RTI Real-Time WAN Transport

Installation Guide

Version 7.3.0

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1 Paths Mentioned in Documentation

The documentation refers to:

- **<NDDSHOME>**

  This refers to the installation directory for *RTI® Connext®*. The default installation paths are:
    - macOS® systems:
      /Applications/rti_connext_dds-7.3.0
    - Linux systems, non-*root* user:
      /home/<*your user name*>/rti_connext_dds-7.3.0
    - Linux systems, *root* user:
      /opt/rti_connext_dds-7.3.0
    - Windows® systems, user without Administrator privileges:
      <*your home directory*>\rti_connext_dds-7.3.0
    - Windows systems, user with Administrator privileges:
      C:\Program Files\rti_connext_dds-7.3.0

  You may also see **$NDDSHOME** or **%NDDSHOME%**, which refers to an environment variable set to the installation path.

  Wherever you see **<NDDSHOME>** used in a path, replace it with your installation path.

  Note for Windows Users: When using a command prompt to enter a command that includes the path **C:\Program Files** (or any directory name that has a space), enclose the path in quotation marks. For example:

  ```
  "C:\Program Files\rti_connext_dds-7.3.0\bin\rtiddsgen"
  ```

  Or if you have defined the **NDDSHOME** environment variable:

  ```
  "%NDDSHOME%\bin\rtiddsgen"
  ```

- ***<path to examples>***

  By default, examples are copied into your home directory the first time you run *RTI Launcher* or any script in **<NDDSHOME>/bin**. This document refers to the location of the copied examples as ***<path to examples>***.

  Wherever you see ***<path to examples>***, replace it with the appropriate path.

  Default path to the examples:
    - macOS systems: **/Users/*<your user name>*/rti_workspace/7.3.0/examples**
    - Linux systems: **/home/*<your user name>*/rti_workspace/7.3.0/examples**
    - Windows systems: ***<your Windows documents folder>*\rti_workspace\7.3.0\examples**

      Where 'your Windows documents folder' depends on your version of Windows. For example, on Windows 10, the folder is **C:\Users*<your user name>*\Documents**.

  Note: You can specify a different location for **rti_workspace**. You can also specify that you do not want the examples copied to the workspace. For details, see *Controlling Location for RTI Workspace and Copying of Examples* in the *RTI Connext Installation Guide*.

2 Download Instructions

If you install an *RTI Connext* evaluation ("eval") or LM ("lm") package (such as **rti_connext_dds-7.3.0-eval-x64Win64VS2017.exe** or **rti_connext_dds-7.3.0-lm-x64Win64VS2017.exe**), then *Real-Time WAN Transport* and *RTI Cloud Discovery Service* are both included in the package and you don't need to download them[1]; however, you will need license files to use them. See the *License Management* chapter, in the [RTI Connext Installation Guide](#).

Otherwise (for example, when installing the *RTI Connext Professional* package), you will need to additionally download the *Real-Time WAN Transport* package from the RTI Customer Portal, accessible from https://support.rti.com/.

You will need your username and password to log into the portal. If you do not have this info, please contact **license@rti.com**.

Once you have logged into the portal, select the **Downloads** link, then select the appropriate version of *Real-Time WAN Transport* for your platform. Download both of the following:

- **rti_real_time_wan_transport-7.3.0-host-<host platform>.rtipkg**

  For example: **rti_real_time_wan_transport-7.3.0-host-x64Linux.rtipkg**.

- **rti_real_time_wan_transport-7.3.0-target-<target architecture>.rtipkg**

  For example: **rti_real_time_wan_transport-7.3.0-target-x64Linux4gcc7.3.0.rtipkg**.

  Architecture names are described in the [RTI Connext Core Libraries Platform Notes](#). See also the [*RTI Real-Time WAN Transport Release Notes*](#) for any updates.

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[0]

[1]The evaluation and LM packages also include *RTI Security Plugins* and a prebuilt version of OpenSSL 3.0.12. If you wish to build your own version of OpenSSL 3.0.12, you can find the source code here: https://www.openssl.org/source/.

Optionally, you can download and install *Cloud Discovery Service* for use with *Real-Time WAN Transport* (unless you have installed the *RTI Connext* evaluation ("eval") or LM ("lm") package, which already includes *Cloud Discovery Service*). *Cloud Discovery Service* is required if the *DomainParticipants* communicating over a WAN are behind cone NATs (see *RTI Real-Time WAN Transport* in the *RTI Connext Core Libraries User's Manual* for more information):

- **rti_cloud_discovery_service-7.3.0-host-<host platform>.rtipkg**

  For example: **rti_cloud_discovery_service-7.3.0-host-x64Linux.rtipkg**.

- **rti_cloud_discovery_service-7.3.0-target-<arch>.rtipkg**

  For example: **rti_cloud_discovery_service-7.3.0-target-x64Linux4gcc7.3.0.rtipkg**.

If you need help with the download process, contact **support@rti.com**.

3 Installation Instructions

You do not need administrator privileges. All directory locations are meant as examples only; adjust them to suit your site. <NDDSHOME> is described in 1 Paths Mentioned in Documentation on page 1.

3.1 Installing an Evaluation or LM Version

1. Install the evaluation ("eval") or LM ("lm") bundle as described in the *Installing RTI Connext* chapter, in the RTI Connext Installation Guide.

   > To use *Real-Time WAN Transport* in the evaluation or LM bundle, you need a valid license for *Real-Time WAN Transport*. See the *License Management* chapter, in the RTI Connext Installation Guide.

   The installer places files into an **rti_connext_dds-7.x.y** directory, including the *Real-Time WAN Transport* functionality. Unlike with the regular version, the evaluation or LM version does not require the installation of a separate *Real-Time WAN Transport* package.

2. If not already included, add **<NDDSHOME>\lib\<architecture>** to your Path environment variable. For example (enter this on one line):

   On Linux and macOS systems:

   ```
   export PATH=<NDDSHOME>/lib/<architecture>:${PATH}
   ```

   On Windows systems:

   ```
   set PATH=<NDDSHOME>\lib\<architecture>;%PATH%
   ```

   These commands set your Path environment variable temporarily. To set your path longer term, consult your operating system's documentation.

After installing, see the *RTI Real-Time WAN Transport part* in the RTI Connext Core Libraries User's Manual. You can also find an example here:

https://github.com/rticommunity/rticonnextdds-examples/tree/release/<version>/examples/connext_dds/real_time_wan_transport.

3.2 Installing a Regular Version

3.2.1 Installing on Windows Systems

1. Install the *Real-Time WAN Transport* host and target **.rtipkg** files on top of *RTI Connext*.

   There are two ways to install these files: from *RTI Launcher* or from the command line.

   To install from *RTI Launcher*:
   a. Start *RTI Launcher*:

   ```
   cd <NDDSHOME>
   bin\rtilauncher
   ```

   a. From the **Configuration** tab, click on **Install RTI Packages**.

   b. Use the **+** sign to add the **.rtipkg** files that you want to install.

   c. Click **Install**.

   To install from the command line:

   ```
   cd <NDDSHOME>\bin
   .\rtipkginstall <path to .rtipkg file>
   ```

   This will install files into the existing **rti_connext_dds-7.x.y** directory. The installer will put the *Real-Time WAN Transport* libraries in **<NDDSHOME>\lib\<architecture>**.

2. If not already included, add **<NDDSHOME>\lib\<architecture>** to your Path environment variable. For example (enter this on one line):

   ```
   set PATH=<NDDSHOME>\lib\<architecture>;%PATH%
   ```

   This command sets your Path environment variable temporarily. To set your path longer term, consult your operating system's documentation.

3. To verify your installation, find the *Real-Time WAN Transport* library (*nddsrwt*) in **<install dir>\lib\<target architecture>**.

   See the RTI Connext Core Libraries Platform Notes for a list of the *Real-Time WAN Transport* libraries for your platform.

After installing, see the *RTI Real-Time WAN Transport part* in the RTI Connext Core Libraries User's Manual. You can also find an example here: https://github.com/rticommunity/rticonnextdds-examples/tree/release/<version>/examples/connext_dds/real_time_wan_transport.

3.2.2 Installing on Linux and Other Systems

1. Install the *Real-Time WAN Transport* host and target **.rtipkg** files on top of *RTI Connext*.

   There are two ways to install these files: from *RTI Launcher* or from the command line.

   To install from *RTI Launcher*:
   a. Start *RTI Launcher*:

   ```
   cd <NDDSHOME>/bin
   ./rtilauncher
   ```

   a. From the **Configuration** tab, click on **Install RTI Packages**.

   b. Use the **+** sign to add the **.rtipkg** files that you want to install.

   c. Click **Install**.

   To install from the command line:
   ```
   cd <NDDSHOME>/bin
   ./rtipkginstall <path to .rtipkg file>
   ```

   This will install files into the existing **rti_connext_dds-7.x.y** directory. The installer will put the *Real-Time WAN Transport* libraries in **<NDDSHOME>/lib/<architecture>**.

2. If the following are not already included in your path:
   a. Add **<NDDSHOME>/bin** to your PATH environment variable:

   ```
   export PATH=<NDDSHOME>/bin:$PATH
   ```

   b. Add **<NDDSHOME>/lib/<architecture>** to your library search path (pointed to by the LD_LIBRARY_PATH environment variable on Linux systems, DYLD_LIBRARY_PATH on macOS systems).

   For example (enter this on one line):
   ```
   export LD_LIBRARY_PATH=<NDDSHOME>/lib/<architecture>:${LD_LIBRARY_PATH}
   ```

   These commands set your paths temporarily. To set them longer term, consult your operating system's documentation.

3. To verify your installation, find the *Real-Time WAN Transport* library (*libnddsrwt*) in **<install dir>/lib/<target architecture>**.

   See the RTI Connext Core Libraries Platform Notes for a list of the *Real-Time WAN Transport* libraries for your platform.

After installing, see the *RTI Real-Time WAN Transport part* in the RTI Connext Core Libraries User's Manual. You can also find an example here: https://github.com/rticommunity/rticonnextdds-examples/tree/release/<version>/examples/connext_dds/real_time_wan_transport.

3.3 Installing Cloud Discovery Service (Optional)

If you have installed the regular version (in 3.2 Installing a Regular Version on page 6), you can option-ally install *Cloud Discovery Service* from *RTI Launcher* or the command line just as you did above. For details, see the "Installation" chapter of the *RTI Cloud Discovery Service* documentation.

If you are installing an evaluation ("eval") or LM ("lm") bundle, it already includes *Cloud Discovery Service*. Follow the instructions in the *Installing RTI Connext* chapter, in the RTI Connext Installation Guide, regarding how to install the evaluation or LM bundle.

> To use *Cloud Discovery Service* in the evaluation or LM bundle, you need a valid license for *Cloud Discovery Service*. See the *License Management* chapter, in the RTI Connext Installation Guide.

4 Additional Documentation

The following documentation on *Real-Time WAN Transport* is provided with the *RTI Connext* distribution.

- Release Notes: **<NDDSHOME>/doc/manuals/addon_products/realtime_wan_transport/release_notes/RTI_RealTime_WAN_Transport_ReleaseNotes.pdf**

- User's Manual:

  <NDDSHOME>/doc/manuals/connext_dds_professional/users_manual/RTI_ConnextDDS_CoreLibraries_UsersManual.pdf

- API Reference HTML documentation: Under the **Modules** tab, navigate to **RTI Connext API Reference**, **Transports**, **Built-in Transport Plugins**, **Real-Time WAN Transport**.

<NDDSHOME> and <path to examples> are described in .