RTI Persistence Service

Release Notes

Version 6.0.0
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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/).

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1 Supported Platforms

**RTI® Persistence Service** is included with **RTI Connext® DDS**. If you choose to use it, it must be installed on top of **Connext DDS** with the same version number.

**Persistence Service** is supported on the platforms listed in **Table 1.1 Supported Platforms**. No custom platforms are supported.

**Table 1.1 Supported Platforms**

<table>
<thead>
<tr>
<th>Platforms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIX®</td>
<td>AIX 7.1 platform on POWER7® CPU with XLC/C++ 12.1 (architecture 64p7AIX7.1xlc12.1). Tested with filesystem only in PERSISTENT mode. No external database support.</td>
</tr>
<tr>
<td>INTEGRITY®</td>
<td>INTEGRITY 10.0.2 on x86 CPU with multi 5.0.6 (architecture pentiumInty10.0.2.pcx86). Supports Transient Durability Mode only. Available as a static library, not an executable.</td>
</tr>
<tr>
<td>Linux®</td>
<td>All Linux platforms on x86/x64 CPUs listed in the <strong>RTI Connext DDS Core Libraries Release Notes</strong> for the same version number, except not supported on Wind River® Linux, or Linux on ARM® CPUs. On Ubuntu® 12.04 LTS, tested in PERSISTENT mode with filesystem and MySQL 5.5. On other platforms, tested with filesystem only in PERSISTENT mode.</td>
</tr>
<tr>
<td>OS® X</td>
<td>All OS X platforms listed in the <strong>RTI Connext DDS Core Libraries Release Notes</strong> for the same version number. Tested with filesystem only in PERSISTENT mode. No external database support.</td>
</tr>
<tr>
<td>Solaris™</td>
<td>All Solaris platforms listed in the <strong>RTI Connext DDS Core Libraries Release Notes</strong> for the same version number. Tested with filesystem only in PERSISTENT mode. Note: Solaris platforms are only available by request.</td>
</tr>
<tr>
<td>Windows®</td>
<td>All Windows platforms listed in the <strong>RTI Connext DDS Core Libraries Release Notes</strong> for the same version number. Tested in PERSISTENT mode with filesystem and MySQL 5.5 on Windows 7 and Windows Server 2008 platforms. Tested in PERSISTENT mode with a filesystem on all other supported Windows platforms.</td>
</tr>
</tbody>
</table>
2 Compatibility

When Persistence Service is configured in PERSISTENT mode, you may choose between storing the topic data in files or in an external relational database.

The only supported external database is MySQL. For information on the specific version supported, see the RTI Connext DDS Core Libraries Getting Started Guide Addendum for Database Setup.

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 What's New in 6.0.0

2.1 Support for heap memory allocation monitoring in filesystem operations

*Persistence Service* now supports monitoring of heap memory usage in all functionality related to `<filesystem>` storage.
3 What's Fixed in 6.0.0

3.1 Persistence Service created as many Subscribers/Publishers as topics

_Persistence Service_ was always creating as many Subscribers/Publishers as topics. The `<single_subscriber>` and `<single_publisher>` tags were ignored. This problem has been resolved:

- If `<single_subscriber>` or `<single_publisher>` is set to FALSE, _Persistence Service_ will create as many Subscribers/Publishers as topics.
- If `<single_subscriber>` or `<single_publisher>` is set to TRUE or is absent, _Persistence Service_ will share the same Publisher/Subscriber for all the topics within the same persistence group (default behavior).

For more information, refer to section "30.8.3 Sharing a Publisher/Subscriber" in the _RTI Connext DDS Core Libraries User's Manual._

[RTI Issue ID PERSISTENCE-166]

3.2 Persistence Service remained locked after ungraceful termination

In 5.3.0, a feature was introduced that prevents multiple _Persistence Service_ instances from using the same database at the same time. This feature consists of a database locking mechanism, which prevents a _Persistence Service_ instance from connecting to a database if the database is already in use by another instance.

In 5.3.0, if _Persistence Service_ finished ungracefully, the database remained locked and required manual intervention to unlock the database.

Starting in 6.0.0, the following changes are introduced to make this feature more friendly in the ungraceful termination scenario:
3.3 Unbounded memory growth when <allow_durable_subscriptions> set to TRUE and DataReaders with role name set were created/destroyed continuously

There may have been an unbounded memory growth in Persistence Service when:

- <allow_durable_subscriptions> was set to true in a Persistence Group. true is the default value.
- You created/deleted PERSISTENT or TRANSIENT DataReaders where reader_qos.subscription_name.role_name was set to a value other than NULL.

This problem has been fixed.

3.4 instance_replacement not applied correctly for PERSISTENT topic groups

If you set <max_instances> to a finite value in a PERSISTENT DataWriter, <instance_replacement> may not have been applied correctly. That is, when <max_instances> was exceeded, the DataWriter may have replaced an instance that did not meet the replacement criteria defined in <instance_replacement>.

For example, if you set instance replacement to be DDS_DISPOSED_INSTANCE_REPLACEMENT, when <max_instances> was exceeded the DataWriter may have chosen for replacement an instance or multiple instances that were not in the DISPOSED state.

This problem has been resolved.
4 Optional Database Components

When Persistence Service is used in PERSISTENT mode, you can configure it to store DDS samples into a relational database, such as MySQL.

*In principle, you can use any database that provides an ODBC driver,* since ODBC is a standard. However, not all ODBC databases support the same feature set. Therefore, there is no guarantee that the persistent durability features will work with an arbitrary ODBC driver.

RTI has tested Persistence Service with MySQL 5.5 with MySQL ODBC 5.1.6.

The usage of MySQL 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.

- To use MYSQL, you will need:
  - MySQL 5.5 or higher (download from [http://www.mysql.com](http://www.mysql.com)
  - MySQL ODBC 5.1.6 driver or higher (download from [http://dev.mysql.com/downloads/connector/odbc](http://dev.mysql.com/downloads/connector/odbc))
  - UnixODBC 2.2.12 or higher (download from [http://www.unixodbc.org](http://www.unixodbc.org))

The Durable Writer History and Durable Reader State features in Connext DDS also use a relational database. Therefore, the installation instructions for MySQL are provided in the *RTI Core Libraries Getting Started Guide Addendum for Database Setup.*

If you need help with the download or installation process, contact [support@rti.com](mailto:support@rti.com).
5 Known Issues

5.1 Coherent Changes not Propagated as Coherent Set

*Persistence Service* will propagate the samples inside a coherent change. However, it will propagate these samples individually, not as a coherent set.

5.2 BLOBs not Supported by OBDC Storage

The ODBC storage does not support BLOBs. The maximum size for a serialized sample is 65535 bytes in MySQL.

5.3 TopicQueries not Supported in PERSISTENT Mode

Getting TopicQuery data from a *Persistence Service* instance configured to store data on disk is not currently supported.

**Note:** Getting TopicQuery data from a *Persistence Service* instance running in TRANSIENT (storing data in memory) mode is supported.

[RTI Issue ID PERSISTENCE-143]
6 Available Documentation

The following documentation is provided with the Persistence Service distribution. (The paths show where the files are located after Persistence Service has been installed in <NDDSHOME>):

- General information, configuration, use cases, and execution of Persistence Service: RTI Connext DDS Core Libraries User's Manual

- Example code

By default, the Persistence Service examples are copied here:

- Mac OS X systems:

  /Users/your user name/rti_workspace/version/examples/persistence_service/<language>/hello_world_persistence

- UNIX-based systems:

  /home/your user name/rti_workspace/version/examples/persistence_service/<language>/hello_world_persistence

- Windows systems:

  <your home directory>\rti_workspace\version\examples\persistence_service\<language>\hello_world_persistence

- Overview of persistence and durability features:

Open <NDDSHOME>/ReadMe.html, choose your desired API (C, C++, or Java), then select Modules, RTI Connext DDS API Reference, Durability and Persistence.