SymmetricDS™

Enterprise Replication and Change Data Capture

Overview

SymmetricDS is the leading open source solution for Data Replication, Change Data Capture, and Data Transformation for both databases and file systems in a heterogeneous enterprise environment. Performance and scalability allow it to replicate thousands of systems asynchronously in near real time. With flexible configuration, powerful scripting, and rich programming interfaces, SymmetricDS can be extended to meet a wide range of data synchronization requirements.

Key Features

DATABASE REPLICATION

- Support for most major databases.
- Trigger-based Change Data Capture (CDC) system replicates data in near real time with low system overhead.
- Transaction awareness groups row changes to be committed together.
- Horizontal and vertical data filtering for subsets of a table.
- Transformation for translation, enhancement, and filtering of data.
- Map data between columns and tables to bridge different applications.
- Detect conflicts and resolve using automated rules or manual notification.

FILE REPLICATION

- Support for most major file systems and operating systems.
- Configure base directories and whether to include sub-directories.
- Filter which files to include and exclude from synchronization.
- Extend and change behavior of the file sync by configuring scripts to run during specific synchronization events.

CONFIGURATION

- One-way or bi-directional, multi-master synchronization.
- Pull or push delivery controls which side creates the connection.
- Schedule or run continuously for near real time synchronization.
- Organize groups of nodes into tiers that sync with each other.
- Changes grouped into batches for tracking and efficiency.
- Initial data load prepares the remote database and file system for synchronizing changes.

COMMUNICATION

- Efficient data protocol for low-bandwidth operation.
- Encryption of data stream for secure communication.
- Withstand periods of downtime and automatically recover from a network outage.
- Deploy nodes across local or wide area networks.

USER

- Web management console for easy setup and support.
- Configure and monitor all nodes from central location.
- Scripting support for event handling and data transformation.
- Java programming interface allows customizations and extensions.
- Deploy as a standalone server, web application server, or embedded application.

Business Benefits

- Consolidate data synchronization with a single mechanism for both files and databases.
- Guarantee replication of data without requiring special drivers or modifications to database applications.
- Consolidate, distribute, or backup heterogeneous data across the enterprise.
- Protect sensitive data by filtering it from operational data and routing it to authorized recipients.
- Improve integration performance and make efficient use of bandwidth.
- Massage, cleanse, and enhance data in near real time for reporting that enables informed business decisions.

Multiple Platforms

SymmetricDS works with most major database systems as well as with databases geared towards smaller and embedded systems.

Databases Supported:

• Oracle	• PostgreSQL
• IBM DB2	• Greenplum
• SQL Server	• Redshift
• MySQL	• Interbase
• MariaDB	• Apache Derby
• Informix	• HSQLDB
• Firebird	• H2
• Sybase ASE	• SQLite
• SQL Anywhere	• MongoDB

SymmetricDS can run on any system with a Java Runtime Environment. It is adaptable, running on small memory systems and scaling to support large central installations.

System Requirements:

- Windows, Linux, Solaris, Mac OS X, Android, iOS
- Java SE version 6 or newer

Automatic Recovery Model

Tables are assigned to logical channels that allow replication to continue on other channels when one channel is in error. All incoming and outgoing data are assigned batch numbers that are acknowledged for tracking, guaranteeing replication. Channels in error are retried without blocking other channels, thereby allowing replication to continue whenever possible. If a system operates offline for days or weeks, once reconnected, SymmetricDS recovers and sends all saved data replication.

Professional Support

A production environment demands dependable, expert resources to provide technical assistance and troubleshoot problems. A Support Subscription from JumpMind provides access to highly skilled support engineers with guaranteed initial response times.

Support Options:

Standard Support – resolve unlimited issues with 6-hour high priority 1 initial response time during business hours.

Enterprise Support – resolve unlimited issues with enhanced 2-hour Priority 1 initial response time around the clock and via phone.

Product Solutions

SymmetricDS has proven successful in business situations that require fast and reliable database replication across local and wide area networks. It is used in the following common solutions:

DATA SYNCHRONIZATION / CONSOLIDATION

Data from multiple databases across the enterprise are synchronized and combined, working across low-bandwidth connections and withstanding periods of network outage. Thousands of databases can be connected to a central one using one or more tiers of synchronization.
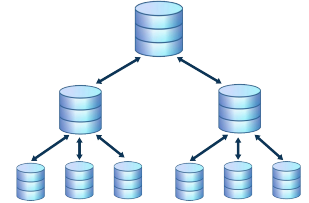
WORKLOAD DISTRIBUTION

The operational database is replicated to a data warehouse or a reporting database. The main application continues to use the operational database, while the secondary database is used for reporting and analysis. The data can be filtered and transformed to enhance reporting.

Operational → Data Warehouse
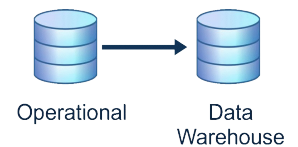
BRIDGE BETWEEN DATABASES

Data is transformed during replication between different databases. Secure web transport protocols are used to replicate from a protected database to a front-end database.

Website — Firewall — Transform — Production
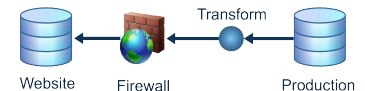
DATABASE BACKUP

Critical database applications are protected by continuously replicating to a standby database. Changes are sent to the standby, which may be on a local or wide area network. In an emergency, the application is reconnected to the standby database. Once the production database is available again, SymmetricDS will replicate changes to it from the standby. The switch-over can also be used to perform planned maintenance and system upgrades. Since SymmetricDS is flexible enough to replicate between different databases and table layouts, some tables of the upgraded database may have new columns in old tables.

About JumpMind

JumpMind, Inc is an open source software company specializing in data replication and integration software for the enterprise. We provide consulting, development, and training services for SymmetricDS. Our mission is to provide software that is creative, practical, elegant, and easy to use. We embrace an open model of development and collaboration with a worldwide community that helps us make better software faster.

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