

RTI Real-Time WAN Transport

Installation Guide

Version 6.1.1



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The security features of this product include software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Notice

Any deprecations noted in this document serve as notice under the Real-Time Innovations, Inc. Maintenance Policy #4220.

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1 Paths Mentioned in Documentation

The documentation refers to:

- **<NDDSHOME>**

This refers to the installation directory for *RTI® Connex® DDS*. The default installation paths are:

- macOS® systems:
/Applications/rti_connex_dds-6.1.1
- Linux systems, non-*root* user:
/home/<your user name>/rti_connex_dds-6.1.1
- Linux systems, *root* user:
/opt/rti_connex_dds-6.1.1
- Windows® systems, user without Administrator privileges:
<your home directory>\rti_connex_dds-6.1.1
- Windows systems, user with Administrator privileges:
C:\Program Files\rti_connex_dds-6.1.1

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_connex_dds-6.1.1\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/6.1.1/examples*
- Linux systems: */home/<your user name>/rti_workspace/6.1.1/examples*
- Windows systems: *<your Windows documents folder>\rti_workspace\6.1.1\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 Connex DDS Installation Guide*.

2 Download Instructions

Download *Real-Time WAN Transport* from the RTI Support Portal, accessible from <https://support.rti.com/>.

You will need your username and password to log into the portal; these are included in the letter confirming your purchase or license-managed (LM) copy. If you do not have this letter, 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-6.1.1-host-<host platform>.rtipkg**

For example: **rti_real_time_wan_transport-6.1.1-host-x64Linux.rtipkg**.

- **rti_real_time_wan_transport-6.1.1-<target architecture>.rtipkg**

For example: **rti_real_time_wan_transport-6.1.1-target-x64Linux4gcc7.3.0.rtipkg**.

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

Optionally, you can download and install *RTI Cloud Discovery Service* for use with *Real-Time WAN Transport*. *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 Connex DDS Core Libraries User's Manual* for more information):

- **rti_cloud_discovery_service-6.1.1-<host platform>.rtipkg**

For example: **rti_cloud_discovery_service-6.1.1-x64Linux.rtipkg**.

If you are installing an LM package, the [RTI Real-Time WAN Transport](#) and [RTI Cloud Discovery Service](#) packages are included in a single bundle with the rest of *Connex DDS*. The bundle is

named as follows: **rti_connex_t_dds-<version>-lm-<target_architecture>.<extension>**. For example: **rti_connex_t_dds-6.1.1-lm-x64Win64VS2017.exe**.¹

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

¹The LM package also includes *RTI Security Plugins* and a prebuilt version of OpenSSL 1.1.1n. If you wish to build your own version of OpenSSL 1.1.1n, you can find the source code here: <https://www.openssl.org/source/>.

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 a License-Managed (LM) Version

1. Install the *Connex DDS* license-managed ("lm") bundle as described in the *Installing RTI Connex DDS* chapter, in the [RTI Connex DDS Installation Guide](#).

The installer places files into an `rti_connex_dds-6.x.y` directory, including the *Real-Time WAN Transport* functionality. Unlike with the regular version, the license-managed 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.

3. Your *Real-Time WAN Transport* distribution may require a license. See the *License Management* chapter, in the [RTI Connex DDS Installation Guide](#).

After installing, see the *RTI Real-Time WAN Transport part* in the [RTI Connex DDS Core Libraries User's Manual](#).

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 Connexx DDS*.

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_connexx_dds-6.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 Connexx DDS 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 Connexx DDS Core Libraries User's Manual](#).

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 Connexx DDS*.

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_connex_dds-6.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 (*libnddsrtw*) in **<install dir>/lib/<target architecture>**.

See the [RTI Connex DDS 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 Connex DDS Core Libraries User's Manual](#).

3.3 Installing Cloud Discovery Service (Optional)

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 a license-managed ("lm") bundle, which includes *Cloud Discovery Service*, follow the instructions in the *Installing RTI Connexx DDS* chapter, in the [RTI Connexx DDS Installation Guide](#).

4 Additional Documentation

The following documentation on *Real-Time WAN Transport* is provided with the *RTI Connex DDS* 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/connex_dds_professional/users_manual/RTI_ConnexDDS_CoreLibraries_UsersManual.pdf`
- API Reference HTML documentation: Under the **Modules** tab, navigate to **RTI Connex DDS API Reference, Transports, Built-in Transport Plugins, Real-Time WAN Transport**.

`<NDDSHOME>` and `<path to examples>` are described in [1 Paths Mentioned in Documentation on page 1](#).