

RTI Connex DDS

Installation Guide

Version 6.1.2



© 2022 Real-Time Innovations, Inc.
All rights reserved.
Printed in U.S.A. First printing.
December 2022.

Trademarks

RTI, Real-Time Innovations, Connex, NDDS, the RTI logo, 1RTI 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 solely under and subject to RTI's standard terms and conditions available at <https://www.rti.com/terms> and in accordance with your License Acknowledgement Certificate (LAC) and Maintenance and Support Certificate (MSC), except to the extent otherwise accepted in writing by a corporate officer of RTI.

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/>). 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 or removals noted in this document serve as notice under the Real-Time Innovations, Inc. Maintenance Policy #4220 and/or any other agreements by and between RTI and customer regarding maintenance and support of RTI's software.

Deprecated means that the item is still supported in the release, but will be removed in a future release. *Removed* means that the item is discontinued or no longer supported. By specifying that an item is deprecated in a release, RTI hereby provides customer notice that RTI reserves the right after one year from the date of such release and, with or without further notice, to immediately terminate maintenance (including without limitation, providing updates and upgrades) for the item, and no longer support the item, in a future release.

Technical Support

Real-Time Innovations, Inc.
232 E. Java Drive, Sunnyvale, CA 94089
Phone: (408) 990-7444
Email: support@rti.com
Website: <https://support.rti.com/>

Contents

Chapter 1 Installing RTI Connex DDS	
1.1 Installing a Regular Version	1
1.1.1 Installing on a Linux System	3
1.1.2 Installing on a Windows System	4
1.1.3 Installing on a macOS System	6
1.2 Installing a License-Managed (LM) Version	7
1.2.1 Installing on a Linux System	7
1.2.2 Installing on a Windows System	8
1.2.3 Installing on a macOS System	9
Chapter 2 Paths Mentioned in Documentation	11
Chapter 3 License Management	
3.1 Installing the License File	13
3.2 Adding or Removing License Management	15
Chapter 4 Controlling Location for RTI Workspace and Copying of Examples	16
Chapter 5 Special Backup of RTI Libraries	
5.1 Overwriting Libraries	18
5.2 Installing Add-on Products when Using RTI Tools	18
Chapter 6 Uninstalling Connex DDS	20

Chapter 1 Installing RTI Connex DDS

RTI® Connex® DDS is delivered as static and dynamic libraries with development tools, examples, and documentation that will help you use the libraries.

If you are installing a purchased version of *Connex DDS*, see [1.1 Installing a Regular Version below](#). If you are evaluating *Connex DDS* or using it for research purposes, see [1.2 Installing a License-Managed \(LM\) Version on page 7](#). Note that all LM versions require a license key file to run. All use of both regular and LM versions is subject to RTI's Software License Agreement #4000.

1.1 Installing a Regular Version

Connex DDS distributions are provided in two types of bundles: *hosts* and *targets*.

- A *host* bundle contains non-target-specific files, such as documentation, header files, tools, and infrastructure services executables. The host bundle is provided in a **.run**, **.exe**, or **.dmg** file that will run an installer.

Host bundles are named:

- **rti_connex_dds-<version>-<package_type>-host-<host-platform>.<extension>**

The `<package_type>` is usually **pro**.

Note: The legacy **core** package type does not include all functionality. Please contact your local RTI sales representative or email sales@rti.com for more information.

The `<host_platform>` depends on your development platform: **x64Linux** for Linux® systems, **x64Win64** for Windows® systems, or **darwin** for macOS® systems.

The `<extension>` is **run** for Linux systems, **exe** for Windows systems, or **dmg** for macOS systems.

- A *target* bundle contains libraries and any applications that have target-specific dependencies. A target bundle is an “RTI Package” (*.rtipkg) file that must be installed on top of your host bundle.

Target bundles are named:

- **rti_connex DDS-<version>-<package_type>-target-<target_architecture>.rtipkg**

The <target_architecture> depends on your target machine (where you will deploy your completed application). These strings are listed in the [RTI Connex DDS Core Libraries Platform Notes](#); examples are **x64Win64VS2017** and **x64Linux4gcc7.3.0**.

Note: You may have more than one target bundle if you are developing for multiple targets.

If you are installing a patch release (for example, a 6.1.2.x release), read [Chapter 5 Special Backup of RTI Libraries on page 18](#).

There are two ways to install a *Connex DDS* host bundle:

- using an installer, which will prompt you for information such as where to install, or
- using a script, which allows you to run in "unattended mode" so you will not be prompted for information while it is installing.

Both ways are described below.

Running from a Script (Unattended Mode)

When running in unattended mode, the installer will use default values for its parameters unless you specify them at the command line (see [Table 1.1 Command-Line Options when Installing from a Script](#)).

Table 1.1 Command-Line Options when Installing from a Script

Parameter	Values	Meaning	Default
--mode	win32 gtk xwindows osxqt text [not available on Windows] unattended [all platforms] [not available for "lm" package]	Should the installer display a graphical or a text-based UI? Should the installer ask for user feedback?	GUI available on your platform
--unattendedmodeui	none [not available on Windows] minimal [not available on Windows] minimalWithDialogs [required on Windows if using --mode unattended]	If you chose --mode unattended, how much graphical feedback should the installer display?	none

Parameter	Values	Meaning	Default
--prefix	directory to install into	The installation directory the product will be placed into. Note that the installer will always place the product in a directory named <code>rti_connexx_dds-6.1.2</code> . See Chapter 2 Paths Mentioned in Documentation on page 11	Platform-dependent Windows Example: <code>c:\program files\rti_connexx_dds-6.1.2</code>
--install_spreadsheet_addin [Windows only]	true false	Also install RTI Spreadsheet Add-in?	false
--disable_copy_examples	true false	Should the installer disable the copying of examples into rti_workspace during installation (true) or not (false)?	false

1.1.1 Installing on a Linux System

In these instructions, we assume your host bundle is named **rti_connexx_dds-6.1.2-pro-host-x64Linux.run** and your target bundle is named **rti_connexx_dds-pro-target-6.1.2-x64Linux4gc-c7.3.0.rtipkg**. Your filenames will be different depending on your package type and architecture.

1. Download the host and target bundles to a location of your choice; for example, **/home/<your user name>/Downloads**.
2. Install the host bundle. As described above, you can use an installer or a script:
 - Using the installer:

Run the host bundle installer (the **.run** file). For example:

```
/home/<your user name>/Downloads/rti_connexx_6.1.2-dds-pro-host-x64Linux.run
```

Follow the on-screen prompts. You will be asked if you want to use the default installation directory (**/home/<your user name>**) or specify a different path. We refer to the installation directory as **<NDDSHOME>**, see [Chapter 2 Paths Mentioned in Documentation on page 11](#).

- Using a script:

Run from a command prompt:

```
rti_connexx_dds-6.1.2-<package_type>-host-<host_platform>.run  
--mode unattended --prefix <installation path>
```

The **--prefix** option allows you to specify the installation directory; if you omit this, the installer will install into a default location.

For example (enter on one line):

```
rtdi_connexdds-6.1.2-pro-host-x64Linux.run
--mode unattended --prefix /home/user/rtdi_connexdds-6.1.2
```

3. Install the target bundle(s). There are two ways to do this:

- From *RTI Launcher*:

Start *RTI Launcher* (<NDDSHOME>/bin/rtilauncher), select the **Configuration** tab, and click on **Install RTI Packages**. Add the location of your target file. Click **Install**.

- From the command line:

Open a command prompt and change to the **rtdi_connexdds-6.1.2/bin** directory. Use <NDDSHOME>/bin/rtipkginstall to install the target bundle. For example (enter on one line):

```
rtipkginstall
/home/<your user name>/Downloads/rtdi_connexdds-6.1.2-pro-target-
x64Linux4gcc7.3.0.rtipkg
```

4. Read [Chapter 3 License Management on page 13](#).

After installation:

- From *Launcher*, right-click each icon to access documentation about that component. See the *RTI Launcher User's Manual* (in <NDDSHOME>/doc/manuals/connexdds_professional/tools/launcher).
- See the *RTI Connex DDS Getting Started Guide* (in <NDDSHOME>/doc/manuals/connexdds_professional/getting_started_guide).

1.1.2 Installing on a Windows System

In these instructions, we assume your host bundle is named **rtdi_connexdds-6.1.2-pro-host-x64Win64.exe** and your target bundle is named **rtdi_connexdds-6.1.2-pro-target-x64Win64VS2017.rtipkg**. Your filenames will be different depending on your package type and architecture.

Depending on your version of Windows and where you want to install these files, your user account may or may not require administrator privileges.

1. Download the host and target bundles to a location of your choice; for example, **C:\Users\<your user name>\Downloads**.
2. Install the host bundle. As described above, you can use an installer or a script:

- Using the installer:

From your file explorer, open (double-click) the host bundle installer (the `.exe` file).

Follow the on-screen prompts. You will be asked if you want to use the default installation directory (**C:\Program Files**) or specify a different path.

- Using a script:

Run from a command prompt:

```
rti_connex_t_dds-<version>-<package_type>-host-<host_platform>.exe
--mode unattended --unattendedmodeui minimalWithDialogs --prefix <installation
path>
```

The **--prefix** option allows you to specify the installation directory. If you do not specify a prefix, the installer will install into a default location.

For example (enter on one line):

```
rti_connex_t_dds-6.1.2-pro-host-x64Win64.exe --mode unattended
--unattendedmodeui minimalWithDialogs --prefix c:\program files\rti_connex_t_dds-
6.1.2
```

When running in unattended mode on a Windows system, you must specify **--unattendedmodeui minimalWithDialogs** or the installation will fail.

3. Install the target bundle(s). There are two ways to do this:

- From *RTI Launcher*:

Start *RTI Launcher* (<NDDSHOME>\bin\rtilauncher or from the Windows **Start** menu), select the **Configuration** tab, and click on **Install RTI Packages**. Add the location of your package file. Click **Install**.

- From the command line:

Open a command prompt and change to the **rti_connex_t_dds-6.1.2\bin** directory. Use the **rtipkginstall** batch file to install the target bundle. For example (enter on one line):

```
rtipkginstall C:\Users\<your user name>\Downloads\rti_connex_t_dds-6.1.2-pro-target-
x64Win64VS2017.rtipkg
```

4. Read [Chapter 3 License Management on page 13](#).

After installation:

- From *Launcher*, right-click each icon to access documentation about that component. See the *RTI Launcher User's Manual* (in <NDDSHOME>\doc\manuals\connex_t_dds_professional\tools\launcher).

- See the *RTI Connex DDS Getting Started Guide* (in `<NDDSHOME>\doc\manuals\connex_dds_professional/getting_started_guide`).

1.1.3 Installing on a macOS System

Note: Before installing the host and target bundles on a macOS 11 (Big Sur) system on an Arm v8 CPU, Rosetta® 2 must be installed and enabled. Rosetta 2 is an Apple tool for translating third-party software applications; without it, an error message will display when attempting to install *Connex DDS*. Installation instructions for Rosetta 2 can be found at <https://support.apple.com/en-us/HT211861>. Rosetta 2 is only required during *installation* of the host and target bundles. It is not required at runtime.

In these instructions, we assume your host bundle is named `rti_connex_dds-6.1.2-pro-host-darwin.dmg` and your target bundle is named `rti_connex_dds-6.1.2-pro-target-x64Darwin17clang9.0.rtipkg`. Your filenames will be different depending on your package type and architecture.

1. Download the host and target bundles to a location of your choice; for example, `/Users/<your user name>/Downloads`.
2. Double-click on the host bundle `.dmg` file. You should see a screen appear.
3. Double-click on the icon in the screen to run the installer application.
4. Follow the on-screen prompts. You will be asked if you want to use the default installation directory (`/Applications/rti_connex_dds-6.1.2`) or specify a different path. Note that the installer will always place the product inside a folder named `rti_connex_dds-6.1.2`. We refer to the installation directory as `<NDDSHOME>`, see [Chapter 2 Paths Mentioned in Documentation on page 11](#).
5. Install the target bundle(s). There are two ways to do this:

- From *RTI Launcher*:

Start *RTI Launcher* (`<NDDSHOME>/RTI Launcher`), select the Configuration tab, and click on **Install RTI Packages**. Add the location of your target file. Click **Install**.

- From the command line:

Open a command prompt and change to the `rti_connex_dds-6.1.2/bin` directory. Use `<NDDSHOME>/bin/rtipkginstall` to install the target bundle. For example (enter on one line):

```
rtipkginstall /Users/<your user name>/Downloads/rti_connex_dds-6.1.2-pro-target-x64Darwin17clang9.0.rtipkg
```

6. Read [Chapter 3 License Management on page 13](#).

After installation:

- From *Launcher*, right-click each icon to access documentation about that component. See the *RTI Launcher User's Manual* (in <NDDSHOME>/doc/manuals/connext_dds_professional/tools/launcher).
- See the *RTI Connext DDS Getting Started Guide* (in <NDDSHOME>/doc/manuals/connext_dds_professional/getting_started_guide).

1.2 Installing a License-Managed (LM) Version

In addition to *Connext DDS Professional*, the LM package includes [RTI Real-Time WAN Transport](#), [RTI Cloud Discovery Service](#), [RTI Security Plugins](#), and OpenSSL® version 1.1.1n. (The installer provides 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/>.)

LM distributions usually combine the *host* and *target* in a single bundle, named after the *target*. For example, `rti_connext_dds-6.1.2-lm-x64Win64VS2017.exe` combines the `x64Win64` *host* with the `x64Win64VS2017` *target* in a single `lm` bundle. The target architecture depends on your target machine where you will deploy your completed application. These strings are listed in the [RTI Connext DDS Core Libraries Platform Notes](#); examples are `x64Win64VS2017` and `x64Linux4gcc7.3.0`.

Some LM distributions require you to install two bundles:

- A combined host/target bundle (`.run`, `.exe`, or `.dmg`), such as `rti_connext_dds-6.1.2-lm-x64Linux4gcc7.3.0.run`.
- A separate LM target package (`.rtipkg`) for the specific target architecture.

For example, suppose your target machine uses Ubuntu 18.04 LTS on an Arm v8 CPU. RTI does not currently provide a combined LM host/target bundle for this architecture. So first you would install an LM bundle for any Linux architecture, then install the LM target package for your Ubuntu 18.04 LTS target on an Arm v8 CPU. The instructions below explain how.

1.2.1 Installing on a Linux System

1. Download the LM bundle (for example: `rti_connext_dds-6.1.2-lm-x64Linux4gcc7.3.0.run`) to a location of your choice; for example, `/home/<your user name>/Downloads`.
2. Run the LM bundle installer (the `.run` file). For example:

```
/home/<your user name>/Downloads/rti_connext_dds-6.1.2-lm-x64Linux4gcc7.3.0.run
```

Follow the on-screen prompts. You will be asked if you want to use the default installation directory (`/home/<your user name>`) or specify a different path. We refer to the installation directory as <NDDSHOME>, see [Chapter 2 Paths Mentioned in Documentation on page 11](#).

3. If your target architecture does not have an Arm CPU, skip this step.

For Linux targets with an Arm CPU, you also need to install an LM target package. This package will have “**lm-target-arm**” in the filename and the architecture will start with “**arm**”. You can install it on top of any LM bundle for a Linux architecture. That is, the **.run** file and the **.rtipkg** file do not have to use the same Linux architecture string. For example, you can install **rtdi_connex_dds-6.1.2-lm-target-armv8Linux4gcc7.3.0.rtipkg** on top of **rtdi_connex_dds-6.1.2-lm-x64Linux4gcc7.3.0.run**.

There are two ways to install the LM target package:

- From *RTI Launcher*:

Start *RTI Launcher* (<NDDSHOME>/bin/rtilauncher), select the **Configuration** tab, and click on **Install RTI Packages**. Add the location of your target file. Click **Install**.

- From the command line:

Open a command prompt and change to the **rtdi_connex_dds-6.1.2/bin** directory. Use <NDDSHOME>/bin/rtipkginstall to install the target bundle. For example (enter on one line):

```
rtipkginstall
/home/<your user name>/Downloads/rtdi_connex_dds-6.1.2-lm-target-
armv8Linux4gcc7.3.0.rtipkg
```

4. Read [Chapter 3 License Management on page 13](#).

After installation:

- From *Launcher*, right-click each icon to access documentation about that component. See the *RTI Launcher User's Manual* (in <NDDSHOME>/doc/manuals/connex_dds_professional/tools/launcher).
- See the *RTI Connex DDS Getting Started Guide* (in <NDDSHOME>/doc/manuals/connex_dds_professional/getting_started_guide).

1.2.2 Installing on a Windows System

Depending on your version of Windows and where you want to install these files, your user account may or may not require administrator privileges.

1. Download the LM bundle (for example: **rtdi_connex_dds-6.1.2-lm-x64Win64VS2017.exe**) to a location of your choice; for example, **C:\Users\<your user name>\Downloads**.
2. Install the LM bundle:

From your file explorer, open (double-click) the LM bundle installer (the **.exe** file).

Follow the on-screen prompts. You will be asked if you want to use the default installation directory (**C:\Program Files**) or specify a different path.

3. Read [Chapter 3 License Management on page 13](#).

After installation:

- From *Launcher*, right-click each icon to access documentation about that component. See the *RTI Launcher User's Manual* (in <NDDSHOME>\doc\manuals\connext_dds_professional\tools\launcher).
- See the *RTI Connext DDS Getting Started Guide* (in <NDDSHOME>\doc\manuals\connext_dds_professional/getting_started_guide).

1.2.3 Installing on a macOS System

Note: Before installing an LM bundle on a macOS 11 (Big Sur) system on an Arm v8 CPU, Rosetta® 2 must be installed and enabled. Rosetta 2 is an Apple tool for translating third-party software applications; without it, an error message will display when attempting to install *Connext DDS*. Installation instructions for Rosetta 2 can be found at <https://support.apple.com/en-us/HT211861>. Rosetta 2 is only required during *installation* of the host and target bundles. It is not required at runtime.

1. Download the LM bundle (for example: **rti_connext_dds-6.1.2-lm-x64Darwin17clang9.0.run**) to a location of your choice; for example, **/Users/<your user name>/Downloads**.
2. Double-click on the host bundle **.dmg** file. You should see a screen appear.
3. Double-click on the icon in the screen to run the installer application.
4. Follow the on-screen prompts. You will be asked if you want to use the default installation directory (**/Applications/rti_connext_dds-6.1.2** or specify a different path. Note that the installer will always place the product inside a folder named **rti_connext_dds-6.1.2**. We refer to the installation directory as <NDDSHOME>, see [Chapter 2 Paths Mentioned in Documentation on page 11](#)).
5. If your target architecture does not have an Arm CPU, skip this step.

For macOS targets with an Arm CPU, you also need to install an LM target package. This package will have “**lm-target**” in the filename and the architecture will start with “**arm**”. You can install it on top of any LM bundle for a macOS architecture. That is, the **.dmg** file and the **.rtipkg** file do not have to use the same macOS architecture string. For example, you can install **rti_connext_dds-6.1.2-lm-target-arm64Darwin20clang12.0.rtipkg** on top of **rti_connext_dds-6.1.2-lm-x64Darwin17clang9.0.dmg**.

There are two ways to install the LM target package:

- From *RTI Launcher*:

Start *RTI Launcher* (<NDDSHOME>/**RTI Launcher**), select the Configuration tab, and click on **Install RTI Packages**. Add the location of your target file. Click **Install**.

- From the command line:

Open a command prompt and change to the **rti_connex_dds-6.1.2/bin** directory. Use <NDDSHOME>/**bin/rtipkginstall** to install the target bundle. For example (enter on one line):

```
rtipkginstall /Users/<your user name>/Downloads/rti_connex_dds-6.1.2-lm-  
target-arm64Darwin20clang12.0.rtipkg
```

6. Read [Chapter 3 License Management on page 13](#).

After installation:

- From *Launcher*, right-click each icon to access documentation about that component. See the *RTI Launcher User's Manual* (in <NDDSHOME>/**doc/manuals/connex_dds_professional/tools/launcher**).
- See the *RTI Connex DDS Getting Started Guide* (in <NDDSHOME>/**doc/manuals/connex_dds_professional/getting_started_guide**).

Chapter 2 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-6.1.2
- Linux systems, non-*root* user:
/home/<your user name>/rti_connex_dds-6.1.2
- Linux systems, *root* user:
/opt/rti_connex_dds-6.1.2
- Windows® systems, user without Administrator privileges:
<your home directory>\rti_connex_dds-6.1.2
- Windows systems, user with Administrator privileges:
C:\Program Files\rti_connex_dds-6.1.2

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\rtdi_connext_dds-6.1.2\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/6.1.2/examples**
- Linux systems: **/home/<your user name>/rti_workspace/6.1.2/examples**
- Windows systems: **<your Windows documents folder>\rti_workspace\6.1.2\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 [Chapter 4 Controlling Location for RTI Workspace and Copying of Examples on page 16](#).

Chapter 3 License Management

There's a distinction between a license *file* and a *license*. When you buy an RTI product, like the Professional package, you are *licensed* to use it.

Tools like *RTI Admin Console*, which are included in the Professional package, additionally require a license *file* in order to run. A license *file* is never required to deploy your system in production. LM (license-managed) bundles are not for production and require a license *file*.

If your *Connex DDS* distribution requires a license file, you will receive one from RTI via email.

This section describes how to manage a license *file*. If you have more than one license file from RTI, you can concatenate them into one file. A single license file can be used to run on any architecture and is not node-locked. You are not required to run a license server.

3.1 Installing the License File

Save the license file in any location of your choice; the locations checked by the middleware are listed below.

You can also specify the location of your license file in *RTI Launcher's Configuration* tab. Then *Launcher* can copy the license file to the installation directory or to the user workspace.

Each time your *Connex DDS* application starts, it will look for the license file in the following locations until it finds a valid license:

1. In the PropertyQosPolicy of the *DomainParticipant*, there may be a property called **dds.license.string**. (Only if you have a license-managed, or "lm," version of *Connex DDS Professional*.) The value for this property can be set to the content of a license file. (This may be necessary if a file system is not supported on your platform.) You can set the property either in source code or in an XML file. An XML file example is shown below:

```

<domain_participant_qos>
  <property>
    <value>
      <element>
        <name>dds.license.license_string</name>
        <value>contents of license file</value>
      </element>
    </value>
  </property>
</domain_participant_qos>

```

If the content of the license file is in XML, special characters for XML need to be escaped in the license string. Special characters include: quotation marks (") (replace with `"`), apostrophes (') (replace with `'`), greater-than (>) (replace with `>`), less-than (<) (replace with `<`), and ampersands (&) (replace with `&`).

2. In the `PropertyQosPolicy` of the `DomainParticipant`, there may be a property called `dds.license.license_file`. (Only if you have a license-managed, or "lm," version of *Connex DDS Professional*.) The value for this property can be set to the location (full path and filename) of a license file. (This may be necessary if a default license location is not feasible and environment variables are not supported.) You can set the property either in source code or in an XML file.

Example XML to set `dds.license.license_file`:

```

<domain_participant_qos>
  <property>
    <value>
      <element>
        <name>dds.license.license_file</name>
        <value>path to license file</value>
      </element>
    </value>
  </property>
</domain_participant_qos>

```

3. In the location specified in the environment variable `RTI_LICENSE_FILE`, which you may set to point to the full path of the license file, including the filename.

Note: When you run any of the scripts in the `<NDDSHOME>/bin` directory, this automatically sets the `RTI_LICENSE_FILE` environment variable (if it isn't already set) prior to calling the executable. It looks for the license file in two places: your `rti_workspace` directory and the installation directory (`NDDSHOME`). (See [Chapter 2 Paths Mentioned in Documentation on page 11](#).)

4. If you are running any of the tools/services as executables via `NDDSHOME/bin/<executable script>` or through *Launcher*:
 - In your `rti_workspace/<version>` directory, in a file called `rti_license.dat`.

- In your `rti_workspace` directory, in a file called **`rti_license.dat`**.
 - In `<NDDSHOME>` (the *Connex DDS* installation directory), in a file called **`rti_license.dat`**.
5. If you are running your own application linked with *Connex DDS* libraries:
- In your current working directory, in a file called **`rti_license.dat`**.
 - In `<NDDSHOME>` (the *Connex DDS* installation directory), in a file called **`rti_license.dat`**.

As *Connex DDS* attempts to locate and read your license file, you may (depending on the terms of the license) see a printed message with details about your license.

If the license file cannot be found or the license has expired, your application may be unable to initialize *Connex DDS*, depending on the terms of the license. If that is the case, your application's call to **`DomainParticipantFactory.create_participant()`** will return null, preventing communication.

If you have any problems with your license file, please email support@rti.com.

3.2 Adding or Removing License Management

If you are using a package type that requires a license file and your license file changes—for example, you receive a new license for a longer term than your original license—you do not need to reinstall *Connex DDS*.

However, if you switch from a license-managed distribution of *Connex DDS* to one of the same version that does not require license management, or vice versa, RTI recommends that you first uninstall your original distribution before installing your new distribution. Doing so will prevent you from inadvertently using a mixture of libraries from multiple installations.

Chapter 4 Controlling Location for RTI Workspace and Copying of Examples

By default, the **rti_workspace** directory is created here:

- Linux systems: **/home/<your user name>/rti_workspace**
- macOS systems: **/Users/<your user name>/rti_workspace**
- Windows systems: **<your Windows documents folder>\rti_workspace**

Here's how to specify a different location for **rti_workspace** and/or disable copying the examples into the workspace.

Linux and macOS systems:

- To configure the behavior for *all* users, edit **<NDDSHOME>/resource/scripts/rticommon_config.sh**.
- To configure the behavior for the *current* user (takes precedence), create **\$HOME/.rti/rticommon_config.sh** as follows:

```
# Customize RTI Workspace Directory and Copy Behavior
#####
# copy_examples=false
# workspace_dir=$HOME/rti_workspace
```

Uncomment the line(s) that you want to use (remove the #).

Windows systems:

- To configure the behavior for *all* users, edit **<NDDSHOME>\resource\scripts\rticommon_config.bat**.

- To configure the behavior for the *current* user (takes precedence), create **<your home directory>\rti\rticommon_config.bat** as follows:

```
@REM Customize RTI Workspace Directory and Copy Behavior
@REM #####
@REM set copyExamples=false
@REM set "workspaceDir=C:\Users\%USERNAME%\Documents\rti_workspace"
```

Uncomment the line(s) that you want to use (delete "@REM" at the start of the line).

Chapter 5 Special Backup of RTI Libraries

The following information applies if you are installing a patch release (a release with four digits, such as 6.1.2.1) into an existing installation directory. It does not apply if you are installing a patch release into a new directory. See the instructions that come with your patch release to know whether it's okay to install into an existing directory or you should install into a new one. You should almost never install a three-digit release into an existing installation directory.

5.1 Overwriting Libraries

When installing a new RTI package that overwrites a given library in the `<NDDSHOME>/lib/<architecture>` directory, the installer will copy the library from the `<NDDSHOME>/lib/<architecture>` directory to the `<NDDSHOME>/lib/<architecture>/<current_installed_version>` directory. This copy will serve as a backup.

For example, if you install patch version 6.1.2.1 to the RTI core libraries for x64Win64VS2017, your overwritten core 6.1.2 libraries will be copied into the following directory before the 6.1.2.1 libraries are installed: `<NDDSHOME>/lib/x64Win64VS2017/6.1.2`.

If you install another patch later, before the 6.1.2.1 libraries are overwritten, then the 6.1.2.1 libraries will be copied into `<NDDSHOME>/lib/x64Win64VS2017/6.1.2.1`.

5.2 Installing Add-on Products when Using RTI Tools

RTI Tools commonly rely on the backup directory, so it is important to make sure its contents are correct, especially when you are using add-on products, such as *RTI Security Plugins*. To ensure the backup contents are correct, do the following:

Before installing a new patch (e.g., 6.1.2.1) that contains an add-on product, such as *Security Plugins*, always install the base version (e.g., `rti_security_plugins-6.1.2-host-<arch>.rtipkg`) of the add-on product, if you haven't already, before installing the patch release version (e.g., `rti_security_plugins-6.1.2.1-host-<arch>.rtipkg`).

Installing the base version first ensures that when RTI Tools (such as *RTI Admin Console*, *RTI Monitor*, and *RTI System Designer*) are not part of the patch release (they usually are not), they keep using the base libraries they are built with instead of the patched libraries. You will receive an error otherwise.

(The RTI tool will look for the base libraries in the backup directory, such as **<NDDSHOME>/resource/app/lib/x64Win64VS2017/6.1.2**. But that backup directory either will not exist or will not contain all of the necessary base libraries if you didn't install the base version packages first. The tool will then look for the library in the patched directory. But if the patched library uses a function that is not implemented in the core library in the backup directory, an error occurs.)

Chapter 6 Uninstalling Connex DDS

To uninstall *Connex DDS*, run the uninstaller application.

- On Windows platforms:

If available from the Start Menu, run the uninstaller by clicking on the **Uninstall RTI Connex DDS <package>** option. Note that this is not available from the menu on Windows 8 systems. Alternatively, use Add/Remove Programs from the Windows Control Panel to uninstall *Connex DDS*, or run the application from the <NDDSHOME>\uninstall directory.

- On other platforms:

Run the uninstaller from the <NDDSHOME>/uninstall directory.

Note: The uninstaller does not delete the **rti_workspace** directory. To delete all RTI files, delete the **rti_workspace** directory in your home directory. (See [Chapter 2 Paths Mentioned in Documentation on page 11.](#))