SAP

Overview Guide

SAP Replication Server® Options 15.7.1 SP200

Linux, Microsoft Windows, and UNIX

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CHAPTER 1   About SAP Replication Server Options

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

SAP 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)
- SAP HANA® database (only as the replicate database)

  To replicate data from a primary SAP HANA database to a replicate SAP HANA database, you must use the Replication Agent™ for SAP HANA. For more information, see the *Replication Agent for SAP HANA Configuration and Users Guide*.

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 SAP Replication Server Options. However, you can use the Enterprise Connect™ Data Access (ECDA) Option for ODBC that is included in SAP Replication Server Options to replicate into DB2 for z/OS.

The SAP Replication Server Options and their components are:

- SAP Replication Server, option for Oracle:
    - Replication Agent for Oracle
    - ExpressConnect for Oracle

- SAP Replication Server, option for Microsoft SQL Server:
    - Replication Agent for Microsoft SQL Server
    - ECDA Option for ODBC

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

SAP Replication Server Options are available separately from SAP Replication Server. However, to implement the solutions described in this document, you must have both the SAP Replication Server Options and SAP Replication Server. With SAP Replication Server and one or more SAP 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.
- Integrate disparate business systems, including legacy data, into a coordinated, easily accessed, and powerful corporate business enterprise.

CHAPTER 2   **SAP Replication Server Options Components**

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

Note: ECO and ECH are installed as part of SAP Replication Server, but the licenses for these options are sold as part of the applicable SAP Replication Server Options package.

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

Replication Agent

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

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

Replication Agent Configurations

Each SAP 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 SAP® Control Center for Replication. In addition, you can use any Open Client™ application (such as **isql**) that is capable of

communicating with the 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

Enterprise Connect Data Access (ECDA) is an integrated set of software applications and connectivity tools that allow SAP Replication Server to replicate to non-SAP 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 SAP 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

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

ExpressConnect for Oracle provides direct communication between SAP 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 SAP Replication Server. There is no separate installer for ExpressConnect for Oracle.

See the *ExpressConnect for Oracle Configuration Guide*.

ExpressConnect for SAP HANA Database

ExpressConnect for SAP HANA® database is an embedded library loaded by SAP Replication Server for replication to SAP HANA database.

ExpressConnect for SAP HANA database is installed with SAP Replication Server 15.7.1 SP200 to provide direct communication between SAP Replication Server and a replicate SAP HANA data server.

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

See *ExpressConnect for SAP HANA Database and Replicate Database Connectivity for SAP HANA Database* in the *Heterogeneous Replication Guide*.

CHAPTER 3 **Sample Solutions**

The scenarios for using SAP Replication Server Options and SAP 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 SAP 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 SAP HANA database. Replication Agent captures the changes to data at the satellite offices and passes them to SAP Replication Server. SAP Replication Server then applies data changes to the consolidated SAP HANA customer database.

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

- SAP HANA database
- Microsoft SQL Server
- SAP Replication Server with ExpressConnect for SAP HANA database
- Replication Agent for Microsoft SQL Server

**Figure 1: Unidirectional Consolidation into a Central Repository**
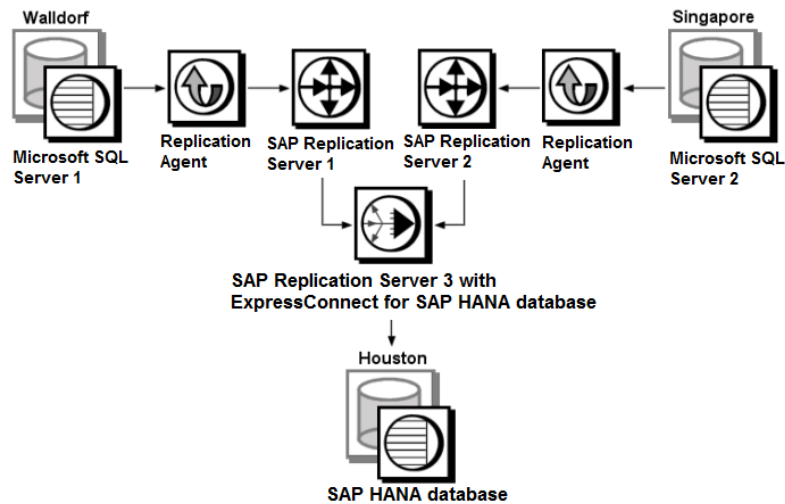
Distribution of Enterprise Data Between Multiple Central Databases

The scenario describes a sample solution for replicating Oracle data using SAP 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 SAP ASE system. Both organizations implement a bidirectional replication system.

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

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

Figure 2: Bidirectional, Enterprise-Wide Replication
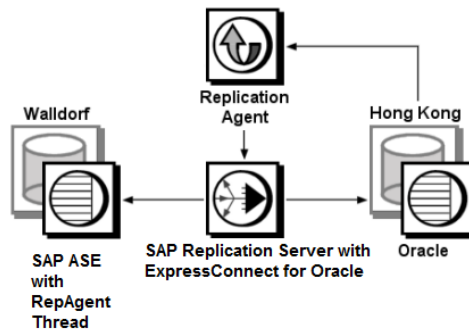
Multi-Path Replication

The scenario describes a sample Multi-Path Replication™ solution using SAP 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 an SAP 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 SAP Replication Server replicates high-priority transactions. For a description of end-to-end multipath replication scenarios, see the *SAP Replication Server Heterogeneous Replication Guide*.

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

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

Figure 3: Multipath Replication with Oracle Primary and Replicate Databases