

RTI DDS Toolkit for LabVIEW

Release Notes

Version 1.3.0



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Release Notes

1 Supported Platforms

RTI® DDS Toolkit for LabVIEW™ 1.3.0 is supported on these platforms:

- Windows® 7 (32-bit and 64-bit)
- Windows 2003 (32-bit and 64-bit)
- Windows Server 2008 R2 (64-bit)
- Windows Vista® (32-bit and 64-bit)
- Windows XP Professional SP2 (32-bit and 64-bit)

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

Custom support is also available for the following platform by request (contact lab-view@rti.com):

- NI Linux 3 on ARMv7 CPU

You will also need:

- National Instruments® LabVIEW 2012-2014 (32-bit)
- JKI VI Package Manager 2014 or later

2 Compatibility



- Incompatibility with Older Versions of *Connex* DDS using UDPv6 and Shared Memory

RTI *Connex*™ 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 *Connex* DDS 5.1.0 was 5 while the RTPS specification specifies a value of 2. Because of this issue, *Connex* 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 *Connex* DDS 5.1.0 and lower, when using both the UDPv6 and SHMEM transports is broken.

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



❑ Incompatibility with Older Versions of *Connex* DDS

In *Connex* DDS 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 Toolkit for LabVIEW* 1.1.0 and higher also uses the new default value for **message_size_max**. Consequently, *RTI Toolkit for LabVIEW* 1.1.0 and higher is not out-of-the-box compatible with applications running older versions of *Connex* DDS or *RTI Data Distribution Service*.

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

❑ Toolkit Uses String Length of 1024

In *RTI DDS Toolkit for LabVIEW*, the default string length is 1024 characters. This may create incompatibilities with other DDS data types in your system that use string lengths != 1024. If you are sure your types are compatible, use the new QoS profile, **LabVIEWLibrary::NoTypeCodeProfile**.

❑ 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

❑ Additional Steps when Upgrading from 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:

- a. 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*.
- b. The *RTI DDS Toolkit for LabVIEW* library name changed from **lvdds.1.0.dll** to **rti-vdds.dll**.

See Section 1.5.1 in the *Getting Started Guide* for details.

❑ Required VI Package Manager version 2014

The *RTI DDS Toolkit for LabVIEW* 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>

3 What's New in 1.3.0

3.1 New Platforms

This release supports LabVIEW 2014-2014.

3.2 Removed Platforms

LabVIEW 2010 and 2011 are no longer supported. If you need support for older versions, contact labview@rti.com.

3.3 New VI Package For cRIO Support Files

A new VI package (.vip) containing the cRIO-9068 support files is now available. This package can be found in the NI Tools Network or by contacting sales@rti.com. It contains all the files needed to install *RTI DDS Toolkit for LabVIEW* on a cRIO-9068 board.

4 What's Fixed in 1.3.0

4.1 Removed Fixed Bound when Using Strings

In previous releases, string length was limited to 1024 characters. From this release and on, strings can be created as unbounded, removing this limitation. By default, strings will be created with a bound of 1024 characters. To force unbounded strings, you will need to set a new flag in Advanced Reader/Writer Configuration controls. The maximum number of characters to send when this flag is set is RTI_INT32_MAX (2147483647). The following DomainParticipant QoS property has been enabled to allow compatibility with bounded strings: **dds.type_consistency.ignore_sequence_bounds**. Set that property in any external DataReaders communicating with the RTI DDS Toolkit for LabVIEW if you use unbounded strings.

[RTI Issue ID LABPLG-210]

4.2 RTI_LABVIEW_CONFIG.xml no longer Required

RTI DDS Toolkit for LabVIEW used to provide an XML file with all the default QoS profiles used by the examples. That file was required for the toolkit to work. This limitation has been removed. Now the default QoS profiles are defined internally in the code, so RTI_LABVIEW_CONFIG.xml is no longer required.

A new file, **RTI_LABVIEW_CONFIG.documentationONLY.xml**, is provided for documentation purposes only. Any changes in this file will not be loaded by *RTI DDS Toolkit for LabVIEW*.

[RTI Issue ID LABPLG-249]

4.3 Transport Compatibility over UDPv6

Connex 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 *Connex DDS* 5.1.0 was 5 while the RTPS specification specifies a value of 2. Because of this issue, *Connex DDS* could not interoperate with other DDS vendors over UDPv6. This problem has been resolved. Notice that by doing this, out-the-box backward compatibility with previous releases using both the UDPv6 and SHMEM transports is broken. See the *RTI Connex DDS Core Libraries Release Notes'* section on Transport Compatibility for more information.

[RTI Issue ID LABPLG-261]

4.4 Samples not Read if Wrong KeyName Provided

When creating a new Reader node for an unkeyed type, you could provide a nonexistent key name. In this situation, the DDS data type was created as unkeyed, but internally, new samples were treated as instances. This could have made your Reader starve after the first data was read. This problem has been resolved.

[RTI Issue ID LABPLG-289]

4.5 Possible Segmentation Fault while Loading

You may have seen LabVIEW hang after calling the *RTI DDS Toolkit for LabVIEW*. This may have been caused by a race condition when loading `rtilvdds.dll`. This problem has been resolved.

[RTI Issue ID LABPLG-298]

4.6 Memory Leak When Using Sequences

When using sequences, the *RTI DDS Toolkit for LabVIEW* Reader may not have properly freed all sequence resources, resulting in a memory leak. This only affected version 1.2.0.90. This problem has been resolved.

[RTI Issue ID LABPLG-300]

4.7 Error 5001 when Re-Running 'Read' subVI

You may have seen error 5001 when running your Reader application for the second time, or when sharing Readers. This problem has been resolved.

[RTI Issue ID LABPLG-305]

4.8 Create Writer SubVIs Showed Wrong Output Name

The Advanced and Simple Create subVIs showed as output "dds reader object ref". This was incorrect and has been resolved.

[RTI Issue ID LABPLG-306]

5 Known Issues

5.1 Reader/Writer Create SubVIs Fail if QoS Settings not Provided

When creating a new Reader or Writer, QoS settings are optional. However, if there are no QoS settings when working on a cRIO-9068 system, you may encounter error 5052 ("XML Configuration File not found").

A workaround is to add an empty string to the `qos_profile` pin.

[RTI Issue ID LABPLG-240]

6 Additional Documentation

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