RTI DDS Toolkit

Release Notes

Version 2.2.0

![rti logo] Your systems. Working as one.

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Release Notes

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1   Supported Platforms

RTI® DDS Toolkit is supported on these platforms:

- Windows® Systems:
    - Windows 7 SP1 (32-bit and 64-bit)
    - Windows 8.1 (32-bit and 64-bit)
    - Windows 10 (32-bit and 64-bit)
    - Windows Server 2008 R2 SP1 (64-bit)
    - Windows Server 2012 R2 (64-bit)

    On 64-bit platforms, it runs in 32-bit mode.

- Real-Time Targets:
    - NI™ Linux® 3 on ARMv7 CPU (tested on cRIO-9068 target)
    - NI Linux 3 on 64-bit Intel CPU (tested on cRIO-9031 target)

You will also need:

- National Instruments® LabVIEW® 2015 SP1 or later (32-bit)
- JKI VI Package Manager 2014 or later

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2   Compatibility

2.1   Incompatible with Older Versions of Connext DDS using UDPv6 and Shared Memory

RTI Connext® DDS 5.1.0 and earlier releases used a UDPv6 locator kind that was not compliant with the value in the RTPS specification. The value used in *Connext DDS* 5.1.0 was 5 while the RTPS specification specifies a value of 2. Because of this issue, *Connext DDS* could not interoperate with other DDS vendors over UDPv6.

This problem is resolved starting with 5.2.0. Note, however, that out-the-box backward compatibility with *Connext DDS* 5.1.0 and lower, when using both the UDPv6 and SHMEM transports, is broken.

See the *RTI Connext DDS Core Libraries Release Notes*' section on Transport Compatibility for information on how to resolve this compatibility issue.

2.2   **Incompatible with Older Versions of Connext DDS**

In *Connext DDS* 5.1.0, the default **message_size_max** for the UDPv4, UDPv6, TCP, Secure WAN, and shared-memory transports changed to provide better out-of-the-box performance. *RTI DDS Toolkit* 1.1.0 and higher also uses the new default value for **message_size_max**. Consequently, *RTI DDS Toolkit* 1.1.0 and higher is not out-of-the-box compatible with applications running older versions of *Connext DDS* or *RTI Data Distribution Servic*e.

See the *RTI Connext DDS Core Libraries Release Notes*' section on Transport Compatibility for instructions on how to resolve this compatibility issue.

2.3   **Potential Incompatibility when Regenerating Complex Data Types that were Originally Created in 2.0.0.104**

The 'complexType' input of the previous *Write* subVI has been changed from the 2nd left pin to the 3rd one. This doesn't affect the functionality if the *Write* subVI is not regenerated (because it is saved and used as it was originally generated). However if you regenerate the type, the VIs that were using it will no longer be able to use it until the wire is reconnected to the correct pin.
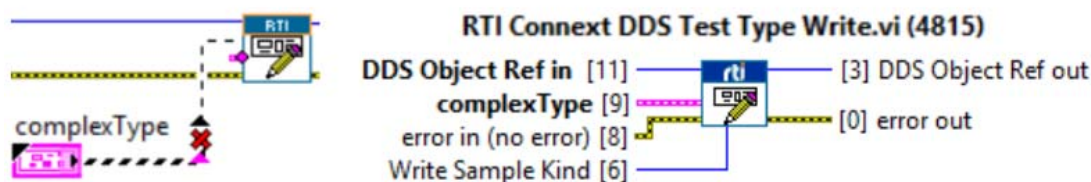
2.4   **Additional Steps when Upgrading from a Release Older than 1.2.0.90**

If you are upgrading from a release older than 1.2.0.90, there are important steps you must take. Briefly, changes are required because:

- The *Create Reader/Writer* subVIs have been deprecated. We strongly recommend that you upgrade the VIs to use the *Simple Create Reader/Writer* or *Advanced Create Reader/Writer*.
- The *RTI DDS Toolkit* library name changed from **lvdds.1.0.dll** to **rtilvdds.dll**.

See Sections 1.5 and 1.5.1 in the *Getting Started Guide* for details.

2.5   **Additional Steps when Upgrading from a Release Older than 1.3.0.91**

If you are upgrading from a release older than 1.3.0.91, there are important steps you must take. Briefly, changes are required because:

- The DDS Write/Read Object Reference has been removed for all our VIs.
- The configuration of several Call Library Function Nodes has been modified and they no longer receive a reference as a parameter.

See Sections 1.5 and 1.5.2 in the *Getting Started Guide* for details.

2.6   **Required: VI Package Manager Version 2014**

The *RTI DDS Toolkit* requires VI Package Manager (VIPM) to be installed. Due to a limitation in VIPM, version 2014 of VIPM is required. For details visit JKI website: http://support.jki.net/entries/66745297-VIPM-2013-cannot-install-packages-built-in-VIPM-2014.

2.7   **Toolkit Uses String Length of 1024**

In *RTI DDS Toolkit,* the default string length is 1024 characters. This may create incompatibilities with other DDS data types in your system that use string lengths != 1024. See Section 6.2 in the *Getting Started Guide* to learn how to change the string length. (RTI Issue ID LABPLG-565)

2.8   Improved Performance when Managing Large Data

We have improved the performance when managing large data by setting these properties. (Note: they cannot be changed from the QoS XML file):

- Dynamic data:

    - **serialization.trim_to_size** = DDS_BOOLEAN_TRUE

    - **serialization.max_size_serialized** = DDS_LENGTH_UNLIMITED

    - **serialization.min_size_serialized** = TypeCode's minimum serialized size

- Data Writer:

    - **dds.data_writer.history.memory_manager.fast_pool.pool_buffer_max_size** = 1024

- Data Reader:

    - **dds.data_reader.history.memory_manager.fast_pool.pool_buffer_max_size** = 1024

3   What's New in 2.2.0

3.1   Updates to RTI DDS Toolkit Icons

The icons of the *RTI DDS Toolkit* have been updated to a newer template.

3.2   Making the RTI DDS Toolkit More Usable

The following enhancements have been made:

- Examples in the *RTI DDS Toolkit* now have icons.

- The *RTI DDS Toolkit* package description shows that administrator privileges are needed to install it.

- The package description also shows which RT Targets are supported.

3.3   Grayed-out ContentFiltered Topic Info Cluster when not Modifiable in ContentFilteredTopic Example

Since you cannot modify a Content Filtered Topic at runtime, *RTI DDS Toolkit* now disables and grays out the 'ContentFilteredTopic Info' cluster in the 'RTI Connext DDS Content Filtered Topic Reader.vi' example. The disabling is done after the creation of the DataReader. It is enabled again when the execution of the Content Filtered Topic finishes (via the Stop button).

4   What's Fixed in 2.2.0

4.1   LabVIEW Applications did not Load Publisher/Subscriber QoS

In version 1.5.0.95 and higher, *RTI DDS Toolkit* did not load any settings from the publisher_qos and subscriber_qos tags. This problem has been resolved.

[RTI Issue ID LABPLG-565]

4.2   Error When Creating Multidimensional Arrays

Previously, creating multidimensional arrays caused an error; therefore only one-dimensional arrays could be created. This problem has been resolved: multidimensional arrays can now be created.

[RTI Issue ID LABPLG-635]

4.3 Error When Creating Simple INT8 and UINT8 Types

Previously, INT8 and UINT8 simple types could not be used at the same time because they were using the same TypeName (DDS::Octets). This issue has been resolved: the TypeName of INT8 has been changed to "DDS_Tiny".

[RTI Issue ID LABPLG-637]

4.4 LabVIEW Hung when Using 'Set Reader/Writer QoS' subVI with a Custom Security Profile

If you tried to use a Custom Security Profile as the input parameter for the 'Set Reader/Writer Qos' subVI, LabVIEW hung. This issue has been resolved: now you can use a Custom Security Profile as the input parameter for the 'Set Reader/Writer Qos' subVI. These subVIs modify only the DataReader/DataWriter QoS; the DomainPartcipant QoS Profile remains the same.

[RTI Issue ID LABPLG-700]

4.5 Default Value of Distributed Logger Queue Size was 0 in "Enable Distributed Logger.vi"

By default, the "Distributed Logger Queue Size" in the "Configure Distributed Logger.vi" was 0. This may have caused an error enabling Distributed Logger if the size was not set (it is an optional parameter). This issue has been resolved: the default size is now 512.

[RTI Issue ID LABPLG-723]

4.6 Potential Crash on Unkeyed DataReaders when Using Query Conditions and KEEP_LAST HistoryQosPolicy

Using QueryConditions for a Reader could have triggered a crash upon receiving a sample.This issue affected only unkeyed Readers using the KEEP_LAST HistoryQosPolicy (the default QoS). This problem is now resolved.

[RTI Issue ID CORE-8372]

5 Known Issues

5.1 Monitoring Library cannot be Used as DomainParticipant's Base Profile when Creating Custom Secure Profile

When creating a DomainParticipant from a Custom Secure Profile, non-secure Monitoring cannot be enabled for that DomainParticipant. If this situation occurs, the toolkit will throw error 5080, which means that the DomainParticipant cannot be created.

[RTI Issue ID LABPLG-474]

5.2 No Data Received if Publisher/Subscriber Presentation/Access Scope QoS is set to TOPIC_PRESENTATION

If you set the following QoS in the Publisher/Subscriber QoS, Readers won't be able to read data:

```
<subscriber_qos>
    <presentation>
        <access_scope>TOPIC_PRESENTATION_QOS</access_scope>
        <ordered_access>true</ordered_access>
    </presentation>
</subscriber_qos>
```

[RTI Issue ID LABPLG-567]

6   Additional Documentation

RTI DDS Toolkit uses *RTI Connext DDS* for communication. For details on *RTI Connext DDS* and the Quality of Service (QoS) settings, visit http://community.rti.com/documentation.