

# **RTI Database Integration Service**

**Release Notes**

**Version 6.0.0**



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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 Microsoft® SQL Server™, MySQL™, and PostgreSQL®. You must have at least one of these installed; use the version shown in the tables below.

**Note:** Requires Microsoft Visual C++ 2010 Redistributable Package on computers that do not have Visual C++ 2010 installed. The Redistribution Package can be obtained from the following Microsoft websites:

- For x86 architectures: <http://www.microsoft.com/download/en/details.aspx?id=5555>
- For x64 architectures: <http://www.microsoft.com/download/en/details.aspx?id=14632>

**Table 1.1 Supported Linux Platforms**

| Operating System                                | CPU | PostgreSQL <sup>1</sup> | MySQL <sup>2</sup> |
|---|-----|-------------------------|--------------------|
| CentOS™ 6.0, 6.2-6.4                            | x86 |                         | YES                |
|   | x64 | YES                     | YES                |
| Red Hat® Enterprise Linux® 6.0-6.5, 6.7, 6.8    | x86 |                         | YES                |
|   | x64 | YES                     | YES                |
| SUSE® Linux Enterprise Server 11 (SP2, SP3), 12 | x64 | YES <sup>3</sup>        |                    |

<sup>1</sup>See [1.1 ODBC Driver Requirements on the next page](#).

<sup>2</sup>Tested with MySQL 5.5.

<sup>3</sup>Tested with Postgre SQL 9.5.2+ on SUSE 11 SP3 systems with x64 CPUs. Only subscriptions are supported.

**Table 1.2 Supported Windows Platforms**

| Windows and Visual Studio Version                  | CPU | SQL Server <sup>1</sup> | MySQL <sup>2</sup> |
|--|-----|-------------------------|--------------------|
| Windows® 7 with Visual Studio® 2010 SP1            | x86 | YES                     |                    |
|  | x64 | YES                     |                    |
| Windows 8 with Visual Studio 2012                  | x86 | YES                     |                    |
|  | x64 | YES                     |                    |
| Windows 10 with Visual Studio 2015                 | x64 |                         | YES                |
| Windows 10 with Visual Studio 2017                 | x64 |                         | YES                |
| Windows Server 2008 R2 with Visual Studio 2010 SP1 | x64 | YES                     |                    |
| Windows Server 2012 R2 with Visual Studio 2012     | x64 | YES                     |                    |
| Windows Server 2012 R2 with Visual Studio 2015     | x64 |                         | YES                |
| Windows Server 2016 with Visual Studio 2015        | x64 |                         | YES                |
| Windows Server 2016 with Visual Studio 2017        | x64 |                         | YES                |

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

The *Database Integration Service-to-MySQL* daemon requires the separate installation of the MySQL ODBC 5.1.6 (or higher) driver. For non-Windows platforms, the installation of UNIXODBC 2.2.12 (or higher) is also required. See [ODBC Driver Compatibility on page 1](#).

For non-Windows platforms, UNIX-ODBC 2.2.12 (or higher) must also be installed. See [ODBC Driver Compatibility on page 1](#).

- PostgreSQL

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<sup>1</sup>Tested with SQL Server 2012 SP3.

<sup>2</sup>Tested with MySQL 5.5 on Windows 7 only.

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 6.0.0 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 Connex DDS

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

*Database Integration Service* 6.0.0 is compatible with *Connex DDS* 6.0.0 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 Connex DDS Core Libraries Release Notes* for 5.3.1.



# Chapter 3 What's New in 6.0.0

## 3.1 New Platforms

- CentOS 6.0, 6.2-6.4
- Red Hat Enterprise Linux 6.0-6.5, 6.7, 6.8
- SUSE Linux Enterprise Server 12

## 3.2 Removed Platforms and Databases

The following platforms are no longer supported (for any database):

- CentOS 5.x
- Red Hat Enterprise Linux 5.x
- Ubuntu 12.04 LTS

The following platforms are no longer supported *when using MySQL<sup>a</sup>*:

- Windows 7 with Visual Studio 2010
- Windows 8 with Visual Studio 2012 or Visual Studio 2013
- Windows Server 2008 R2 with Visual Studio 2010
- Windows Server 2012 R2 with Visual Studio 2012 or Visual Studio 2013

These databases are no longer supported:

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<sup>a</sup>These platforms can be used with other databases, see [Table 1.2 Supported Windows Platforms](#)

- Oracle TimesTen
- Oracle Database

### **3.3 MySQL Version**

This release is compatible with MySQL 5.5 (instead of 5.1).

### **3.4 Storage of Mutable Types**

This release adds support for storing samples with mutable extensibility. Subscription to mutable types is only supported in tables with `table_schema` equal to `JSON` or `JSONB`.

This feature is only supported when using the MySQL and PostgreSQL databases.

# Chapter 4 Known Issues

## 4.1 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*.

## 4.2 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_SUBSCRIPTIONS` 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.

## 4.3 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.

## 4.4 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.

## 4.5 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 '\$'.

## 4.6 Applications with Disabled Inline-Keyhash

If the *Connxt 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.

## 4.7 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**.

## 4.8 Type Code Limitation for SQL Server

The maximum type-code length that can be stored in SQL Server is 8,000 bytes.

[RTI Issue ID RTC-187]

## 4.9 No Support for NCHAR Type for SQL Server

This release does not support the NCHAR type for use with SQL Server.

[RTI Issue ID RTC-189]

## 4.10 Change Tracking Retention Period for SQL Server not Configurable

Monitoring a SQL Server database table for changes and publishing them to a DDS Topic depends on the Change Tracking facility in SQL Server. The retention period is fixed at two days, with automatic cleanup

enabled.

[RTI Issue ID RTC-172]

### **4.11 Publishing Database Changes for a Table Cannot be Re-enabled for SQL Server**

If a table is added to the publications in a SQL Server database so that changes to the table are published by the *Database Integration Service* daemon and it is subsequently removed, that table may not be added back to the publications unless the *Database Integration Service* daemon is restarted. Otherwise, *Database Integration Service* will silently fail to publish changes to that table.

[RTI Issue ID RTC-190]

### **4.12 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 Connexx DDS Core Libraries User's Manual* (Section 8.5.7, `TRANSPORT_BUILTIN` QosPolicy).

[RTI Issue ID RTC-198]

### **4.13 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]

### **4.14 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]

### **4.15 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:

```
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:

```
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.

```
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:

```
drop database <dbname>;
create database <dbname>;
```

[RTI Issue ID RTC-141]