RTI Message Service

Release Notes

Version 5.2.3

Your systems. Working as one.

Trademarks

Copy and Use Restrictions

Technical Support

Real-Time Innovations, Inc.
232 E. Java Drive
Sunnyvale, CA 94089

Phone:	(408) 990-7444
Email:	support@rti.com
Website:	https://support.rti.com/

Release Notes

This document includes the following sections:

- ❑ System Requirements (Section 1)
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- ❑ Platform-Specific Notes (Section 5)
- ❑ Known Issues (Section 6)

Many readers will also want to look at additional documentation available online. In particular, RTI recommends the following:

- ❑ Use the RTI Customer Portal (http://support.rti.com) to download RTI software, access documentation and contact RTI Support. The RTI Customer Portal requires a username and password. You will receive this in the email confirming your purchase. If you do not have this email, please contact **license@rti.com**. Resetting your login password can be done directly at the RTI Customer Portal.
- ❑ The RTI Community website (http://community.rti.com) provides a wealth of knowledge to help you use *RTI® Message Service*, including:
  - Best Practices
  - Example code for specific features, as well as more complete use-case examples,
  - Solutions to common questions,
  - A glossary,
  - Downloads of experimental software,
  - And more.
- ❑ Whitepapers and other articles are available from http://www.rti.com/resources.

1 System Requirements

1.1 Supported Operating Systems and Compilers

Table 1.1 and Table 1.2 describe the systems supported by *Message Service*; all platforms use Java Platform, Standard Edition JDK 1.7.

Table 1.1 **Supported Linux Platforms**

Operating System	CPU	Compiler	RTI Architecture Name
CentOS 5.4, 5.5	x86	gcc 4.1.2	i86Linux2.6gcc4.1.2
	x64	gcc 4.1.2	x64Linux2.6gcc4.1.2
CentOS 6.0, 6.2, 6.3, 6.4	x86	gcc 4.4.5	i86Linux2.6gcc4.4.5
	x64	gcc 4.4.5	x64Linux2.6gcc4.4.5
CentOS 7.0	x86	gcc 4.8.2	i86Linux3gcc4.8.2
	x64	gcc 4.8.2	x64Linux3gcc4.8.2
Red Hat® Enterprise Linux 5.0	x86	gcc 4.1.1	i86Linux2.6gcc4.1.1
	x64	gcc 4.1.1	x64Linux2.6gcc4.1.1
Red Hat Enterprise Linux 5.1, 5.2, 5.4, 5.5	x86	gcc 4.1.2	i86Linux2.6gcc4.1.2
	x64	gcc 4.1.2	x64Linux2.6gcc4.1.2
Red Hat Enterprise Linux 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6,7	x86	gcc 4.4.5	i86Linux2.6gcc4.4.5
	x64	gcc 4.4.5	x64Linux2.6gcc4.4.5
Red Hat Enterprise Linux 7	x86	gcc 4.8.2	i86Linux3gcc4.8.2
	x64	gcc 4.8.2	x64Linux3gcc4.8.2
Ubuntu® 12.04 LTS	x86	gcc 4.6.3	i86Linux3.xgcc4.6.3
	x64	gcc 4.6.3	x64Linux3.xgcc4.6.3
Ubuntu 14.04 LTS	x86	gcc 4.8.2	i86Linux3gcc4.8.2
	x64	gcc 4.8.2	x64Linux3gcc4.8.2

Table 1.2 **Supported Windows Platforms**

Operating System	CPU	Visual Studio Version	RTI Architecture Name
Windows 7	x86	VS 2010 SP1	i86Win32VS2010
	x64	VS 2010 SP1	x64Win64VS2010
Windows 8	x86	VS 2012 Update 4	i86Win32VS2012
		VS 2013 Update 4	i86Win32VS2013
	x64	VS 2012 Update 4	x64Win64VS2012
		VS 2013 Update 4	x64Win64VS2013
Windows 8.1	x86	VS 2013 Update 4	i86Win32VS2013
Windows 10	x86	VS 2015 Update 1	i86Win32VS2015
	x64	VS 2015 Update 1	x64Win64VS2015
Windows Server 2003	x86	VS 2008 SP1	i86Win32VS2008
	x64	VS 2008 SP1	x64Win64VS2008
Windows Server 2008 R2	x64	VS 2010 SP1	x64Win64VS2010
Windows Server 2012 R2	x64	VS 2012 Update 4	x64Win64VS2012
		VS 2013 Update 4	x64Win64VS2013
		VS 2015 Update 1	x64Win64VS2015
Windows Vista	x86	VS 2008 SP1	i86Win32VS2008
	x64	VS 2008 SP1	x64Win64VS2008
Windows XP Pro SP2 [1] [2]	x86	VS 2008 SP1	i86Win32VS2008
	x64	VS 2008 SP1	x64Win64VS2008

1. Windows XP: If you are using JDK 5.0 and want to use Intel's HyperThreading technology, use JDK 5.0 Update 6 (build 1.5.0_06), which includes fixes to JNI and HyperThreading. (If you must use Update 5 (build 1.5.0_05), you should disable HyperThreading.)
2. Windows XP does not support IP_TOS unless registry changes are made. See http://support.microsoft.com/kb/248611, http://www.microsoft.com/technet/technetmag/issues/2007/02/CableGuy/default.aspx.

1.2 Disk and Memory Usage

Disk usage for a typical installation is approximately 250 MB.

We recommend that you have at least 256 MB RAM installed on your host development system. The target requirements depend on the complexity of your application and hardware architecture.

1.3 Networking Support

Message Service includes full support for pluggable transports. *Message Service* applications can run over various communication media, such as UDP/IP over Ethernet, and local inter-process shared memory—provided the correct "transport plug-ins" for the media are installed.

By default, *Message Service* uses the UDP/IPv4 and shared-memory transport plug-ins. A built-in IPv6 transport is also available but is disabled by default.

1.4 Requirements when Using Microsoft Visual Studio

You must have the appropriate Visual Studio service pack or redistributable package installed on the machine where you are *running* an application linked with dynamic libraries.

1.4.1 When Using Visual Studio 2008 — Service Pack 1 Requirement

You must have Visual Studio 2008 Service Pack 1 installed on the machine where you are *running* an application linked with dynamic libraries.

The Microsoft Visual C++ 2008 SP1 Redistribution Package can be downloaded from the following Microsoft websites:

❑ For x86 architectures:

http://www.microsoft.com/downloads/details.aspx?familyid=A5C84275-3B97-4AB7-A40D-3802B2AF5FC2&displaylang=en

❑ For x64 architectures:

http://www.microsoft.com/downloads/details.aspx?FamilyID=ba9257ca-337f-4b40-8c14-157cfdffee4e&displaylang=en

1.4.2 When Using Visual Studio 2010 — Service Pack 1 Requirement

You must have Visual Studio 2010 Service Pack 1 installed on the machine where you are *running* an application linked with dynamic libraries.

To run an application built with debug libraries of the above RTI architecture package, you must have Visual Studio 2010 Service Pack 1 installed; you can download it from the Microsoft websites:

❑ For x86 architectures:

https://www.microsoft.com/en-us/download/details.aspx?id=8328

❑ For x64 architectures:

https://www.microsoft.com/en-us/download/details.aspx?id=13523

1.4.3 When Using Visual Studio 2012 — Update 4 Redistributable Package Requirement

You must have the Visual C++ Redistributable for Visual Studio 2012 Update 4 installed on the machine where you are *running* an application linked with dynamic libraries.

You can download it from this Microsoft website: http://www.microsoft.com/en-ca/download/details.aspx?id=30679.

1.4.4 When Using Visual Studio 2013 — Update 4 Redistributable Package Requirement

You must have Visual C++ Redistributable for Visual Studio 2013 Update 4 installed on the machine where you are *running* an application linked with dynamic libraries.

You can download it from this Microsoft website: https://www.microsoft.com/en-us/download/details.aspx?id=40784.

1.4.5 When Using Visual Studio 2015 — Update 1 Redistributable Package Requirement

You must have Visual C++ Redistributable for Visual Studio 2015 Update 1 installed on the machine where you are running an application linked with dynamic libraries. This includes C/C++ dynamically linked and all .NET and Java applications.

You can download Visual C++ Redistributable for Visual Studio 2015 Update 1 from this Microsoft website: https://www.microsoft.com/en-us/download/details.aspx?id=49984.

2 Compatibility

Starting in *RTI Connext™ DDS* 5.1.0, the default **message_size_max** for the UDPv4, UDPv6, TCP, Secure WAN, and shared-memory transports changed. *Message Service* also uses the new default value for **message_size_max**. Consequently, *Message Service* 5.1.0 and higher is not off-the-shelf compatible with applications running older versions of *Connext DDS* or *RTI Data Distribution Service*. Please see the *RTI Connext DDS Core Libraries Release Notes* for instructions on how to resolve the compatibility issue with older *Connext DDS* and *RTI Data Distribution Service* applications.

3 What's New in 5.2.3

RTI Message Service is based on *RTI Connext DDS*. Therefore all new features described in the *RTI Connext DDS Core Libraries Release Notes* (RTI_ConnextDDS_CoreLibraries_ReleaseNotes.pdf) for 5.2.3 also apply to *RTI Message Service*.

3.1 New Platforms

- CentOS 7.0
- Red Hat Enterprise Linux 6.7
- Windows 10

4 What's Fixed in 5.2.3

RTI Message Service is based on *RTI Connext DDS*. Therefore all changes described in the *RTI Connext DDS Core Libraries Release Notes* (RTI_ConnextDDS_CoreLibraries_ReleaseNotes.pdf) for 5.2.3 also apply to *RTI Message Service*.

5 Platform-Specific Notes

This section describes certain platform-specific tips and limitations of which you should be aware.

5.1 Linux Platforms

5.1.1 Shared Memory Support

Shared memory is supported on all Linux platforms. To see a list of shared memory resources in use, please use the '**ipcs**' command. To clean up shared memory and shared semaphore resources, please use the '**ipcrm**' command.

The shared memory keys used by *Message Service* are in the range of 0x400000. For example:

```
ipcs -m | grep 0x004
```

The shared semaphore keys used by *Message Service* are in the range of 0x800000; the shared mutex keys are in the range of 0xb00000. For example:

```
ipcs -s | grep 0x008
ipcs -s | grep 0x00b
```

Please refer to the shared-memory transport online documentation for details on the shared memory and semaphore keys used by *Message Service*.

5.1.2 Group Address Ignored for Multicast Receive on Loopback

On Linux architectures, the implementation of multicast loopback in the operating system's network stack ignores the group address when receiving messages. This causes *Message Service* to receive all outgoing multicast traffic originating from the host for that port.

Thus, if you have two *Connection*s on the same host and in the same domain, both listening for discovery traffic over multicast, they will discover each other, regardless of the multicast address to which they are listening.

5.2 Windows Platforms

5.2.1 PPP Link Support for Windows XP Systems

To use a Windows XP point-to-point protocol (PPP) link (such as a serial cable), the UDP transport properties for the *Message Service* applications running on the PPP server machine *must* be configured with multicast disabled for the PPP server interface(s).

To disable multicast for an interface, change the UDPv4 transport properties as follows:

```
<connection_factory name="Example Factory">
    <property>
        <value>
            <element>
                <name>
                dds.transport.UDPv4.builtin.parent.deny_multicast_interfaces
                </name>
                <!-- PPP interface address: -->
                <value>192.168.250.100</value>
             </element>
          </value>
      </property>
  </connection_factory>
```

Failure to do so will result in *Message Service* being unable to send any data at all over the PPP link.

Notes:

- Setting up multicast-related socket options for the PPP interface can prevent future *unicast* sends using that socket from working.
- *Message Service* sets up certain sockets for multicast even if it has no multicast peers, in case some show up later. You avoid this by configuring the multicast deny list as described above.

5.2.2 Disabled Interfaces on Windows Systems

The creation of a *Connection* will fail if no interface is enabled *and* the **discovery.multicast_receive_addresses** list contains a multicast address. However, if discovery **initial peers** list only contains unicast addresses, the *Connection* will be successfully created even if all the interfaces are disabled.

6 Known Issues

6.1 RTI Message Service does not Work with JRE Distributed with RTI Connext DDS

If you try to run an application using the JRE that is distributed with *Connext DDS*, you will see errors such as these:

```
Naming exception in initial context: cvc-elt.1: Cannot find the declara-
tion of element 'jms'. (line -1, col -1)
javax.naming.NamingException: cvc-elt.1: Cannot find the declaration of
element 'jms'. (line -1, col -1) [Root exception is org.xml.sax.SAXParseEx-
ception: cvc-elt.1: Cannot find the declaration of element 'jms'.]
    at com.rti.jms.ContextUtilities.wrapAndThrowNamingException(Unknown
Source)
    at com.rti.jms.ConfigXmlTransformer.<init>(Unknown Source)
    at com.rti.jms.JmsConfigContext.<init>(Unknown Source)
    at com.rti.jms.JmsConfigContext.<init>(Unknown Source)
```

The problem is that the JRE provided with *Connext DDS* includes Xalan 2.7.1 in the endorsed directory of the JRE. *Message Service* uses the Xalan-Java XSLT preprocessor to process its configuration. However, *Message Service* only supports the Xalan-Java version that is packaged with the JRE and not the endorsed 2.7.1 version.