SYBASE®
An SAP® Company

Installation and Release Bulletin

Replication Server® Messaging Edition 15.7.1 SP100

Linux, Microsoft Windows, and UNIX

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Product Summary

This installation and release bulletin provides late-breaking information about Replication Server® Messaging Edition (RSME). A more recent version may be available on the Web.

Replication Server Messaging Edition

Replication Server Messaging Edition captures transactions (data changes) in various databases such as Adaptive Server® Enterprise (ASE) and other non-Sybase® databases such as Oracle, IBM DB2, and Microsoft SQL Server, and delivers them as events to external applications, either directly or through a message bus, in real time.

The primary goal of a messaging system is to manage communication across heterogeneous systems, enabling individuals throughout the enterprise to efficiently access and share information. A messaging solution must seamlessly integrate with your other IT resources, and scale to meet both your current and future messaging needs. The RSME provides a messaging solution that addresses these challenges.

RSME also:

- Provides access to a variety of heterogeneous data sources.
- Captures and propagates real-time events in data sources to time-critical applications.
- Provides adapters for integrating with non-Sybase message providers such as IBM WebSphere MQ, TIBCO RV, Sonic MQ, or Sybase-certified message providers that are compliant with Java Message Service (JMS) 1.1.

  See the complete list of supported messaging providers at *http://upc.sybase.com/* . Select **Search by Base Product > RepConnector**.
- Synthesizes analytical information with data from your organization's operational processes to provide just-in-time information.
- Enables applications to be resilient to network failure.

The RSME includes these components:

- RepConnector™ 15.0.2 ESD #7
- Replication Server 15.7.1 SP100
- Replication Agent™ 15.7.1 SP100

Replication Server Functionality Not Supported by RSME

RSME supports Replication Server data manipulation language (DML) statements (**insert**, **delete**, **update**). However, RSME does not support any Replication Server applications that do not use DML statements such as high volume adaptive replication (HVAR), Data Server Interface (DSI) bulk copy-in, and dynamic SQL.

RepConnector

RepConnector provides a nonpolling, nontrigger-based solution to database integration, building on the Replication Server noninvasive system to push database transactions into a traditional integration environment.

RepConnector provides adapters for sending messages to TIBCO, IBM MQ, SonicMQ, or Sybase-certified messaging systems that are compliant with JMS 1.1. It can also send messages to virtually any other user or application.

RepConnector:

- Delivers database events and metadata from Replication Server to the configured destination
- Follows transactional behavior
- Manages connections using:
  - RepConnector Manager – a GUI in the Eclipse framework
  - **ratool** – a command line utility
- Can group database events into a single transaction
- Supports binary datatypes
- Parses replication events and generates XML documents
- Transforms incoming database events into XML messages, and routes them into configured message queues
- Can transform incoming database events into their application-specific format
- Detects message events and routes them to database tables
- Supports these application servers:
  - JBoss AS 6.1.0.Final “Neo”
  - JBoss AS 7.1.1.Final “Brontes”
  - Oracle WebLogic Server 12c (12.1.1)

Note: RepConnector does not support all Replication Server functionality.

See the *RepConnector Configuration and Users Guide.*

See also

- *Replication Server Messaging Edition* on page 1

Replication Server

Replication Server distributes and synchronizes operational data in a heterogeneous replication environment. Replication Server keeps data up to date in multiple databases, so that you can access local data instead of remote, centralized databases.

Replication Server works to distribute data over a network by:

- Providing application developers and system administrators with a flexible publish-and-subscribe model for marking data and stored procedures to be replicated.
- Managing replicated transactions while retaining transaction integrity across the network.

See the *Replication Server Administration Guide.*

Replication Agent

Replication Agent captures transactions in a primary database and sends them to a Replication Server for distribution to replicate targets.

Replication Agent extends the capabilities of Replication Server by allowing non-Sybase data servers to act as primary data servers in a replication system based on Sybase replication technology.

Replication Agent supports data replication from Oracle, Microsoft SQL Server, and IBM DB2 UDB installed on UNIX, Linux, and Microsoft Windows.

See the *Replication Agent Administration Guide.*

Supported Platforms

Review the platform and operating system configurations that are compatible with RSME.

Table 1. RSME Requirements

Platform	Operating System Version
Linux x86-64 (32-bit and 64-bit)	Red Hat Enterprise Linux 5.5
Solaris (SPARC 64-bit)	Solaris version 10
HP-UX	HP-UX Itanium 11.31
IBM AIX	IBM AIX 6.1
Microsoft Windows	Microsoft Windows 7

Note: Replication Agent for Microsoft SQL Server is supported only on Windows platform.

See the individual product release bulletin for any patch level information for your operating system. For a complete list of supported operating systems, see the Sybase Platform Certification Web site at *http://certification.sybase.com/ucr/search.do*.

License Requirements

RSME uses the Sybase Software Asset Management (SySAM) licensing mechanism for license administration and asset management tasks.

After you purchase RSME components, go to the Sybase Product Download Center (SPDC) Web site at *http://sybase.subscribenet.com* to generate and download the licenses. See the *SySAM Users Guide*.

Deployment and Licensing Options for RSME Components

Check the deployment and license options for RSME components.

Component	Deployment and Licensing Options
RepConnector	• A SySAM served or unserved license is required. • Installation is allowed on as many machines in the distributed environment for which you have purchased licenses.
Replication Server	• A SySAM served or unserved license is required. • Installation is allowed on as many machines in the distributed environment for which you have purchased licenses.
Replication Agent	• Obtain the Replication Agent license from the SPDC Web site. • Installation is allowed on multiple machines that contain the supported database in the distributed environment.

Installing Static License for Replication Agent

Install, in RSME, the `SYBASE_RSME_RAX.lic` file that contains a valid SySAM license for Replication Agent component.

1. Install the Replication Agent component that is distributed with RSME.
2. Stop Replication Agent if it is running.
3. Copy `SYBASE_RSME_RAX.lic` to:
   - UNIX – *$SYBASE*`/SYSAM-2_0/licenses`
   - Windows – *%SYBASE%*`\SYSAM-2_0\licenses`

   where *$SYBASE* or *%SYBASE%* is the Replication Agent installation directory.
4. Restart Replication Agent.
5. Verify the Replication Agent log file to determine whether Replication Agent has started successfully. You can access the Replication Agent log files at these locations:

- UNIX – `$SYBASE/RAX-15_5/`*instance_name*`/log/`*instance_name*`.log`
- Windows – `%SYBASE%\RAX-15_5\`*instance_name*`\log\`*instance_name*`.log`

Product Compatibilities

RSME components are compatible with non-Sybase products.

Enterprise Messaging Systems Compatible with RepConnector

Several enterprise messaging systems and versions are supported by RepConnector 15.0.2 ESD #7.

Enterprise Messaging System	Versions
TIBCO Rendezvous	7.4.1
TIBCO Enterprise for JMS	4.3.0
TIBCO Active Enterprise	4.1
IBM WebSphere MQ/MQJMS	6.0
Sonic MQ	7.5

See the complete list of supported enterprise messaging systems at *http://upc.sybase.com/*. Select RepConnector from the product list in Search by Base Product.

Databases and Drivers Compatible with Replication Agent

Check the primary database server versions that are supported by Replication Agent and the JDBC™ driver versions that are required to support connectivity between Replication Agent and the primary data server.

Table 2. Databases Compatible with Replication Agent

Database	Versions
IBM DB2 Universal Database	Enterprise Edition 9.7 and 9.5
Oracle Server	11g (11.1, 11.2), 11g ASM, 11g RAC, 10g (10.2), 10g ASM, 10g RAC, 10g in 9i compatibility mode

Database	Versions
Microsoft SQL Server	2012 as the primary database, 2008 R1 Service Pack 2, and 2008 R2 – Replication Agent does not support the features and datatypes introduced in Microsoft SQL Server 2008. **Note:** Microsoft SQL Server 2005 and earlier versions are no longer supported. You must upgrade your primary database server to a supported version before migrating Replication Agent for Microsoft SQL Server instance(s). See the Certification Web site at *http://certification.sybase.com/ucr/search.do* for detailed information on the supported versions.

Replication Agent requires a JDBC 4.0-compliant driver for the primary data server.

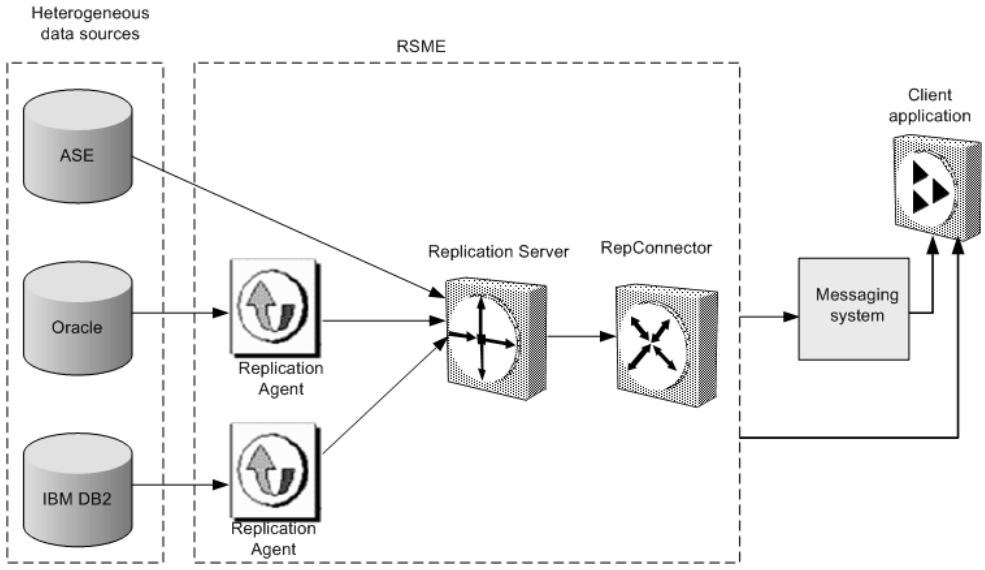
Table 3. Drivers Compatible with Replication Agent

Driver	Versions
DB2 Universal Database Administration Client	64-bit on Linux platform; 32-bit on Windows platform only. Use version: • 9.5 – for DB29.5 • 9.7 – for DB2 9.7
Oracle JDBC driver	• 10.2 for JDK 1.4 and 1.5 • 11.1 for JDK 1.5 • 11.2 for JDK 1.6 **Note:** You can use any of these drivers with Oracle version 10.1, 10.2, or 11.1. However, for Oracle 11.2, you must use Oracle JDBC 11.2 driver.
Microsoft SQL Server JDBC driver	3.0

For Replication Server product compatibilities, see the release bulletins for the appropriate platforms.

RSME Deployment Architecture

RSME is a distributed system that comprises several components.



Installing RSME Components

Install each RSME component separately, following the instructions in each component's installation guide.

Be aware of these considerations:

- Before you install RepConnector 15.0.2 ESD #7, one of these application servers must be installed and running on your local machine:
  - Red Hat JBoss AS6 running with JDK 1.6
  - Red Hat JBoss AS7 running with JDK 1.7
  - Oracle WebLogic version 12c (12.1.1) running with JDK 1.7
- Install Replication Agent for Oracle on a machine from which it can directly access the Oracle redo logs and the archived redo logs.
- Install Replication Agent for Microsoft SQL Server on a machine from which it can directly access the SQL Server transaction log files.

Note: If your primary database is Adaptive Server, you need not install Replication Agent.

Configuring and Administering RSME Components

Configure and administer RSME components.

Configuring and Managing RepConnector

Use RepConnector Manager, a plug-in to the Eclipse framework, to configure and manage RepConnector activities.

1. Run RepConnector Manager on the local machine where the RepConnector runtime component is installed, or on any remote machine that can access the machine on which the RepConnector runtime component is installed.
2. To access the remote machine, verify that the HTTP connection to the application server on which the RepConnector runtime component is deployed and running, is available throughout the network.
3. Use the RepConnector Manager to configure the RepConnector connections.

See the *RepConnector Configuration and Users Guide.*

Configuring and Managing Replication Server and Replication Agent

Use the Replication Manager (RM) plug-in to manage and monitor Replication Server and Replication Agent instances.

Configure, manage, and monitor a 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 details, see the:

- Replication Manager online help
- *Replication Server Configuration Guide*
- *Replication Agent Administration Guide*

Sample Scenarios

There are various ways you can use RSME components to meet the needs of your enterprise.

Scenario: Managing Risks in Financial Services

A trading company wants to offer proactive notifications of changes to customer data and securities data.

For example, if the buy limit for a security is reached, the company wants to immediately send this information to all trading systems. The system that is currently in place must poll the securities operational database, which introduces an information lag, which in turn, introduces the likelihood of credit limit breaches. The current implementation does not allow the company lessen this risk, or to identify security breaches early.

The current system periodically polls the database that holds credit limit thresholds resulting in performance degradation to the operational systems. The frequency of polling determines how quickly the trading company can identify whether there is a credit-limit break.

The trading company wants to automatically prevent trading once a customer's credit limit has been reached. Polling the securities operational database is not frequent enough to accomplish this goal

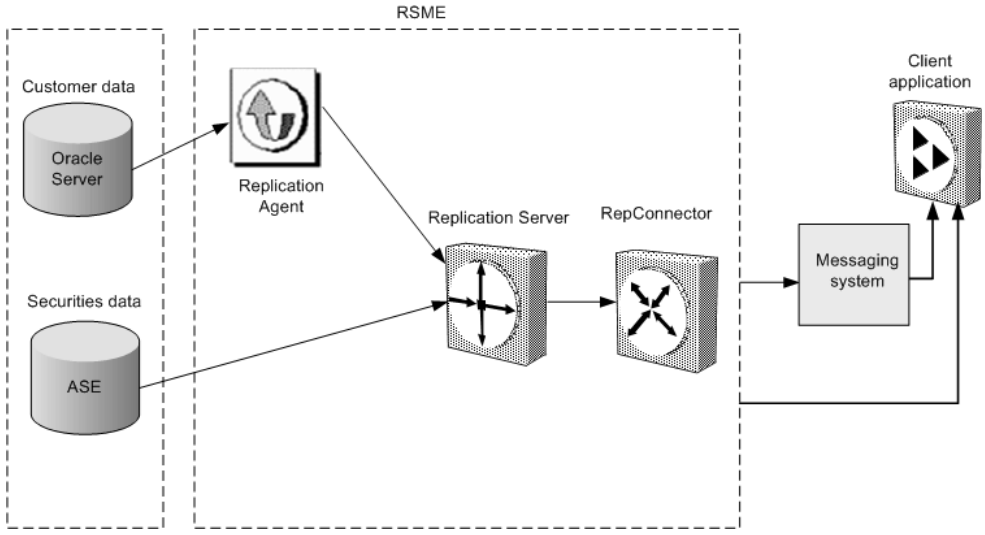
At various locations, customer and securities data is stored in Sybase Adaptive Server Enterprise (ASE) and Oracle databases.

RSME pushes time-critical data from heterogeneous databases to the messaging architecture, eliminating the information lag created by batch updates or intermittent polling processes.

When a customer places a trade request, the trading company uses RSME to send messages from their customer and securities databases to a message bus. The trade request is read by a client application that computes credit risk. If the credit limit is not reached, the customer trade is allowed. If the buy limit has been reached, all trading systems connected to the message bus are immediately notified to take the necessary precautionary measures.

The events, or messages are delivered to external applications in real time through a message bus such as IBM WebSphere MQ or JMS.

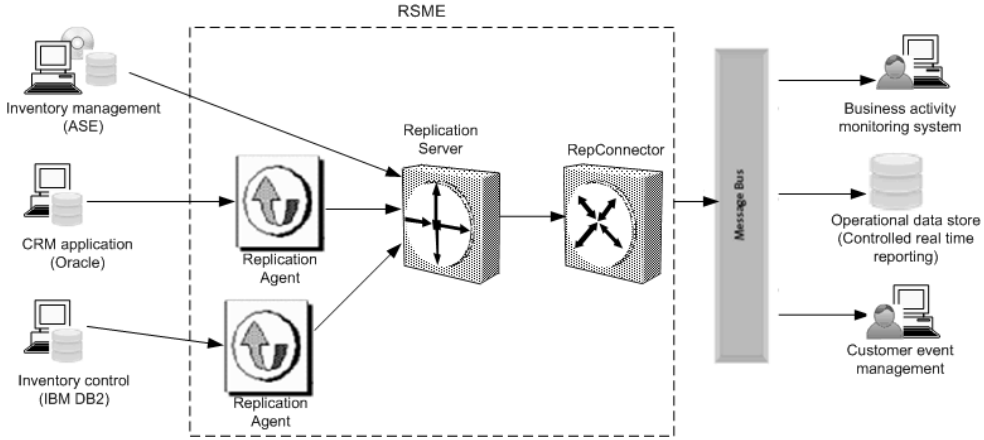
Figure 1: RSME Data Flow



Scenario: Publishing from a Database to a Message Bus

You can use RSME to capture events from various databases and publish the events in real time over a message bus.

Figure 2: Publishing from Any Database to Any Message Bus



In this figure, events are published from different database systems to a number of applications. Inventory management is running on Adaptive Server. A customer relationship management (CRM) application is running on an Oracle database, and a manufacturing quality control system is running on IBM DB2.

In this configuration, a Sybase-certified message bus can be used. An application that is monitoring business activity requires real-time notification of critical events from all three source databases. The customer event management application enables the organization to notify customers proactively based on critical events. The organization may also want to, for example, notify customers if they have been sent defective items as identified by the quality control system. An operational data store is updated in real-time from all three source systems.

Known Issues

Review known issues and workarounds, listed by Change Request (CR) number. For known issues concerning RepConnector, Replication Agent, and Replication Server, see the appropriate product and version release bulletin.

The issues documented here are in addition to those described in the individual product release bulletins.

Known Issues for the Sybase Installer

Review known issues with the Sybase installer that are not specific to a particular data server type.

Table 4.

CR #	Description
	Cannot view text fields properly when using Hummingbird Exceed from Windows. If you use Hummingbird Exceed from a Windows workstation to install Replication Agent on a UNIX host, you might not be able to view all of the text fields on the Sybase installer screens. **Workaround:** Either use a native X-Windows session to run the Sybase installer, or run it in console or silent mode. See the *Replication Agent Installation Guide*.
399954	**Sybase Central fails to open after uninstalling Replication Agent.** Uninstalling Replication Agent removes the SYBASE system environment variable. Consequently, Sybase Central™ cannot open. **Workaround**: Redefine the SYBASE system environment variable.

Obtaining Help and Additional Information

Use the Product Documentation site and online help to learn more about this product release.

- Product Documentation at *http://sybooks.sybase.com/* – online documentation that you can access using a standard Web browser. You can browse documents online, or download them as PDFs. The Web site also has links to other resources, such as white papers, community forums, maintenance releases, and support content.
- Online help in the product, if available.

To read or print PDF documents, you need Adobe Acrobat Reader, which is available as a free download from the *Adobe* Web site.

Note: A more recent release bulletin, with critical product or document information added after the product release, may be available from the Product Documentation Web site.

Technical Support

Get support for SAP® products.

If your organization has purchased a support contract for this product, then one or more of your colleagues is designated as an authorized support contact. If you have any questions, or if you need assistance during the installation process, ask a designated person to contact Technical Support as specified in your contract:

- Sybase Technical Support or the Sybase subsidiary in your area
- SAP Technical Support

Customers with an SAP support contract can obtain support for this product at the SAP support site, *http://service.sap.com/sybase/support*. You can also find information about Sybase support migration at this location (login may be required).

Customers with a Sybase support contract can obtain support for this product at *http://www.sybase.com/support* (login required).

Downloading Product Updates

Get maintenance releases, support packages and patches, and related information.

- If you purchased the product directly from Sybase or from an authorized Sybase reseller:
  a) Go to *http://www.sybase.com/support*.
  b) Select **Support > EBFs/Maintenance**.

c) If prompted, enter your MySybase user name and password.
d) (Optional) Select a filter, a time frame, or both, and click **Go**.
e) Select a product.

   Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as an authorized support contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click **My Account** to add the "Technical Support Contact" role to your MySybase profile.
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- If you ordered your product under an SAP contract:
  a) Go to *http://service.sap.com/swdc* and log in if prompted.
  b) Select **Search for Software Downloads** and enter the name of your product. Click **Search**.

Product and Component Certifications

Certification reports verify Sybase product performance on a particular platform.

To find the latest information about certifications:

- For partner product certifications, go to *http://www.sybase.com/detail_list?id=9784*
- For platform certifications, go to *http://certification.sybase.com/ucr/search.do*

Accessibility Features

Accessibility ensures access to electronic information for all users, including those with disabilities.

Documentation for this product is available in an HTML version that is designed for accessibility.

Vision impaired users can navigate through the online document with an adaptive technology such as a screen reader, or view it with a screen enlarger.

HTML documentation has been tested for compliance with accessibility requirements of Section 508 of the U.S Rehabilitation Act. 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 may 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 the Sybase Accessibility site: *http://www.sybase.com/products/accessibility*. The site includes links to information about Section 508 and W3C standards.

You may find additional information about accessibility features in the product documentation.