

RTI TLS Support

Core Libraries

Installation Guide

Version 5.2.3



Your systems. Working as one.



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Printed in U.S.A. First printing.
April 2016.

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Installation

RTI® *TLS Support* is an optional product for use with the TCP transport that is included with *RTI Connex™ DDS*. If you choose to use *TLS Support*, it must be installed on top of a *Connex DDS* installation with the same version number; it can only be used on architectures that support TCP transport.

The distribution file uses the naming convention, **rti-tls-*<architecture>*.rtipkg**, where *<architecture>* will match your system architecture. (System architecture names are described in the *RTI Connex DDS Core Libraries Platform Notes*.)

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

To see a simple 'Hello, World' example application that uses TCP and TLS, look in the **hello_world_tcp** and **hello_builtin_tcp** example directories for C. (See [Section 1](#) for the path to the examples.)

1 Paths Mentioned in Documentation

The documentation refers to:

❑ <NDDSHOME>

This refers to the installation directory for *Connex DDS*.

The default installation paths are:

- Mac OS X systems:
/Applications/rti_connex_dds-version
- UNIX-based systems, non-*root* user:
/home/your user name/rti_connex_dds-version
- UNIX-based systems, *root* user:
/opt/rti_connex_dds-version
- Windows systems, user without Administrator privileges:
<your home directory>\rti_connex_dds-version
- Windows systems, user with Administrator privileges:
C:\Program Files\rti_connex_dds-version (for 64-bits machines) or
C:\Program Files (x86)\rti_connex_dds-version (for 32-bit machines)

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_tdds-version\bin\rtiddsgen"
```

or if you have defined the NDDSHOME environment variable:

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

❑ RTI Workspace directory, **rti_workspace**

The RTI Workspace is where all configuration files for the applications and example files are located. All configuration files and examples are copied here the first time you run *RTI Launcher* or any script in <NDDSHOME>/bin. The default path to the RTI Workspace directory is:

- Mac OS X systems:
/Users/your user name/rti_workspace
- UNIX-based systems:
/home/your user name/rti_workspace
- Windows systems:
your Windows documents folder\rti_workspace

Note: '*your Windows documents folder*' depends on your version of Windows.

For example, on Windows 7, the folder is **C:\Users\your user name\Documents**; on Windows Server 2003, the folder is **C:\Documents and Settings\your user name\Documents**.

You can specify a different location for the **rti_workspace** directory. See the *RTI Connex DDS Core Libraries Getting Started Guide* for instructions.

❑ <path to examples>

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

By default, the examples are copied to **rti_workspace/version/examples**

So the paths are:

- Mac OS X systems:
/Users/your user name/rti_workspace/version/examples
- UNIX-based systems:
/home/your user name/rti_workspace/version/examples
- Windows systems:
your Windows documents folder\rti_workspace\version\examples

Note: '*your Windows documents folder*' is described above.

You can specify that you do not want the examples copied to the workspace. See the *RTI Connexx DDS Core Libraries Getting Started Guide* for instructions.

2 Installing on UNIX-Based Systems

All directory locations are meant as examples only; adjust them to suit your site. <NDDSHOME> is described in [Section 1](#).

1. Install *TLS Support* on top of *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 Utilities tab, click on **RTI Package Installer**.

- 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 extract files into the existing **rti_connexx_dds-5.x.y** directory. The package installer will put the TLS libraries in **<NDDSHOME>/lib/<architecture>**.

2. Include **<NDDSHOME>/lib/<architecture>** in your **LD_LIBRARY_PATH** environment variable, if it is not already included. For example (enter this on one line):

```
setenv LD_LIBRARY_PATH
  $<NDDSHOME>/lib/i86Linux2.6gcc4.1.2:${LD_LIBRARY_PATH}
```

3. 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>-sparcSol2.10gcc3.4.2.tar.gz
```

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

```
gtar xvf openssl-<version>-sparcSol2.10gcc3.4.2.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>/sparcSol2.10gcc3.4.2/release/bin`

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

```
setenv PATH
  /local/rti/openssl-<version>/sparcSol2.10gcc3.4.2/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>/
  sparcSol2.10gcc3.4.2/release/lib:${LD_LIBRARY_PATH}
```

- g. To verify your installation, enter:

```
openssl version
```

You should see a response similar to:

```
OpenSSL <version>
```

3 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 [Section 1](#).

1. Install *TLS Support* on top of *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 Utilities tab, click on **RTI Package Installer**.
- 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 extract files into the existing `rti_connexx_dds-5.x.y` directory. The package installer will put the TLS libraries in `<NDDSHOME>\lib\<architecture>`.

2. Add the *TLS Support lib* directory to your **Path** environment variable if it is not already included: `%NDDSHOME%\lib\<architecture>`.
3. 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>
```