SYBASE®

Overview Guide

Sybase Replication Server® Options

15.0

[Linux, Microsoft Windows, and UNIX]

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About This Book

Audience

This book is intended for those using Replication Server® for replication to or from Oracle, Microsoft, or IBM databases.

Product changes

In Enterprise Connect Data Access (ECDA) 15.0, the ECDA Option for DB2 UDB and the ECDA Option for Microsoft SQL Server have been merged into the ECDA Option for ODBC. As such, there are two options for ECDA 15.0:

- ECDA Option for ODBC
- ECDA Option for Oracle

How to use this book

The following describes the contents of the document.

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 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.

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 15.0 and the HTML documentation for the individual products 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.

CHAPTER 1

Introducing Replication Server Options

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

- IBM DB2 Universal Database (on Linux, UNIX, and Microsoft Windows platforms)
- Microsoft SQL Server

- Oracle

Note You can use these replication components to implement bidirectional replication on the Microsoft Windows and UNIX platforms. To replicate *from* DB2 UDB for z/OS, you must have Replication Agent for DB2 for z/OS, which is sold separately from Replication Server Options. However, you can use the ECDA Option for ODBC that is included in Replication Server Options to replicate *into* DB2 for z/OS or DB2 for AS/400.

The set of components necessary for bidirectional replication consists of a Replication Agent for the primary database platform and an ECDA Option containing a DirectConnect server for the replicate database platform. The Replication Server Options and their components are:

- Replication Server Option for IBM DB2 UDB (Linux, UNIX, and Windows) components:
  - Replication Agent for IBM DB2 UDB (Linux, UNIX and Windows)
  - ECDA Option for ODBC
- Replication Server Option for Microsoft SQL Server components:
  - Replication Agent for Microsoft SQL Server
  - ECDA Option for ODBC
- Replication Server Option for Oracle components:
  - Replication Agent for Oracle
  - ECDA Option for Oracle

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, 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

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 Microsoft SQL Server – retrieves transactions from a Microsoft SQL Server primary database.
- Sybase Replication Agent for Oracle – retrieves transactions from an Oracle primary database.

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. However, for Oracle, Replication Agent must have access to the transaction log.

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 managed and monitored by Replication Manager (RM). 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

ECDA is an integrated set of software applications and connectivity tools that you can 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 Replication Server to interact with non-Sybase DBMSs, such as IBM DB2 UDB, Microsoft SQL Server, and Oracle. In particular, it provides access management, transaction management, and remote systems management through DirectConnect Manager.

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

ECDA includes:

- ECDA Option for ODBC, which provides connectivity to Microsoft SQL Server and IBM DB2 UDB running on Windows, UNIX, z/OS, and AS/400 platforms
- ECDA Option for Oracle, which provides connectivity to Oracle database servers

DirectConnect Manager

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

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

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 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, Sybase provides the DirectConnect Manager plug-in, which allows you to manage DirectConnect servers throughout your business environment.

CHAPTER 2

Replication Server Options Sample 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 Oracle 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. Then, Replication Server applies data changes to the headquarters' consolidated customer database, which is stored in Oracle.

Sybase components

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

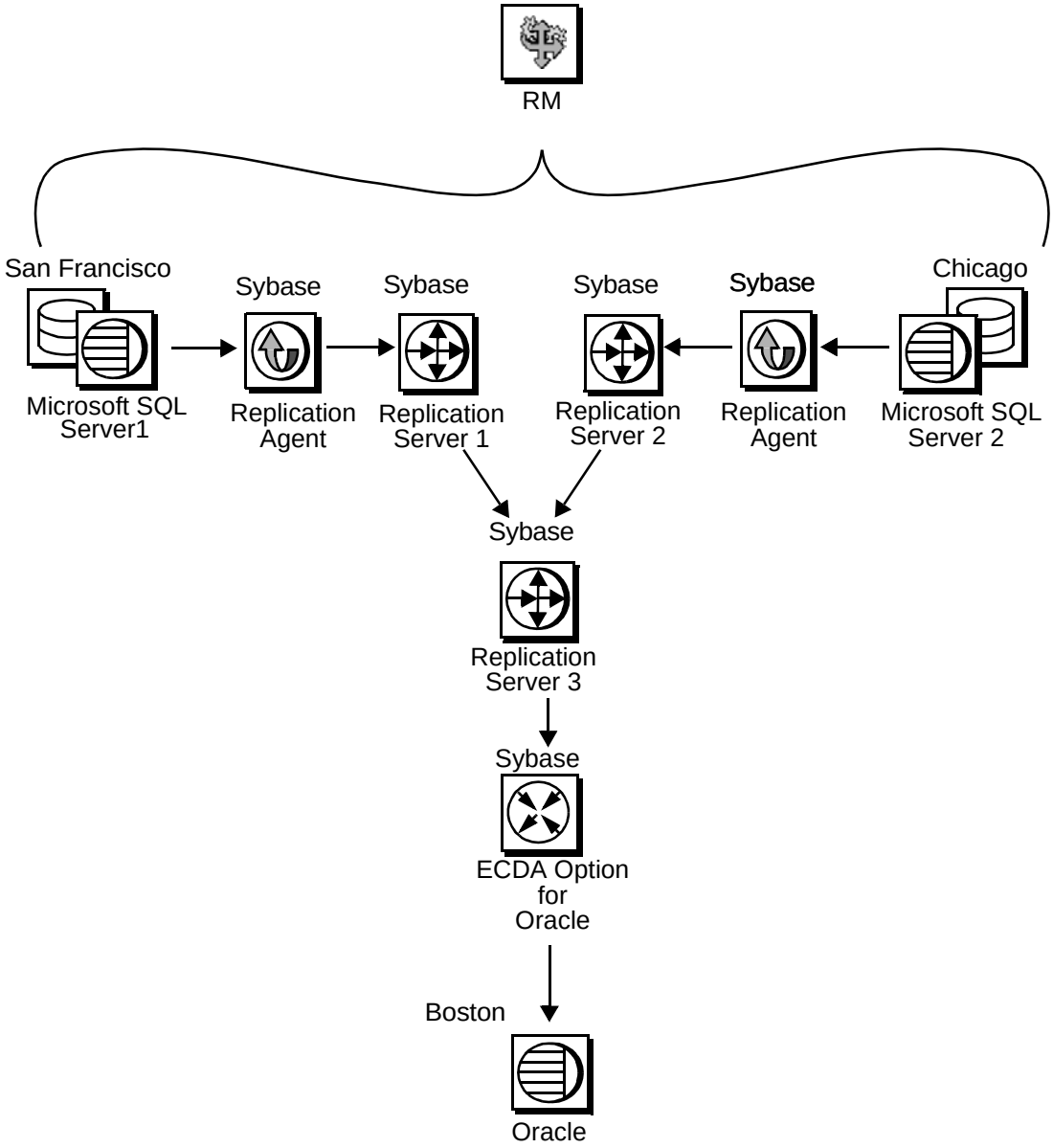
- Sybase Replication Server
- Replication Manager (RM)
- ECDA Option for Oracle
- Sybase Replication Agent for Microsoft SQL Server

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, but 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
- Adaptive Server® Enterprise (ASE)
- Sybase Replication Agent for Oracle
- Sybase ECDA Option for Oracle

Figure

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

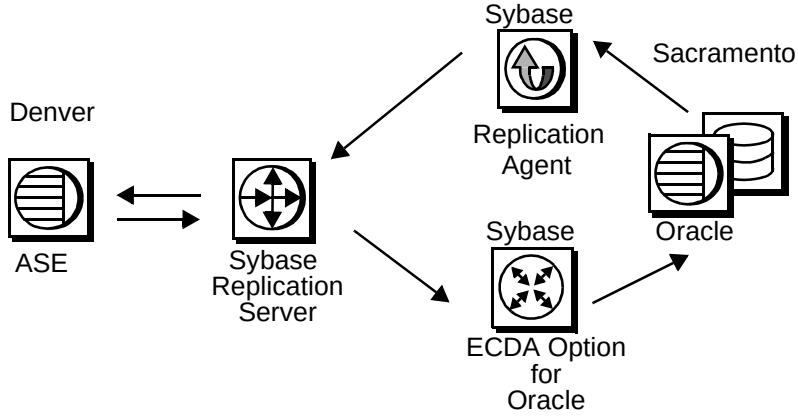



Figure 2-2: Bidirectional, enterprise-wide replication