RTI Real-Time
WAN Transport
Installation Guide

Version 6.1.1
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1 Paths Mentioned in Documentation

The documentation refers to:

- `<NDDSHOME>`

  This refers to the installation directory for RTI® Connext® DDS. The default installation paths are:
  - macOS® systems:
    `/Applications/rti_connext_dds-6.1.1`
  - Linux systems, non-root user:
    `/home/<your user name>/rti_connext_dds-6.1.1`
  - Linux systems, root user:
    `/opt/rti_connext_dds-6.1.1`
  - Windows® systems, user without Administrator privileges:
    `<your home directory>/rti_connext_dds-6.1.1`
  - Windows systems, user with Administrator privileges:
    `C:\Program Files\rti_connext_dds-6.1.1`

You may also see SNDDSHOME 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-6.1.1\bin\rtiddsgen"
```

Or if you have defined the NDDSHOME environment variable:

```
"%NDDSHOME%\bin\rtiddsgen"
```
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 Connext DDS Installation Guide.
2 Download Instructions


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](mailto: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 Connext 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 Connext 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 Connext DDS. The bundle is
named as follows: rti_connext_dds-<version>-lm-<target_architecture>.<extension>. For example: rti_connext_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 Connext DDS license-managed ("lm") bundle as described in the Installing RTI Connext DDS chapter, in the RTI Connext DDS Installation Guide.

   The installer places files into an rti_connext_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 Connext DDS Installation Guide.

After installing, see the RTI Real-Time WAN Transport part in the RTI Connext 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 Connext 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\tipkginstall <path to .rtipkg file>
   ```

   This will install files into the existing *rti_connext_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 Connext DDS Core Libraries Platform Notes](https://connext.dds.rti.com) for a list of the *Real-Time WAN Transport* libraries for your platform.


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 DDS*.

   There are two ways to install these files: from *RTI Launcher* or from the command line.
3.3 Installing Cloud Discovery Service (Optional)

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-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 (libnddsrwt) in `<install dir>/lib/<target architecture>`.

See the RTI Connext 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 Connext 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 Connext DDS* chapter, in the [RTI Connext DDS Installation Guide](#).
4 Additional Documentation

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

- User's Manual:
- API Reference HTML documentation: Under the Modules tab, navigate to *RTI Connext 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.