

RTI Real-Time WAN Transport Release Notes

Version 7.3.0



Contents

1	Copyrights and Notices	1
2	Supported Platforms	3
3	Compatibility	4
4	What's New in 7.3.0 LTS	5
5	What's Fixed in 7.3.0 LTS	6
5.1	[Critical] Possible crash when receiving participant announcements with Real-Time WAN transport *	6
6	Previous Releases	7
6.1	What's New in 7.2.0	7
6.1.1	Added Pre-Shared Key Protection to Cloud Discovery Service and Real-Time WAN Transport	7
6.2	What's Fixed in 7.1.0	7
6.2.1	[Major] Duplicate participant announcements sent to WAN peers when using Real-Time WAN Transport	7
6.3	What's New in 7.0.0	8
6.3.1	New builtin XML snippets facilitate UDP communication over WAN or third-party networks	8
6.4	What's Fixed in 7.0.0	8
6.4.1	[Minor] Real-Time WAN Transport did not work if accept_unknown_peers was FALSE	8

Chapter 1 Copyrights and Notices

© 2020-2024 Real-Time Innovations, Inc. All rights reserved. Apr 04, 2024

Trademarks

RTI, Real-Time Innovations, Connex, Connex Drive, NDDS, the RTI logo, 1RTI and the phrase, “Your Systems. Working as one.” are registered trademarks, trademarks or service marks of Real-Time Innovations, Inc. All other trademarks belong to their respective owners.

Copy and Use Restrictions

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form (including electronic, mechanical, photocopy, and facsimile) without the prior written permission of Real-Time Innovations, Inc. The software described in this document is furnished solely under and subject to RTI’s standard terms and conditions available at <https://www.rti.com/terms> and in accordance with your License Acknowledgement Certificate (LAC) and Maintenance and Support Certificate (MSC), except to the extent otherwise accepted in writing by a corporate officer of RTI.

Third-Party Software

RTI software may contain independent, third-party software or code that are subject to third-party license terms and conditions, including open source license terms and conditions. Copies of applicable third-party licenses and notices are located at community.rti.com/documentation. IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR USE OF THIRD-PARTY SOFTWARE COMPLIES WITH THE CORRESPONDING THIRD-PARTY LICENSE TERMS AND CONDITIONS.

Notices

Deprecations and Removals

Any deprecations or removals noted in this document serve as notice under the Real-Time Innovations, Inc. Maintenance Policy #4220 and/or any other agreements by and between RTI and customer regarding maintenance and support of RTI’s software.

Deprecated means that the item is still supported in the release, but will be removed in a future release. *Removed* means that the item is discontinued or no longer supported. By specifying that an item is deprecated in a release,

RTI hereby provides customer notice that RTI reserves the right after one year from the date of such release and, with or without further notice, to immediately terminate maintenance (including without limitation, providing updates and upgrades) for the item, and no longer support the item, in a future release.

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/>

Chapter 2 Supported Platforms

See [Supported Platforms](#), in the RTI Connext Core Libraries Release Notes.

Chapter 3 Compatibility

Real-Time WAN Transport is an optional product for use with *Connex* with the same version number.

Chapter 4 What's New in 7.3.0 LTS

For information on new features in releases 7.0.0, 7.1.0, and 7.2.0, which are all also part of 7.3.0 LTS, see *Previous Releases*.

Chapter 5 What's Fixed in 7.3.0 LTS

This section describes bugs fixed in *Connex* 7.3.0 LTS. These are fixes since 7.2.0. For information on what's fixed in releases 7.0.0, 7.1.0, and 7.2.0, which are all also part of 7.3.0 LTS, see *Previous Releases*.

[Critical]: System-stopping issue, such as a crash or data loss. [Major]: Significant issue with no easy workaround. [Minor]: Issue that usually has a workaround. [Trivial]: Small issue, such as a typo in a log.

5.1 [Critical] Possible crash when receiving participant announcements with Real-Time WAN transport *

It was previously possible for a *DomainParticipant* to crash or to experience unbounded memory growth when processing participant announcements (either full participant announcements if using SPDP or bootstrap/configuration messages if using SPDP2) and using the *Real-Time WAN Transport*. This could occur if a participant received a single participant announcement that contained locators that had the same UUID with different public addresses, or received multiple participant announcements from different active participants that also contained locators with the same UUID with different public addresses. See [Transport Locators](#) in the *Core Libraries User's Manual* for more information on UUID and public locators in the *Real-Time WAN Transport*. This problem was not expected in a normal system, where the same UUID is not used for multiple different public addresses or different participants.

[RTI Issue ID CORE-14006]

Chapter 6 Previous Releases

6.1 What's New in 7.2.0

6.1.1 Added Pre-Shared Key Protection to Cloud Discovery Service and Real-Time WAN Transport

In release 7.1.0, the SECURITY PLUGINS (*RTI Security Plugins*) introduced Pre-Shared Key (PSK) Protection as a new protection mechanism, complementary to more-advanced SECURITY PLUGINS features or standalone. In this release, the SECURITY PLUGINS added PSK support for *RTI Cloud Discovery Service* (protecting discovery information relayed by *Cloud Discovery Service*) and *Real-Time WAN Transport* (protecting UDP Binding Ping).

6.2 What's Fixed in 7.1.0

6.2.1 [Major] Duplicate participant announcements sent to WAN peers when using Real-Time WAN Transport

Previous versions of *Real-Time WAN Transport* required you to add 0@ to the beginning of an entry in the `initial_peers` list, or else extra discovery traffic would be generated (five duplicate participant announcements (DATA(P)/DATA(Pb)) would be sent to each initial peer each time one should be written). For example, if you used a value of 5 for `initial_participant_announcements`, then 25 initial participant announcements would be sent. This problem has now been fixed so that only a single participant announcement will be sent to each initial peer. For example, if you use a value of 5 for `initial_participant_announcements`, then five initial participant announcements will be sent.

Excess discovery traffic was also produced from the locators received from a remote participant. If a remote participant had multiple UUID locators that mapped to the same `<peer_public_address>:<peer_public_port>`, then a participant would send duplicate participant announcements to each UUID locator, resulting in duplicate traffic to the same `<peer_public_address>:<peer_public_port>`. This issue has been resolved, and UUID locators that map to the same `<peer_public_address>:<peer_public_port>` will only result in one participant announcement being sent, regardless of the number of UUID locators.

[RTI Issue ID CORE-13245]

6.3 What's New in 7.0.0

6.3.1 New builtin XML snippets facilitate UDP communication over WAN or third-party networks

This release includes two new XML snippets to facilitate UDP communication over WAN or third-party networks:

- Transport.UDP.AvoidIPFragmentation
- Transport.UDP.WAN

For WAN communications, it is not a good idea to rely on IP fragmentation. IP fragmentation causes significant issues in UDP, where there is no integrated support for a path MTU (maximum transmission unit) discovery protocol as there is in TCP.

The Transport.UDP.AvoidIPFragmentation snippet configures a Participant to avoid IP fragmentation when using the builtin UDP transports.

The Transport.UDP.WAN snippet uses Transport.UDP.AvoidIPFragmentation and enables the *Real-Time WAN Transport*. We recommend this snippet for configurations that require sending data over the WAN.

Example:

```
<qos_profile name="DisableIPFragmentationWAN">
  <base_name>
    <element>Transport.UDP.WAN</element>
  </base_name>
</qos_profile>
```

6.4 What's Fixed in 7.0.0

6.4.1 [Minor] Real-Time WAN Transport did not work if accept_unknown_peers was FALSE

With *Real-Time WAN Transport*, an internal participant should be able to communicate with an external participant regardless of the `discovery.accept_unknown_peers` setting, as long as the internal participant sets its initial peer to the public IP address and port of the external participant. For example:

```
udpv4_wan://34.45.6.1:3456
```

But communication with `discovery.accept_unknown_peers` set to FALSE on the internal participant was not possible. This problem has been resolved.

For more information, see [Disabling IP Fragmentation for Real-Time WAN Transport, in the RTI Connex Core Libraries User's Manual](#).

[RTI Issue ID COREPLG-628]

* *This bug does not affect you if you are upgrading from 6.1.x or earlier.*