RTI Database Integration Service

Release Notes

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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Chapter 1 Supported Platforms and System Requirements

*RTI*® Database Integration Service requires *RTI Connext*® DDS software with the same version number.

Database Integration Service supports MySQL™ and PostgreSQL®. You must have at least one of these installed. For version numbers, see 1.1 ODBC Driver Requirements on the next page.


### Table 1.1 Supported Linux Platforms

<table>
<thead>
<tr>
<th>Operating System</th>
<th>CPU</th>
<th>PostgreSQL</th>
<th>MySQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CentOS™ 6.0, 6.2-6.4</td>
<td>x64</td>
<td>YES</td>
<td>YES Tested with MySQL 5.7</td>
</tr>
<tr>
<td>Red Hat® Enterprise Linux® 6.0-6.5, 6.7, 6.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Available on demand)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUSE® Linux Enterprise Server 12 SP2, 15 SP1</td>
<td>x64</td>
<td>YES Tested with PostgreSQL 9.5.2+ on a SUSE 12 SP2 system with x64 CPU. Only subscriptions are supported.</td>
<td></td>
</tr>
<tr>
<td>(Available on demand)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 1.2 Supported Windows Platforms

<table>
<thead>
<tr>
<th>Windows Version</th>
<th>CPU</th>
<th>MySQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 8, Windows Server 2012 R2</td>
<td>x64</td>
<td>YES Tested with MySQL 5.7 on Windows Server 2012 only</td>
</tr>
<tr>
<td>(Available on demand.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For details on these platforms, see the *RTI Connext DDS Core Libraries Platform Notes.*
Additional platforms not listed in this document may be supported through special development and maintenance agreements. Contact your RTI sales representative for details.

1.1 ODBC Driver Requirements

- MySQL ODBC and UnixODBC

  The *Database Integration Service*-to-MySQL daemon requires the separate installation of the MySQL ODBC 5.1.6 (or higher) driver. This release of *Database Integration Service* has been tested with MySQL ODBC driver manager version 8.0.22.

  For Linux platforms, UnixODBC 2.2.12 (or higher) must also be installed. See 2.3 ODBC Driver Compatibility on page 3.

- PostgreSQL and UnixODBC

  The *Database Integration Service*-to-PostgreSQL daemon requires the separate installation of the PostgreSQL ODBC driver. This release of *Database Integration Service* has been tested with PostgreSQL ODBC driver version 09.05.0300.

  The UnixODBC driver manager is also required. This release of *Database Integration Service* has been tested with UnixODBC driver manager version 2.3.4.
Chapter 2 Compatibility

Below is basic compatibility information for this release.

For backward compatibility information between 6.1.1 and previous releases, see the Migration Guide on the RTI Community Portal (https://community.rti.com/documentation).

2.1 Compatibility with Unbounded Types

*Database Integration Service* does not support topics that contain unbounded types. Any topic containing unbounded sequences or strings will be ignored by *Database Integration Service*.

2.2 Compatibility with RTI Connext DDS

*Database Integration Service* 6.1.1 is compatible with *Connext DDS* 6.1.1 and lower. It is also compatible with *RTI Data Distribution Service* 4.5[b-e], 4.4, 4.3 and 4.2e, except as noted in the *RTI Connext DDS Core Libraries Release Notes* for 5.3.1.

*Database Integration Service* is not compatible with *RTI Data Distribution Service* 4.2c and lower.

2.3 ODBC Driver Compatibility

*Database Integration Service* to MySQL links to the UnixODBC library *libodbc.so.1*. In release 2.3.1, UnixODBC changed the library version from 1 to 2. If after installing UnixODBC *Database Integration Service* cannot find *libodbc.so*, create a symlink to *libodbc.so.1* from *libodbc.so.2*.
Chapter 3 What's New in 6.1.1

There are no changes to Database Integration Service in release 6.1.1.
4 Previous Release

4.1 What’s New in 6.1.0

4.1.1 New Platforms

This release adds support for MySQL on Windows 8 and Windows Server 2012 R2 platforms (x64).

4.1.2 Removed Database

The Microsoft® SQL Server™ database is no longer supported.
Chapter 5 Known Issues

5.1 No Support for Unbounded Types

*Database Integration Service* does not support topics that contain unbounded types. Hence, any topic containing any unbounded sequence or string will be ignored by *Database Integration Service*.

5.2 Manual Table Creation does not Trigger Daemon to Create Publication/Subscription when Typecode Unknown

This issue only applies when using the MySQL database.

If an entry is inserted into the RTIDDS/Publications or RTIDDS/Subscription table and the typecode for the data type specified in the entry has not yet been discovered by the daemon, the daemon will delay the creation of the DDS publication/subscription if the table does not already exist in the database. When either the daemon discovers the typecode or the user manually creates the table, the daemon should create the corresponding DDS publication/subscription.

However, for the MySQL database only, in the situation described above, if you create a table manually for a pending entry, the daemon is not triggered to create the corresponding publication/subscription. The workaround is to update the entry by modifying the entry in the corresponding meta-table. This will trigger the daemon to create the publication/subscription.

5.3 WCHAR and WVARCHAR Not Supported as Primary Keys for MySQL

Due to a bug in MyODBC (MySQL bug# 17983), tables with a WCHAR or WVARCHAR column in the primary key are not supported in conjunction with MySQL.
5.4 WCHAR and WVARCHAR Not Published Correctly for MySQL

The contents of WCHAR and WVARCHAR fields are not published correctly by Database Integration Service Publications in MySQL. Zero (0) is published instead of the correct value.

5.5 IdentifierSeparatorChar Cannot Be ‘.’ for MySQL

When using MySQL, the IdentifierSeparatorChar cannot be ‘.’ due to a bug in MyODBC (MySQL bug# 15547). The default IdentifierSeparatorChar for MySQL is ‘$’.

5.6 Applications with Disabled Inline-Keyhash

If the Connext DDS application has a keyed data-type and has DataWriterProtocolQosPolicy.disable_inline_keyhash set to TRUE (not the default setting), Database Integration Service may misinterpret samples as being from the wrong instance or report deserialization errors.

5.7 Table Initialization in Database Replication Scenarios may Require Keeping Copy of Table in Memory for MySQL

If Database Integration Service is configured in table replication mode using the INI attribute, TableReplicationMode, the daemon may end up keeping a copy of the whole table in memory. This may be a problem for databases such as MySQL where tables may become quite large.

To avoid the problem, disable table initialization by setting dw.durability.kind in RTIDDS_PUBLICATIONS and dw.durability.kind in RTIDDS_SUBSCRIPTIONS to VOLATILE_DURABILITY_QOS.

5.8 Cannot Run as Windows Service over Shared Memory

If you start Database Integration Service as a Windows service, the shared-memory transport is not supported. For details on how to configure DDS applications to use different transport settings, please see the RTI Connext DDS Core Libraries User’s Manual (Section 8.5.7, TRANSPORT_BUILTIN QosPolicy).

[RTI Issue ID RTC-198]

5.9 Types wchar, wstring, and long double not Supported with PostgreSQL Database

Subscriptions to topics whose types contain wchar, wstring, or long double members are not supported with PostgreSQL integration.

[RTI Issue ID RTC-263]
5.10 Adding New Subscriptions to RTIDDS_SUBSCRIPTION Table at Run Time not Supported for PostgreSQL Database

This version of Database Integration Service does not support creating new subscriptions after startup for a PostgreSQL database. Subscription will have to be defined in the configuration XML file or added to the RTIDDS_SUBSCRIPTION table before starting the Database Integration Service daemon.

[RTI Issue ID RTC-264]

5.11 Database Integration Service to MySQL UTF Support

Database Integration Service does not support MySQL databases with UTF-8 character set. Consequently, communication between the database service and the Database Integration Service daemon (rtirtc_mysql) is not established and the updates on the publication and subscription tables are not propagated. You may detect this behavior by checking if the table RTIRTC_TBL_INFO has not been created.

You can check the current database character set with the following SQL statement:

```sql
SELECT DEFAULT_CHARACTER_SET_NAME, DEFAULT_COLLATION_NAME FROM INFORMATION_SCHEMA.SCHEMATA WHERE SCHEMA_NAME = '<dbname>';```

To fix this situation you need to specify the latin1 character set. Here are two ways to do this:

**Method 1**

Change the default character set of the database used by Database Integration Service:

1. Stop the Database Integration Service daemon.
2. Run the following SQL statement to change the database character set:
   ```sql
   ALTER DATABASE DEFAULT CHARACTER SET latin1;
   ```
3. Delete all the Database Integration Service metatables: RTIDDS_PUBLICATIONS, RTIDDS_SUBSCRIPTIONS, RTIRTC_LOG, and RTIRTC_TBL_INFO.
4. Restart the Database Integration Service daemon.

**Method 2**

Comment out the following lines or change them to “latin1” inside the file `my.ini` in your home directory or MySQL installation directory.

```ini
default-character-set=utf8
character-set-server=utf8
```

The MySQL service should be restarted after changing the values. Also, the database should be recreated after restarting:

```sql
drop database <dbname>;
create database <dbname>;
```
5.12 'Incorrect arguments to mysql_stmt_execute' Errors when using MySQL ODBC Driver

[RTI Issue ID RTC-141]

5.12 'Incorrect arguments to mysql_stmt_execute' Errors when using MySQL ODBC Driver

Some versions of the MySQL ODBC driver may not work out-of-the-box and produce ODBC errors that include the following message:

Incorrect arguments to mysql_stmt_execute.

In this case, you will need to enable the "Prepare statements on the client" option in the DSN configuration. You will find that option under Details, Misc, Prepare statements on the client when adding or configuring a DSN. This behavior has been observed with MySQL ODBC driver version 8.0.23, but other versions may also be affected.