RTI Message Service

Release Notes

Version 5.1.0

Your systems. Working as one.

Printed in U.S.A. First printing.
December 2013.

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)
- ❏ What's New in 5.1.0 (Section 3)
- ❏ What's Fixed in 5.1.0 (Section 4)
- ❏ 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 describes the systems supported by *RTI Message Service*; all platforms use Java Platform, Standard Edition JDK 1.7.

Table 1.1 **Supported Platforms**

Operating System		CPU	RTI Architecture Name
Linux®	CentOS 5.4, 5.5 (2.6 kernel)	x86	i86Linux2.6gcc4.1.2jdk
		x64	x64Linux2.6gcc4.1.2jdk
	CentOS 6.0, 6.2-6.4 (2.6 kernel)	x86	i86Linux2.6gcc4.4.5jdk
		x64	x64Linux2.6gcc4.4.5jdk
	Red Hat® Enterprise Linux 5.0	x86	i86Linux2.6gcc4.1.1jdk
		x64	x64Linux2.6gcc4.1.1jdk
	Red Hat Enterprise Linux 5.1, 5.2, 5.4, 5.5	x86	i86Linux2.6gcc4.1.2jdk
		x64	x64Linux2.6gcc4.1.2jdk
	Red Hat Enterprise Linux 6.0-6.4 (2.6 kernel)	x86	i86Linux2.6gcc4.4.5jdk
		x64	x64Linux2.6gcc4.4.5jdk
	Ubuntu ®Server 12.04 LTS (3.x kernel)	x86	i86Linux3.xgcc4.6.3jdk
		x64	x64Linux3.xgcc4.6.3jdk
Windows®	Windows 7 Windows 8 Windows 2000 Windows 2003 Windows XP Professional[1,2] Windows Vista®	x86	i86Win32jdk
	Windows 7 Windows 8 Windows Server® 2008 R2 Windows Server 2012 R2 Windows 2003 Windows XP Professional[1,2] Windows Vista	x64	x64Win64jdk

1. The Windows XP operating system 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.
2. On Windows XP systems: If you are using Java EE 5 SDK and want to use Intel's HyperThreading technology, use Java EE 5 Update 6 (build 1.5.0_06) or later, which includes fixes to JNI and HyperThreading. If you must use an earlier release, you should disable HyperThreading.)

Visual Studio® 2005 — Service Pack 1 Redistributable Package MFC Security Update is Required

❑ You must have the Microsoft® Visual C++ 2005 Service Pack 1 Redistributable Package MFC Security Update installed on the machine where you are *running* an application built with the release or debug libraries of the following RTI architecture packages:

- i86Win32jdk
- x64Win64jdk

The Microsoft Visual C++ 2005 Service Pack 1 Redistributable Package MFC Security Update can be obtained from the following Microsoft website:

- http://www.microsoft.com/download/en/details.aspx?id=26347

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

RTI Message Service includes full support for pluggable transports. *RTI 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, *RTI 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.

2 Compatibility

In *Connext*™ 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 is not off-the-shelf compatible with applications running older versions of *Connext* or *RTI Data Distribution Service*. Please see the *RTI Connext Core Libraries and Utilities Release Notes* for instructions on how to resolve the compatibility issue with older *Connext* and *RTI Data Distribution Service* applications.

3 What's New in 5.1.0

RTI Message Service 5.1.0 is based on *RTI Connext*™ *Core Libraries and Utilities* 5.1.0. Therefore all new features described in *RTI Core Libraries and Utilities What's New* (RTI_CoreLibrariesAndUtilities_WhatsNew.pdf) also apply to *RTI Message Service* 5.1.0.

3.1 New Platforms

- ❏ CentOS 6.2 - 6.4
- ❏ Red Hat Enterprise Linux 6.2- 6.4
- ❏ Ubuntu Server 12.04 LTS, 3.x kernel
- ❏ Windows 8
- ❏ Windows Server 2012 R2

3.2 Removed Platforms

- ❏ SuSE Linux Enterprise Server 10.1 (which was only available in unlicensed distributions)
- ❏ Ubuntu Server 10.04 LTS, 2.6 kernel

4 What's Fixed in 5.1.0

4.1 'Inherit' XML Attribute not Supported in <property> Tag

In previous releases, you could not set the **inherit** attribute in the <property> XML tag in a configuration file for *RTI Message Service*. Therefore the default behavior, in which properties are inherited, could not be changed. This problem has been resolved.

[RTI Issue ID CORE-5669]

4.2 Possible Error Validating RTI Message Service Configuration Files at Run Time using XSD Schema

In some cases, you may have seen the following error message when trying to parse a legal *RTI Message Service* configuration file:

```
cvc-elt.1: Cannot find the declaration of element 'jms'.
```

This problem occurred when the *RTI Message Service* application was run using an external version of the Apache Xerces™ XML parser.

[RTI Issue ID CORE-5814]

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 *RTI Message Service* are in the range of 0x400000. For example:

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

The shared semaphore keys used by *RTI 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 *RTI 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 *RTI 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 *RTI 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 *RTI 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.
- *RTI 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 Connext

If you try to run an application using the JRE that is distributed with *Connext*, 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* includes Xalan 2.7.1 in the endorsed directory of the JRE. *RTI Message Service* uses the Xalan-Java XSLT preprocessor to process its configuration. However, *RTI Message Service* only supports the Xalan-Java version that is packaged with the JRE and not the endorsed 2.7.1 version.