RTI Persistence Service

Release Notes

Version 7.0.0
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1 Supported Platforms

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

See the column for Persistence Service in the table of Supported Platforms for Compiler-Dependent Products, in the RTI Connext Core Libraries Release Notes.

RTI tests Persistence Service with a file-system only, using PERSISTENT mode.
2 Compatibility

For backward-compatibility information between this and previous releases, see the *Migration Guide* on the RTI Community Portal (https://community.rti.com/documentation).
3 What's New in 7.0.0

3.1 Support for External Databases is Discontinued

External databases are no longer supported by Persistence Service.

The Release Notes for 6.1.1 included a deprecation notice, in keeping with the Real-Time Innovations, Inc. Maintenance Policy #4220.

3.2 Default journal_mode and synchronization changed to WAL and NORMAL, respectively

In this release, the default values for the following configuration parameters have changed:

- `<journal_mode>` has changed from DELETE to WAL
- `<synchronization>` has changed from OFF to NORMAL

This change provides the best out-of-the-box performance without sacrificing database integrity in the event of a crash or power failure.

3.3 Third-Party Software Upgrade

The following third-party software used by Persistence Service has been upgraded:

<table>
<thead>
<tr>
<th>Third-Party Software</th>
<th>Previous Version</th>
<th>Current Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQLite®</td>
<td>3.37.2</td>
<td>3.39.0</td>
</tr>
</tbody>
</table>

For information on third-party software used by Connext products, see the "3rdPartySoftware" documents in your installation: `<NDDSHOME>/doc/manuals/connext_dds_professional/release_notes_3rdparty`.
4 What's Fixed in 7.0.0

4.1 Schema Files not Compliant with DDS-XML Specification

The following change has been made to the schema file rti_persistence_service.xsd, and its included files, to make them compliant with the DDS-XML specification (https://www.omg.org/spec/DDS-XML/1.0/PDF):

- Renamed <participant_qos> to <domain_participant_qos>

The old tag is still accepted by the Connext XML parser and the XSD schema to maintain backward compatibility.

[RTI Issue ID PERSISTENCE-213]

4.2 Samples Published Out of Order from Same Virtual GUID were Dropped

If Persistence Service received samples for a given virtual GUID with sequence numbers out of order, Persistence Service dropped samples with sequence numbers lower than the highest received sequence number. This issue has been resolved.

[RTI Issue ID PERSISTENCE-250]

4.3 Fatal Error when Persisting Unkeyed Topics upon Restore or IP Mobility Event

Persistence Service generated the following fatal error and shut down when persisting unkeyed Topics if all of the following conditions were met:

- <use_durability_service> was set to true in the <persistence_group> OR <writer_qos>/<writer_data_lifecycle>/<autopurge_disposed_instances_delay> was set to zero in
4.3 Fatal Error when Persisting Unkeyed Topics upon Restore or IP Mobility Event

- The `<persistence_group>`
  - `<writer_in_memory_state>` was set to false in the `<persistence_group>`.
  - There was an IP mobility event (for instance, an interface went down) or *Persistence Service* was started with the `-restore` command-line option set to true.

The error backtrace was as follows:

```plaintext
#4  WriterHistoryOdbcPlugin_logAndCheckODBCError ???: [0x31590B]
#5  WriterHistoryOdbcPlugin_handleODBCError ???: [0x315CE5]
#6  WriterHistoryOdbcPlugin_beginDisposedExceptionInstanceIteration ???: [0x34B202]
```

This problem has been resolved.

[RTI Issue ID PERSISTENCE-255]
5 Known Issues

Note: For an updated list of critical known issues, see the Critical Issues List on the RTI Customer Portal at https://support.rti.com.

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 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]

5.3 <comm_ports> not Supported when Using Real-Time WAN Transport

Persistence Service can use the RTI Real-Time WAN Transport. However, the port configuration using <comm_ports> or the property dds.transport.UDPv4_WAN.builtin.comm_ports is not currently supported by Persistence Service.

[RTI Issue ID PERSISTENCE-206]
5.4 Persistence Service DataReaders Ignore Serialized Key Propagated with Dispose Updates

Persistence Service DataReaders ignore the serialized key propagated with dispose updates. Persistence Service DataWriters cannot propagate the serialized key with dispose, and therefore ignore the serialize_key_with_dispose setting on the DataWriter QoS.

[RTI Issue ID PERSISTENCE-221]
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 Core Libraries User's Manual

- Example code

  By default, the Persistence Service examples are copied here:
  
  - macOS systems:
    
    /Users/your user name/rti_workspace/version/examples/persistence_service/<language>/hello_world_persistence
  
  - Linux systems:
    
    /home/your user name/rti_workspace/version/examples/persistence_service/<language>/hello_world_persistence
  
  - Windows systems:
    
    <your home directory>ti_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 API Reference, Durability and Persistence.