

RTI Data Distribution Service

The Real-Time Publish-Subscribe Middleware

What's New in Version 4.5d



The Global Leader in DDS



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Technical Support

Real-Time Innovations, Inc.
385 Moffett Park Drive
Sunnyvale, CA 94089
Phone: (408) 990-7444
Email: support@rti.com
Website: <https://support.rti.com/>

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What's New

This document highlights new or changed features in *RTI® Data Distribution Service 4.5d*. (For details on fixed bugs, please see the *Release Notes*.)

For more information, visit the RTI Knowledge Base, accessible from <http://www.rti.com/support>, to see sample code, general information on *RTI Data Distribution Service*, performance information, troubleshooting tips, and technical details. By its very nature, the knowledge base is continuously evolving and improving. We hope that you will find it helpful. If there are questions that you would like to see addressed or comments you would like to share, please send e-mail to support@rti.com. We can only guarantee a response to customers with a current maintenance contract or subscription. You can purchase a maintenance contract or subscription by contacting your local RTI representative (see <http://www.rti.com/company/contact.html>), sending an e-mail request to sales@rti.com, or calling +1 (408) 990-7400.

1 New Architectures

Support for .Net 4.0 Libraries

This release adds support for .Net 4.0 libraries (32-bit and 64-bit) for use with Visual Studio 2010. The library name for .Net 4.0 is `nddsdotnet40.dll`. Example templates generated with `rtiddsgen` using the architecture `i86Win32dotnet4.0` or `x64Win64dotnet4.0` will use the .Net 4.0 libraries. See the *Platform Notes* for details.

Support for CentOS 5.4 and 5.5 Systems

This release adds support for CentOS 5.4 and 5.5 systems (32- and 64-bit). The architecture strings are `i86Linux2.6gcc4.1.2`, `x64Linux2.6gcc4.1.2`, `i86Linux2.6gcc4.1.2jdk`, and `x64Linux2.6gcc4.1.2jdk`. See the *Platform Notes* for details.

❑ Support for Red Hat Linux 5.2 with Real-Time Extensions

This release adds support for Red Hat Enterprise Linux 5.2 with Real-Time Extensions on 32-bit systems. The architecture strings are `i86Linux2.6gcc4.1.2` and `i86Linux2.6gcc4.1.2jdk`. See the *Platform Notes* for details.

❑ Support for VxWorks 6.7 with RTP and SMP

This release adds support for VxWorks 6.7 real-time processes (RTP) on a symmetric multi-processor system (SMP). The architecture string is `ppc604Vx6.7gcc4.1.2_smp`. See the *Platform Notes* for details.

While the previous release did support VxWorks 6.7 RTP, it did not work correctly on SMP systems. This new target architecture distribution is specifically for VxWorks 6.7 with RTP and SMP.

To use this architecture, the VxWorks kernel must be compiled with an additional non-default module named "`__thread variables support`" under Operating System Components, Kernel Components. For details, please see Section 4.1 the *Getting Started Guide Addendum for Embedded Systems*.

2 New API to Clean Up Thread-Related Resources—`unregister_thread()`

The `DDSDomainParticipantFactory` class has a new API, `unregister_thread()`. This function frees thread-related resources. It is intended to be used at the end of any user-created threads that invoke DDS APIs (not all users will have this situation). The best approach is to call it immediately before exiting such a thread, after all DDS APIs have been called.

[RTI RFE # 420]

3 Limited Unicode Support in `rtiddsgen`

`rtiddsgen` can now parse IDL files containing non-ASCII Unicode characters in comments. Encoding schemas (such as UTF-16 or UTF-8) with Byte Order Marks (BOM) are not supported.

4 New *rtiddsgen* Directives for Java

There are two new directives for *rtiddsgen*:

- ❑ **copy-java-begin** can be used to copy a line of text at the beginning of all the Java files generated for a type. The directive only applies to the first type that is immediately below in the IDL file.
- ❑ **copy-java-declaration-begin** is like `copy-java-begin`, but only copies the text into the file where the type is declared.

5 Ability to Change *DataWriter* and *DataReader* Class Names Generated by *rtiddsgen*

There are two new command-line to change the name of the *DataReader* and *DataWriter* classes generated by *rtiddsgen*:

- ❑ **-dataReaderSuffix** assigns a suffix to the name of the *DataReader* interface
- ❑ **-dataWriterSuffix** assigns a suffix to the name of the *DataWriter* interface

[RTI RFE # 454]

6 Support for Periodic Heartbeats (HBs) over Multicast

There are two new properties to configure periodic heartbeats (HBs) over multicast. The use of these properties is a temporary solution that may change in future releases.

Periodic heartbeat messages are normally sent over unicast to each *DataReader* individually. If *DataReaders* are receiving user data over multicast, then periodic heartbeats may be configured to be sent over multicast to those *DataReaders* by enabling the new property, **dds.data_writer.protocol.send_multicast_periodic_heartbeats**:. The default for this property is 0 (off).

DataWriters resend user data over multicast when multiple *DataReaders* of the same multicast group need repairs around the same time. Normally, at least two *DataReaders* of the same multicast group must NACK around the same time in order for the samples to be resent over multicast. This threshold number of multicast *DataReaders* is now configurable via a property, **dds.data_writer.protocol.multicast_repair_threshold**. The

threshold may be decreased to 1, so that all repairs are sent over multicast if possible. The threshold may also be increased; because all *DataReaders* of a multicast group will receive the multicast repair, increasing the threshold ensures that a significant fraction of the group actually needs the repair before sending it. The default for this property is 2.

7 Topic Filters Can Now Include '/' Characters

The `topic_filter` attribute can now take a forward slash '/' as part of its name. (For details on topic filters, see Section 15.8.3 in the *User's Manual*.)

[RTI Bug # 13726]