



**Overview Guide**

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# **Replication Server<sup>®</sup> Options**

## **15.7.1 SP100**

Linux, Microsoft Windows, and UNIX

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# About Replication Server Options

Replication Server® Options are used with Replication Server for replication across distributed non-Sybase® databases to enable different operational and decision-support tasks.

Replication Server Options contain the replication components for replication with one of these databases:

- Oracle
- Microsoft SQL Server
- IBM DB2 UDB (on Linux, Microsoft Windows, and UNIX platforms)
- HANA DB (only as the replicate database)

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**Note:** You can use these replication components to implement replication on the Microsoft Windows and UNIX platforms. To replicate from DB2 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.

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The Replication Server Options and their components are:

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

Replication Server Options are available separately from Replication Server. However, to implement the solutions described in this document, you must have both the Replication Server Options and Replication Server. With Replication Server and one or more Replication Server Options, you can:

- Replicate data across heterogeneous environments using any of the supported databases, allowing data to be shared among different operational and decision-support systems without affecting business performance.

## CHAPTER 1: About Replication Server Options

- Integrate disparate business systems, including legacy data, into a coordinated, easily accessed, and powerful corporate business enterprise.

# Replication Server Options Components

Replication Server Options components include Replication Agent, Enterprise Connect™ Data Access (ECDA), ExpressConnect for Oracle (ECO), and ExpressConnect for HANA DB (ECH).

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**Note:** ExpressConnect for Oracle (ECO) and ExpressConnect for HANA DB (ECH) are installed as part of Replication Server, but the licenses for these options are sold as part of the applicable Replication Server Options package.

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

## Replication Agent

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Replication Agent extends the capabilities of Replication Server by allowing non-Sybase database servers to be data sources in a Sybase replication system.

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

### Replication Agent Configurations

Each Replication Server Option contains the Replication Agent suitable for a particular database platform:

- Replication Agent for Oracle – retrieves transactions from an Oracle primary database.
- Replication Agent for Microsoft SQL Server – retrieves transactions from a Microsoft SQL Server primary database.
- Replication Agent for UDB – retrieves transactions from an IBM DB2 Universal Database primary database running on Linux, Microsoft Windows, or UNIX platforms.

### Standalone Application

Replication Agent runs as a server application. 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. Replication Agent must reside on the same type of hardware and operating system as the primary database. Replication Agent for Microsoft SQL Server must have direct physical access to the database transaction logs.

### Replication Agent Monitoring

Replication Agent instances can be monitored by Sybase Control Center for Replication. In addition, you can use any Open Client™ application (such as isql) that is capable of

## CHAPTER 2: Replication Server Options Components

communicating with the Sybase Tabular Data Stream™ (TDS) protocol to configure, manage, and monitor a Replication Agent instance.

For more information, see the documentation for Replication Agent.

### Enterprise Connect Data Access

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Enterprise Connect Data Access (ECDA) is an integrated set of software applications and connectivity tools that allow Replication Server to replicate to non-Sybase data servers, including IBM DB2 UDB and Microsoft SQL Server.

ECDA consists of a DirectConnect™ server and one or more access service libraries that 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, including IBM DB2 UDB and Microsoft SQL Server.

#### ECDA Configurations

ECDA includes ECDA Option for ODBC, which provides connectivity to Microsoft SQL Server and IBM DB2 UDB running on Windows, UNIX, and z/OS platforms.

#### 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, see the ECDA documentation set.

### ExpressConnect for Oracle

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ExpressConnect for Oracle (ECO) is an embedded library loaded by Replication Server for replication to Oracle.

ExpressConnect for Oracle provides direct communication between Replication Server and a replicate Oracle data server. ExpressConnect for Oracle eliminates the need to install and set up a separate gateway server, thereby improving performance and reducing the complexities of managing a replication system.

ExpressConnect for Oracle is installed with Replication Server. There is no separate installer for ExpressConnect for Oracle.

See the *ExpressConnect for Oracle Configuration Guide*.



## ExpressConnect for HANA DB

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ExpressConnect for HANA DB is an embedded library loaded by Replication Server for replication to HANA DB.

ExpressConnect for HANA DB is installed with Replication Server 15.7.1 SP100 to provide direct communication between Replication Server and a replicate HANA DB data server.

ExpressConnect for HANA DB is installed with Replication Server. There is no separate installer for ExpressConnect for HANA DB.

See the *Replication Server Heterogeneous Replication Guide > HANA DB as Replicate Data Server > ExpressConnect for HANA DB and Replicate Database Connectivity for HANA DB*.



The scenarios for using Replication Server Options and Replication Server in a heterogeneous replication environment.

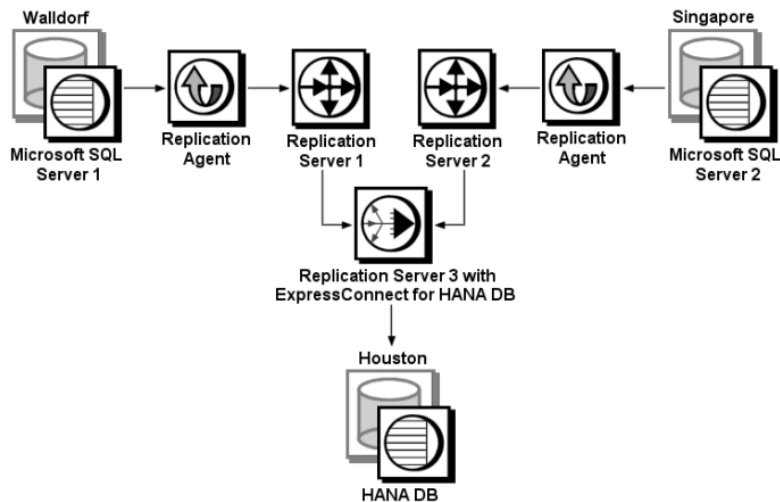
## **Consolidation of Data into a Central Repository**

The scenario describes a sample solution for setting up unidirectional consolidation of data into a central repository using RSO components.

A telecommunications company has satellite offices in Walldorf and Singapore that use Microsoft SQL Server to store local customer information. Company headquarters, in Houston, keeps company-wide customer information in memory on HANA DB. Replication Agent captures the changes to data at the satellite offices and passes them to Replication Server. Replication Server then applies data changes to the consolidated HANA DB customer database.

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

- HANA DB
- Microsoft SQL Server
- Replication Server with ExpressConnect for HANA DB
- Replication Agent for Microsoft SQL Server

**Figure 1: Unidirectional Consolidation into a Central Repository**

## Distribution of Enterprise Data Between Multiple Central Databases

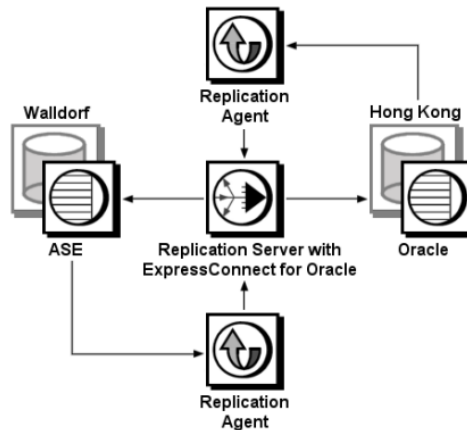
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The scenario describes a sample solution for replicating Oracle data using RSO for Oracle components.

A large regional supplier maintains its enterprise data in a central database in Hong Kong before merging with a second regional supplier of comparable size in Walldorf. The Hong Kong enterprise maintains data on an Oracle system, and the Walldorf enterprise maintains data on an ASE system. Both organizations implement a bidirectional replication system.

To set up bidirectional, enterprise-wide replication, the Hong Kong enterprise uses these components:

- ASE
- Oracle
- Replication Server
- Replication Agent for Oracle
- ExpressConnect for Oracle

**Figure 2: Bidirectional, Enterprise-Wide Replication**

## Multi-Path Replication

The scenario describes a sample Multi-Path Replication™ solution using RSO components.

A financial institution using Oracle as its primary and replicate database demands a high level of replication performance. To increase replication throughput and reduce latency and contention, the company is using a multipath replication environment that includes default and alternate connections for the primary and replicate database.

The corresponding replication definitions and subscriptions provide a multiple-replicate-connection replication system. There are two primary replication paths from the primary database to a Replication Server. Each primary path consists of a Replication Agent path with an associated primary connection. Each primary path replicates a different set of primary tables, stored procedures, or both. A dedicated route in the replicate Replication Server replicates high-priority transactions. For a description of end-to-end multipath replication scenarios, see the *Replication Server Heterogeneous Replication Guide*.

To set up multipath replication, the company uses these components:

- Oracle
- Replication Server
- Replication Agent for Oracle
- ExpressConnect for Oracle

**Figure 3: Multipath Replication with Oracle Primary and Replicate Databases**

