

# **RTI Secure WAN Transport**

## **Installation Guide**

**Version 6.0.0**



© 2019 Real-Time Innovations, Inc.  
All rights reserved.  
Printed in U.S.A. First printing.  
February 2019.

## **Trademarks**

Real-Time Innovations, RTI, NDDS, RTI Data Distribution Service, Connex, Micro DDS, the RTI logo, IRTI 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 under and subject to the RTI software license agreement. The software may be used or copied only under the terms of the license agreement.

This is an independent publication and is neither affiliated with, nor authorized, sponsored, or approved by, Microsoft Corporation.

The security features of this product include software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

## **Technical Support**

Real-Time Innovations, Inc.

232 E. Java Drive

Sunnyvale, CA 94089

Phone: (408) 990-7444

Email: [support@rti.com](mailto:support@rti.com)

Website: <https://support.rti.com/>

# Contents

---

|   |          |
|---|----------|
| <b>1 Paths Mentioned in Documentation</b> ..... | <b>1</b> |
| <b>2 Download Instructions</b> .....            | <b>3</b> |
| <b>3 Installing on UNIX-Based Systems</b> ..... | <b>4</b> |
| <b>4 Installing on Windows Systems</b> .....    | <b>7</b> |
| <b>5 Additional Documentation</b> .....         | <b>9</b> |

# 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:

- Mac® OS X® systems:  
**/Applications/rti\_connex\_dds-6.0.0**
- UNIX-based systems, non-*root* user:  
**/home/<your user name>/rti\_connex\_dds-6.0.0**
- UNIX-based systems, *root* user:  
**/opt/rti\_connex\_dds-6.0.0**
- Windows® systems, user without Administrator privileges:  
**<your home directory>\rti\_connex\_dds-6.0.0**
- Windows systems, user with Administrator privileges:  
**C:\Program Files\rti\_connex\_dds-6.0.0**

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_connex_dds-6.0.0\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:

- Mac OS X systems: **/Users/<your user name>/rti\_workspace/6.0.0/examples**
- UNIX-based systems: **/home/<your user name>/rti\_workspace/6.0.0/examples**
- Windows systems: **<your Windows documents folder>\rti\_workspace\6.0.0\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 Connex DDS Core Libraries Getting Started Guide*.

## 2 Download Instructions

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

*Secure WAN Transport* also requires OpenSSL. See the *RTI Secure WAN Transport Release Notes* for the version number. OpenSSL is available from RTI's Support Portal, or you may obtain it from another source.

You will need your username and password to log into the portal; these are included in the letter confirming your purchase or evaluation 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 *Secure WAN Transport* and OpenSSL for your platform.

If you need help with the download process, contact [support@rti.com](mailto:support@rti.com).

- **RTI Secure WAN Transport:** The distribution file uses the naming convention, **rti\_secure\_wan-<architecture>.rtipkg**, where *<architecture>* will match your system architecture. System architecture names are described in the *RTI Secure WAN Transport Release Notes*. For example:
  - **rti\_secure\_wan-i86Linux3gcc4.8.2.rtipkg**
  - **rti\_secure\_wan-i86Win32VS2013.rtipkg**
- **OpenSSL:** Distribution files follow the naming convention, **openssl-<version>-<architecture>.tar.gz** (or **.zip** on Windows systems). The OpenSSL version number and architecture names are described in the *RTI Secure WAN Transport Release Notes*. For example:
  - **openssl-<version>-i86Linux3gcc4.8.2.tar.gz**
  - **openssl-<version>-i86Win32VS2013.zip**

## 3 Installing on UNIX-Based Systems

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](#).

1. Install *Secure WAN Transport* on top of *RTI Connex DDS*. There are two ways to install it: 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** file 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; including placement of the **rtiwanserver** application in **/bin**.

2. Include **\$NDDSHOME/bin** in your **PATH** environment variable, if it is not already included:

```
setenv PATH $NDDSHOME/bin:$PATH
```

3. In your **LD\_LIBRARY\_PATH** environment variable, include **\$NDDSHOME/lib/<architecture>** if it's not already included. For example (enter this on one line):

```
setenv LD_LIBRARY_PATH
${NDDSHOME}/lib/i86Linux3gcc4.8.2:${LD_LIBRARY_PATH}
```

4. To verify your installation, enter:

```
> rtiwanserver -help
```

You should see a response similar to:

```
Usage: rtiwanserver [options] ...
Options:
-help                Display this information
-address <string>   Server address (default: gethostname() output)
-port <integer>     Server port (default: 3478)
-verbosity <integer> Log verbosity [0-5] (default:1-exceptions -)
```

5. Install OpenSSL:

- a. Make sure you have GNU's version of the tar utility, **gtar** (which handles long file names), and GNU's version of the unzip utility, **gunzip**.
- b. Move the downloaded OpenSSL distribution file to a directory of your choice, such as **/local/rti**, and change to that directory:

```
cd /local/rti
```

- c. Use **gunzip** to uncompress the OpenSSL file. For example (your filename may be different):

```
gunzip openssl-<version>-i86Linux3gcc4.8.2.tar.gz
```

- d. Use **gtar** to extract the distribution from the uncompressed file. For example:

```
gtar xvf openssl-<version>-i86Linux3gcc4.8.2.tar
```

This will extract files into **/local/rti/openssl-<version>**.

- e. Include the resulting **bin** directory for OpenSSL in your PATH. For example, if you install OpenSSL in **/local/rti**, its **bin** directory will be here:

**/local/rti/openssl-<version>/i86Linux3gcc4.8.2/release/bin**

An example of setting the PATH is seen below (enter this on one line):

```
setenv PATH
/local/rti/openssl-<version>/i86Linux3gcc4.8.2/release/bin:$PATH
```

- f. Include the resulting **lib** directory in your LD\_LIBRARY\_PATH. For example, assuming we want to use the "release" version of the OpenSSL libraries (enter this on one line):

```
setenv LD_LIBRARY_PATH /local/rti/openssl-<version>/
i86Linux3gcc4.8.2/release/lib:${LD_LIBRARY_PATH}
```

- g. To verify your installation, enter:

```
openssl version
```



You should see a response similar to:

```
OpenSSL <version>
```

## 4 Installing on Windows Systems

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](#).

1. Install *Secure WAN Transport* on top of *RTI Connexx DDS*. There are two ways to install it: from *RTI Launcher* or from the command line.

### To install from *RTI Launcher*:

- a. Start *RTI Launcher*:

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

- b. From the **Configuration** tab, click on **Install RTI Packages**.
- c. Use the + sign to add the **.rtipkg** file that you want to install.
- d. 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; including placement of the **rtiwanserver** application in <NDDSHOME>\bin.

2. Add *RTI Secure WAN Transport's* **bin** directory to your **Path** environment variable if it is not already included: **%NDDSHOME%\bin**.
3. Add *RTI Secure WAN Transport's* **lib** directory to your **Path** environment variable if it is not already included: **%NDDSHOME%\lib<architecture>**, where <architecture> will match your system architecture.
4. To verify your installation, open a command prompt and enter:

```
rtiwanserver -help
```

You should see a response similar to:

```
Usage: rtiwanserver [options] ...
Options:
-help                               Display this information
-address <string>                   Server address (default: gethostname() output)
-port <integer>                     Server port (default: 3478)
-verbosity <integer>               Log verbosity [0-5] (default: 1-exceptions-)
```

## 5. Install OpenSSL:

- a. Right-click the distribution file and extract the contents in a directory of your choice.
- b. Add the resulting **bin** directory for OpenSSL to your **Path** environment variable. For example, if you install OpenSSL in **c:\rti**, its **bin** will be here:

**c:\rti\openssl-<version>\<architecture>\release\bin**

- c. To verify your installation, open a command prompt and enter:

```
openssl version
```

You should see a response similar to:

```
OpenSSL <version>
```

## 5 Additional Documentation

The following documentation on *Secure WAN Transport* is provided with the *RTI Connex DDS* distribution.

- User's Manual:

**<NDDSHOME>/doc/manuals/connex\_dds/RTI\_ConnexDDS\_CoreLibraries\_User-  
sManual.pdf**

- API Reference HTML documentation:

**<NDDSHOME>/doc/api/connex\_dds/secure\_wan\_transport/index.html**

- Example code:

**<path to examples>/connex\_dds/<language>/hello\_world\_wan**

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