

RTI Connex DDS Core Libraries

Database Setup

Version 6.1.1



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The security features of this product include software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Notice

Any deprecations noted in this document serve as notice under the Real-Time Innovations, Inc. Maintenance Policy #4220.

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1 Database Setup

Support for external databases is deprecated as of release 6.1.1 and will be removed in a future release. Specifically: since Durable Writer History and Durable Reader State require an external database, those features are deprecated in this release; the `<external_database>` tag in *RTI Persistence Service* is deprecated in this release.

In most cases, *RTI® Connex® DDS* does not use or require a database. However, if you want to use some of the durability features of *Connex DDS*, or to use *RTI Database Integration Service*, you need a relational database, such as MySQL. This section describes how to install and configure a database for use with *Connex DDS*.

- **Durable Writer History**—This feature allows a *DataWriter* to locally persist its history cache so that it can survive shutdowns, crashes and restarts. When an application restarts, each *DataWriter* that has been configured to have durable writer history automatically loads all the data in its history cache from disk and can carry on sending data as if it had never stopped executing. To the rest of the system, it will appear as if the *DataWriter* was temporarily disconnected from the network and then reappeared.
- **Durable Reader State**—This feature allows a *DataReader* to persist its state and remember which data it has already received. When an application restarts, each *DataReader* that has been configured to have durable reader state automatically loads its state from disk and can carry on receiving data as if it had never stopped executing. Data that was received by the *DataReader* before the restart will be suppressed, so it is not sent over the network.
- **RTI Persistence Service**—*Persistence Service* provides reliable data availability. The service saves data from *Connex DDS* publishing applications in memory or permanent storage, so it can be delivered to subscribing applications that join the system at a later time—even if the publishing application has already terminated. *Persistence Service* implements the optional Persistence Profile, defined in the OMG's Data Distribution Service for Real-time Systems specification.

To use MySQL as the database, you need all of the following:

- MySQL 5.7 or higher

The installation of MySQL is beyond the scope of this document. Please refer to the MySQL Reference Manual for the process to install and configure MySQL.

- MySQL ODBC 5.1.6 driver or higher.

The driver is not bundled with the MySQL server and must be installed separately.

The ODBC connector can be downloaded from:

<http://dev.mysql.com/downloads/connector/odbc>

The installation guide can be found here:

<https://dev.mysql.com/doc/connector-odbc/en/connector-odbc-installation.html>

- UnixODBC 2.2.12 or higher (for non-Windows systems)

The MySQL ODBC driver requires an ODBC driver manager. We recommend using UnixODBC, a complete, free and open ODBC solution for Linux systems. The driver manager can be downloaded from <http://www.unixodbc.org>.

RTI has tested *Persistence Service*, *Durable Writer History*, and *Durable Reader State* with MySQL 5.7 with MySQL ODBC 8.0.22 driver.

Although *Persistence Service*, *Durable Writer History*, and *Durable Reader State* use an ODBC driver to access an external database, the only supported database is MySQL 5.7 and higher.

2 Creating a Data Source for MySQL on a Linux System

Connext DDS uses the MySQL ODBC driver to access data sources.

The connection information for each data source is stored in an ODBC INI file. This can be a file called **.odbc.ini** in the user's home directory, or it can be configured using the environment variable ODBCINI. The stored information describes each data source in detail, specifying the driver name, a description, and any additional information the driver needs to connect to the data source.

To create the ".odbc.ini" file with a DSN named "Example", follow these steps:

1. Create a new text file named ".odbc.ini" in your home directory.
2. Insert these lines in the file:

```
[ODBC Data Source]
Example=MySQL Driver
[Example]
DRIVER=/usr/lib/libmyodbc5.so
Database=test
```

Make sure that DRIVER points to the valid location of the MySQL ODBC driver on your system.

3 Creating a Data Source for MySQL on a Windows System

Connext DDS uses the MySQL ODBC driver to access data sources.

The connection information for each data source is stored in the Windows registry. The stored information describes each data source in detail, specifying the driver name, a description, and any additional information the driver needs to connect to the data source.

To add a data source named "Example", follow these steps:

1. Open the ODBC Data Source Administrator:
 - Choose **Start, Control Panel, Performance and Maintenance, Administrative Tools, Data Sources (ODBC)**.
2. Select the **System DSN** tab.
3. Click **Add**; the Create New Data Source dialog appears.
4. Select the MySQL driver from the list of drivers.
5. Click **Finish**; the MySQL ODBC Driver Configuration dialog appears.
6. Fill out the fields in the dialog.
 - Enter "Example" as the Data Source Name (DSN).
 - Enter a valid username and password.
 - Select a database (for example, "test").
 - All other fields can be left empty.
 - Click **OK**.