the software and in documents. Old and current option names are as follows:

Table 1: DirectConnect and ECDA naming

Old product name	Current option name
DirectConnect for DB2 UDB	Enterprise Connect Data Access Option for DB2 UDB
DirectConnect for Informix	Enterprise Connect Data Access Option for Informix
DirectConnect for Microsoft SQL Server	Enterprise Connect Data Access Option for Microsoft SQL Server
DirectConnect for Oracle	Enterprise Connect Data Access Option for Oracle

How to use this book

See	For
Chapter 1, “Introducing Replication Server Options”	Description of the option components and related products
Chapter 2, “Replication Server Options Sample Solutions”	Sample solutions using the options and Replication Server

Related documents

See your product documentation for detailed descriptions of how to install and use Replication Server and the Replication Server Options components.

Other sources of information

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

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

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

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

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

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

Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ To find the latest information on product certifications

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

❖ To find the latest information on component certifications

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

- 3 Select Search to display the availability and certification report for the selection.

❖ **To create a personalized view of the Sybase Web site (including support pages)**

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

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

Sybase EBFs and software maintenance

❖ **To find the latest information on EBFs and software maintenance**

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

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

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

Conventions

Illustrations in this book use icons to represent these components of a data enterprise system:

- *Adaptive Server Enterprise and other data servers*



This icon represents either an Adaptive Server Enterprise (ASE) or a non-Sybase data server. If the data server in an example *must* be ASE, the data server icon is labeled “ASE.”

- *Replication Server*



This icon represents Replication Server, the Sybase application that maintains replicated data on a local area network (LAN) and processes data transactions received from other Replication Servers on the wide area network (WAN).

- *Replication Server Manager Client*



This icon represents Replication Server Manager™(RSM) Client, the graphical user interface (GUI) portion of the Replication Server plug-in for Sybase Central.

- *Replication Server Manager Server*



This icon represents Replication Server Manager™ (RSM) Server, the server portion of the Replication Server plug-in for Sybase Central.

- *Replication Agent*



This icon represents a Replication Agent™, a replication system process that transfers transaction information from a database to a Replication Server for distribution to other databases.

Every database from which you replicate data requires a replication agent specific to the database. Adaptive Server has its own replication agent thread called RepAgent. Replication agents for all other data servers are separate processes, and this icon represents a replication agent that is a separate process.

- *DirectConnect*



This icon represents a DirectConnect data access server. DirectConnect servers connect LAN-based clients and heterogeneous data servers. The Replication Server options contain DirectConnect servers for Microsoft SQL Server, Oracle, Informix, and DB2 Universal Database.

- *ASE/CIS*



This icon represents Adaptive Server Enterprise/Component Integration Services (ASE/CIS). When combined with the appropriate DirectConnect server, ASE/CIS provides transparent read/write access to database systems such as DB2 Universal Database for UNIX and for Microsoft Windows, Informix, and Oracle.

- *Client applications*



This icon represents a client application, which is a user process or application connected to a data server. It can be a front-end application program executed by a user or a program that executes as an extension of the system.

Accessibility features

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

Replication Server Options version 12.6 and the HTML documentation have been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

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

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

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

If you need help

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.

Introducing Replication Server Options

This chapter introduces the Replication Server Options.

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What are the Replication Server Options?	1
Descriptions of option components	3
Description of Sybase Central	6
Description of Replication Server	6

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

What are the Replication Server Options?

The Replication Server Options are available *separately* from Replication Server. Therefore, you must have the Replication Server Options *in addition to* Replication Server to implement the solutions described in this document.

The Replication Server Options can be used with Replication Server for bidirectional replication across distributed, heterogeneous systems to enable different operational and decision-support tasks.

The four Replication Server Options contain the replication components necessary for replication with one of the following databases:

- DB2 Universal Database (on UNIX and Microsoft Windows platforms)
- Informix Dynamic Server

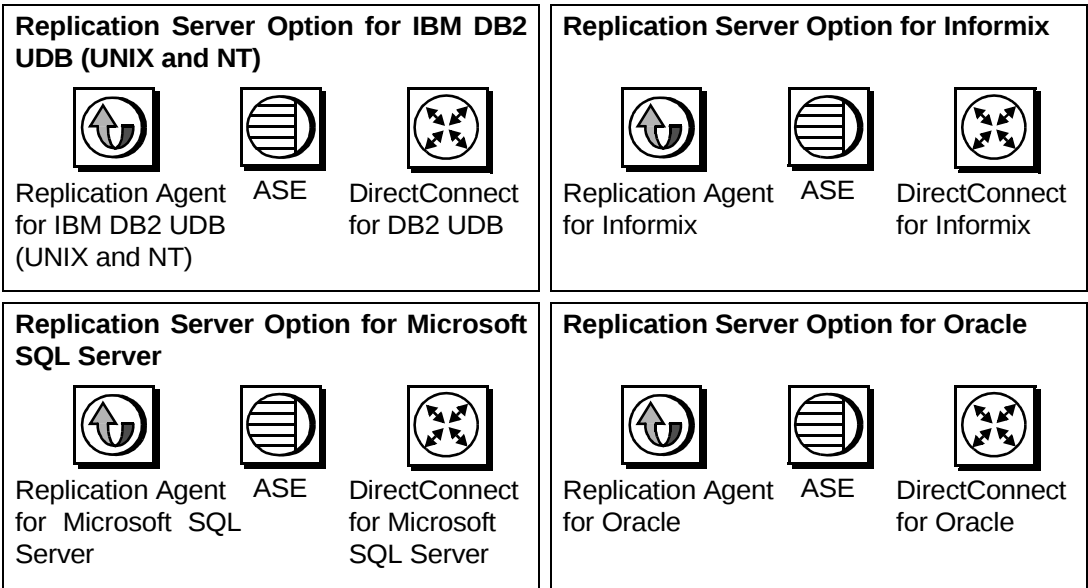
- Microsoft SQL Server
- Oracle

Note These replication components can be used to implement bidirectional replication on the Microsoft Windows and UNIX platforms. To implement a bidirectional replication solution for DB2 UDB for OS/390 or a unidirectional solution for AS/400, you must have Replication Agent for DB2 for MVS and DirectConnect for DB2 UDB for AS/400, respectively. These products are sold separately from the Replication Server Options.

The set of components necessary for bidirectional replication consists of a Replication Agent for the primary database platform, a DirectConnect for the replicate database platform, and an ASE.

Figure 1-1 illustrates the Replication Server Option components available.

Figure 1-1: Components of the four Replication Server Options



The ASE included with a Replication Server Option is used for storing the Replication Server System Database (RSSD).

Note Replication for DB2 in OS/390 is performed by Replication Agent for DB2 for MVS, which is not included in the Replication Server Options. For information on Replication Agent for DB2 for MVS, refer to the documentation for that product.

With Replication Server and one or more Replication Server Options, you can perform the following tasks:

- Manage your replication system and Sybase components using the Sybase Central GUI
- Replicate data across heterogeneous environments using numerous databases (DB2 UDB, Informix, Microsoft SQL Server, and Oracle), allowing data to be shared among different operational and decision-support systems without affecting business performance
- Integrate disparate business systems, including legacy data, into a coordinated, easily accessed, and powerful corporate business enterprise

Descriptions of option components

This section describes each of the following components of Replication Server Options:

- Sybase Replication Agent
- Enterprise Connect Data Access
- Adaptive Server Enterprise

For special instructions on installing option components, refer to the Replication Server Options *Release Bulletin*.

Sybase Replication Agent

Sybase Replication Agent captures transactions in the primary database and then transfers them to Replication Server for distribution to replicate databases.

	Sybase Replication Agent extends the capabilities of Replication Server by allowing non-Sybase database servers to be primary data servers in a Sybase replication system. Replication Agent reads the primary database transaction log and generates Log Transfer Language (LTL). Replication Server uses LTL to process and distribute replicated transactions through a replication system.
Sybase Replication Agent configurations	Each Replication Server option contains the Replication Agent suitable for a particular platform: • Sybase Replication Agent for UDB – retrieves transactions from a DB2 Universal Database primary database on UNIX and Microsoft Windows platforms. • Sybase Replication Agent for Informix – retrieves transactions from an Informix primary database. • Sybase Replication Agent for Microsoft SQL Server – retrieves transactions from a Microsoft SQL Server primary database. • Sybase Replication Agent for Oracle – retrieves transactions from an Oracle primary database. In addition to the four main components, Replication Agent has an administration port that provides an administrative user interface.
Standalone application	Sybase Replication Agent runs as a standalone application, independent of the primary database server, the primary Replication Server, and other components of a replication system. Sybase Replication Agent can reside on the same host machine as any other component of the replication system, or it can reside on a machine that is separate from other replication system components.
Sybase Replication Agent management	Sybase Replication Agent instances can be configured, managed, and monitored by Replication Server Manager (RSM). In addition, you can completely configure, manage, and monitor a Sybase Replication Agent instance using any Open Client application (such as isql) that is capable of communicating with the Sybase Tabular Data Stream™ (TDS) protocol. For more information on Replication Agent, see the documentation specific to that product.

Enterprise Connect Data Access

Enterprise Connect Data Access (ECDA) is an integrated set of software applications and connectivity tools that you use to access data within a heterogeneous database environment. ECDA gives you the ability to access a variety of LAN-based, non-Sybase data sources, as well as mainframe data sources. It consists of components that provide transparent data access within an enterprise.

ECDA components allow applications to interact with non-Sybase DBMSs, such as DB2 UDB, Informix, Microsoft SQL Server, and Oracle, as well as Sybase DBMSs, including Adaptive Server and Sybase IQ.

DirectConnect

DirectConnect is the ECDA component that provides basic connectivity to non-Sybase data sources. In particular, it provides access management, transaction management, and remote systems management through DirectConnect Manager.

DirectConnect consists of a server and one or more access service libraries, which have specific sets of configuration properties. The server provides the framework in which the service libraries operate. Each access service library accesses data from a particular target database, such as DB2 UDB, Informix, Microsoft SQL Server, and Oracle.

DirectConnect servers

ECDA includes these DirectConnect servers:

- DirectConnect for DB2 UDB, which provides connectivity to DB2 UDB running on z/OS, AS400, NT, and UNIX platforms
- DirectConnect for Informix, which provides connectivity to Informix database servers
- DirectConnect for Microsoft SQL Server, which provides connectivity to Microsoft SQL Server databases
- DirectConnect for Oracle, which provides connectivity to Oracle database servers

DirectConnect Manager

You can use the DirectConnect plug-in for Sybase Central, called DirectConnect Manager, to configure, manage, and control your data access environment. To learn how to use Sybase Central to manage DirectConnect, see the DirectConnect Manager online help.

For more information on DirectConnect, see the documentation specific to that product.

Adaptive Server Enterprise

Adaptive Server Enterprise (ASE) is the relational database server in the Sybase client-server architecture used in mission-critical, transaction-intensive enterprise environments.

The ASE distributed with DirectConnect is used for storing the RSSD.

For more information about ASE, see *What's New in Sybase Adaptive Server Enterprise?*.

Adaptive Server plug-in to Sybase Central

The Adaptive Server plug-in for Sybase Central allows you to manage the installation and administration of ASE using the Sybase Central graphical management tool. To learn how to use Sybase Central to manage ASE, see the Adaptive Server plug-in online help.

Description of Sybase Central

Sybase Central is a graphical tool that provides a common interface for managing Sybase products. Each server product is managed by a service provider “plug-in” that operates in parallel with other service providers in the Sybase Central framework. Sybase Central runs on Microsoft Windows.

Sybase Central displays a visual representation of servers and provides a point-and-click interface for choosing options. Plug-ins use Sybase Central Java Edition, a Java-based viewer.

In addition to the base product and options, the following server plug-ins are provided:

- Adaptive Server Enterprise plug-in – lets you manage and monitor all Adaptive Server installations.
- DirectConnect Manager – lets you manage DirectConnect servers throughout your business environment.

Description of Replication Server

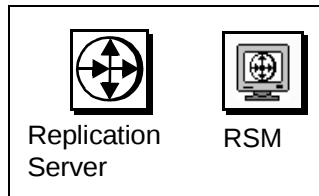
The Replication Server Options are available separately from Replication Server. You must already have Replication Server to obtain the Replication Server Options and to implement the functionality described in this chapter.

The Replication Server product consists of the following components:

- Replication Server
- Replication Server Manager (RSM)

Figure 1-2 shows the components distributed with the Replication Server product.

Figure 1-2: Components in the Replication Server base product



For details on these components, see the Replication Server *Administration Guide* and the Replication Server *Heterogeneous Replication Guide*.

Replication Server Options Sample Solutions

This chapter provides examples of how the Replication Server Options can be used with Replication Server to implement solutions.

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Consolidating data into a central repository

Profile

A telecommunications company has satellite offices in San Francisco and Chicago that use Microsoft SQL Server to store local customer information. Headquarters in Boston uses ASE to store company-wide customer information. Replication Agent captures the changes in Microsoft SQL Server at the satellite offices and passes them to Replication Server. Replication Server applies data changes to the headquarters' consolidated customer database, which is stored in ASE.

Sybase components

To set up unidirectional consolidation into a central repository, the telecommunications company uses the following components:

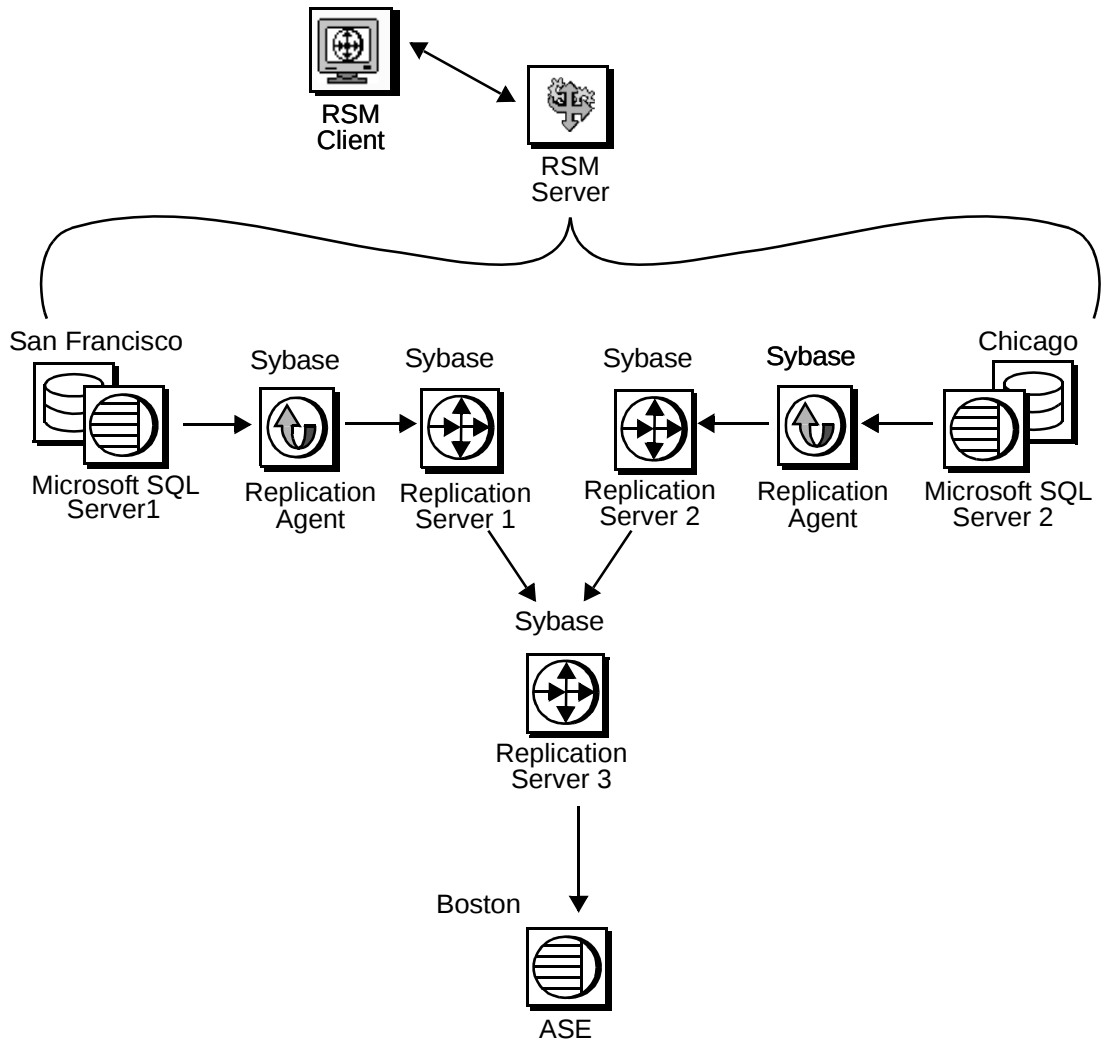
- Sybase Replication Server
- ASE
- RSM
- Sybase Replication Agent for Microsoft SQL Server

See Chapter 1, "Introducing Replication Server Options," for descriptions of specific components.

Figure

Figure 2-1 illustrates this sample scenario.

Figure 2-1: Unidirectional consolidation into a central repository



Distributing enterprise data between multiple central databases

Profile

A large regional supplier maintains its enterprise data in a central database in Sacramento before merging with a second regional supplier of comparable size in Denver. The Sacramento enterprise maintains its data on an Oracle system, while the Denver enterprise uses ASE. To circumvent the lengthy and expensive process of migrating data to another platform, both organizations implement an integrative, bidirectional replication system.

Sybase components

To set up bidirectional, enterprise-wide replication, the Sacramento enterprise uses the following components:

- Sybase Replication Server
- ASE
- Sybase Replication Agent for Oracle
- Sybase DirectConnect for Oracle

Figure

Figure 2-2 illustrates the sample scenario that integrates Oracle data with ASE data.

Figure 2-2: Bidirectional, enterprise-wide replication

