



HCL RTist

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# RTist 10.3 Installation Instructions

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# 1 Introduction

This document guides you through the installation of HCL RTist (*RTist*). It covers three different installation scenarios:

- An interactively performed local installation in [section 2](#)
- A command line based installation suitable for scripting in [section 3](#)
- An installation based on the Eclipse Installer in [section 4](#)

To follow the instructions in this document and successfully install RTist 10.3 you will need the following:

- An installation of **Eclipse IDE for C/C++ Developers** for Eclipse Photon. This can be downloaded from <https://www.eclipse.org/downloads/packages/release/Photon>. If you use the Eclipse installer it will be downloaded automatically.
- Access to a repository containing the RTist update site. This can either be a locally downloaded zip file or the address of a shared repository that has been preconfigured for your usage.  
You can download the RTist update site zip file from the [HCL FlexNet Operations web site](#).
- A valid license. This can either be provided by means of a license server that contains RTist licenses, or it can be a license key (permanent or trial) which you have obtained from HCL.
- An installation of a Java 8 development kit (JDK) 64 bit. RTist 10.3 does not work with Java 7 or older one. We recommend to use the Open JDK. Use Open JDK 8 202 Hotspot 64-bit or later (<https://adoptopenjdk.net/releases.html?variant=openjdk8>).

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## 2 Installing from Eclipse workbench

Here we describe how to install RTist as an update site on top of Eclipse Photon (4.8) using the Eclipse graphical user interface. The sections that follow will cover how to install it from the command line or using the Eclipse installer.

**NOTE:** Some of the screen shots below were generated on the Windows platform for an older version of RTist, and will therefore differ slightly when installing the latest version of RTist 10.3 and when installing on Linux.

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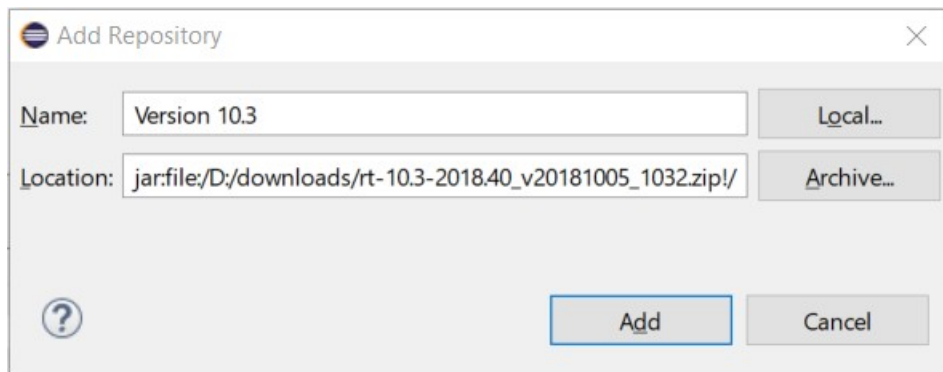
### 2.1 Install

**NOTE:** You must have sufficient administration rights so that the OS will allow you to write the files to the installation directory of Eclipse for installing all features of RTist.

**NOTE:** If you don't have rights to write the files to the installation directory of Eclipse follow instructions from section [5.3.Read-Only Installation](#).

**NOTE:** RTist can be installed on top of many Eclipse distributions, but we recommend to use “Eclipse IDE for C/C++ Developers”.

1. Start Eclipse.
2. Choose the **Install New Software...** command from the **Help** menu.
3. Press the **Add...** button and enter the location of the RTist update site. If the update site is located on a server, you can directly type its URL in the **Location** field. If instead you have it as a ZIP file in the file system, press the **Archive...** button and select it. If the ZIP file already was unpacked to a folder, you should instead use the **Local...** button and select the folder. You can give a meaningful name to the repository in case you want to install from it again in the future. For example:

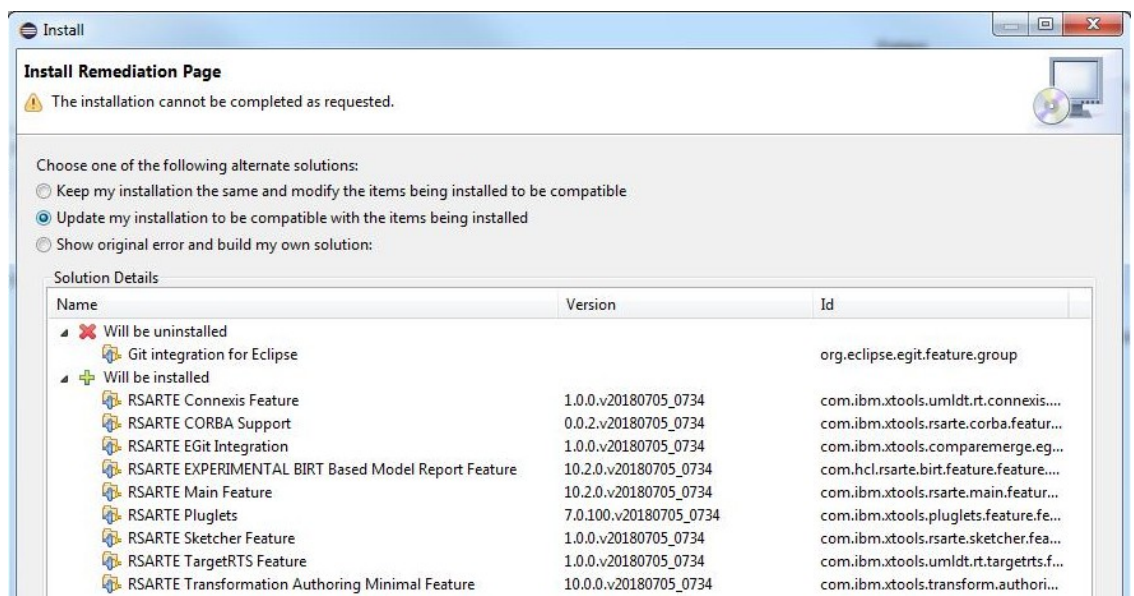


**NOTE:** The Rtist update site is located inside the installation ZIP file, so you need to first unzip that ZIP file. The update site is called `rtist-10.3-<version>-product.zip`.

4. Select the added repository in the **Work with** drop down list. A list of RTist installation categories will be shown in the list below. It will look something like this (which categories that are available depends on the exact version of RTist):  
Under each installation category you can see the features it contains. You can select individual features to install, but commonly you will select only the top-level categories.  
The core RTist functionality is contained in the **RTist Core** category. All other categories contain optional additional functionality which you may or may not choose to install depending on your needs.

5. Select **RTist Core** and any of the other optional categories you want to install. Press **Next**.

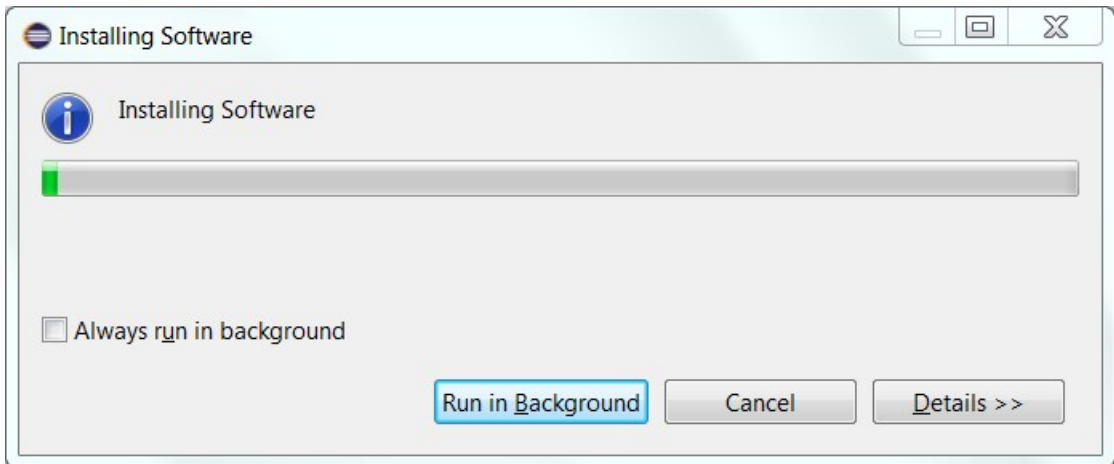
- **NOTE:** If you get errors at this step double check that you run with sufficient privileges to be able to make updates to the system and files. (On Windows you may need to start Eclipse using the “Run As Administrator” command and on Linux with root rights).
- **NOTE:** Depending on what Eclipse distribution you use, some Eclipse plugins which RTist requires may be missing. Such plugins must be downloaded during the installation. To allow this to happen automatically you must select the checkbox **Contact all update sites during install to find required software** and add <http://download.eclipse.org/releases/photons> to the list of available software sites (*Preferences – Install/Update – Available Software Sites*). If your machine does not have internet access, please follow the instructions given in the chapter [Installing without Internet Access](#).
- **NOTE:** If you choose to install the RTist EGit Integration into an Eclipse installation that already contains a version of EGit that is different than the version included in the RTist EGit Integration, you will be informed with a page similar to the one shown below. You should then choose the option to update your installation to be compatible with the items being installed. This will automatically uninstall the existing EGit feature, before installing the RTist EGit Integration.



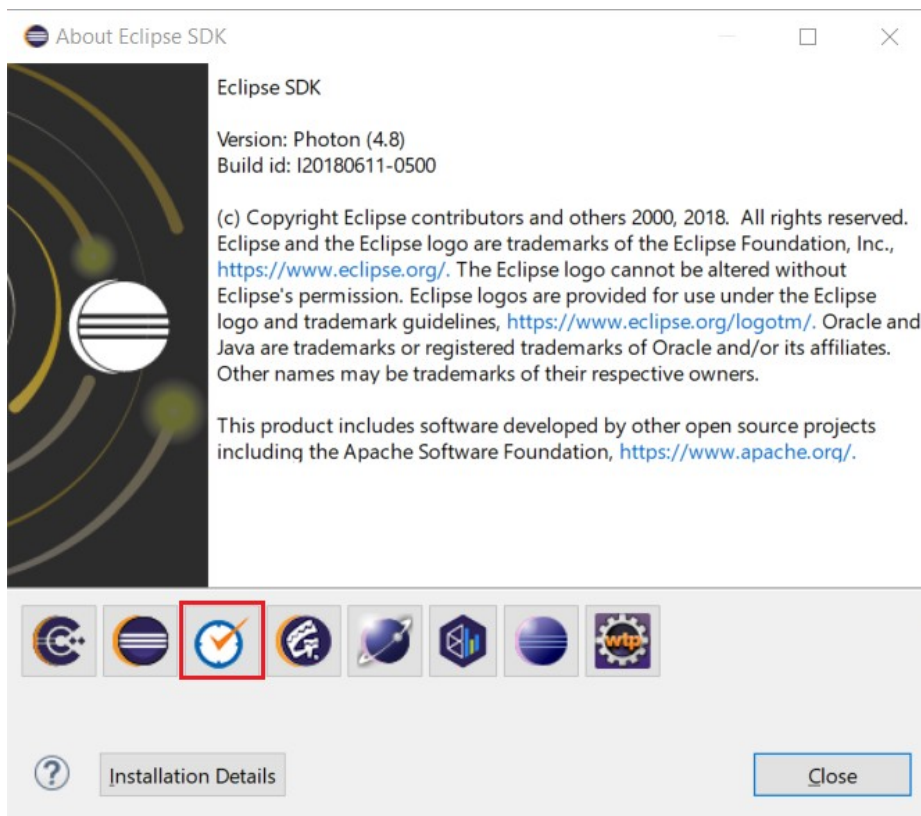
6. If you already had an older version of RTist 10.3 installed, you will get an **Install Details** page with a message that “Your original request has been modified”. This is just information that Eclipse detected an old version of RTist which it will update. See chapter 2.3 for more information. Just press **Next** to proceed.

7. A final **Review Licenses** page will now be shown. If you accept the license agreements, click the appropriate button and then **Finish**.

8. The installation will now start. This can take several minutes so please be patient.

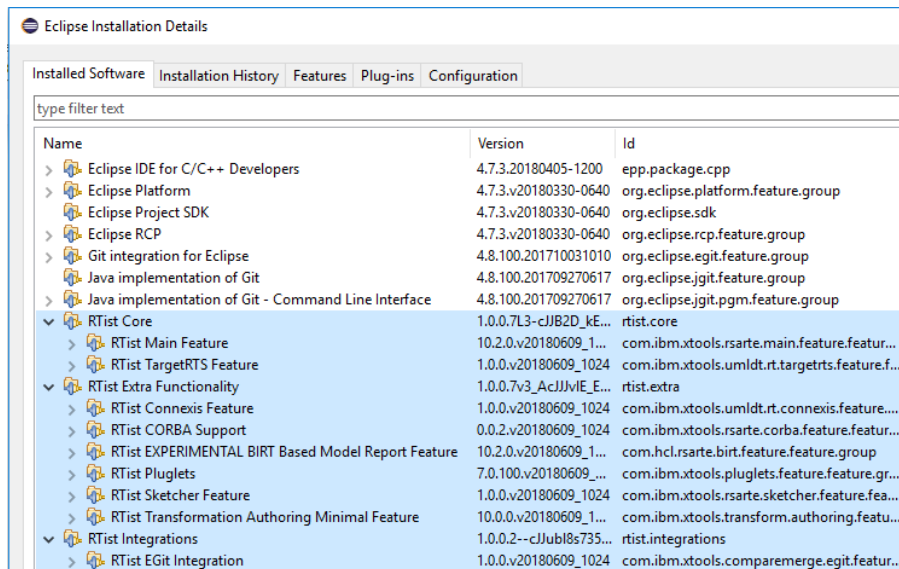


9. After the installation is complete, you will be asked to restart Eclipse. Answer **Yes**. You are not encouraged to try to use RTist without first restarting Eclipse.
  - **NOTE:** The first start-up of RTist can take a long time, especially if you installed it on top of another Eclipse distribution than “Eclipse IDE for C/C++ Developers”. The reason is that all downloaded plugins must be reconciled with already existing Eclipse plugins, and this can take a significant amount of time. Subsequent start-up times will be much faster.
10. When Eclipse has started again you can confirm that RTist was successfully installed. Open the **About** dialog and locate the RTist icon:



11. Click the button to view the installed version of RTist and release.

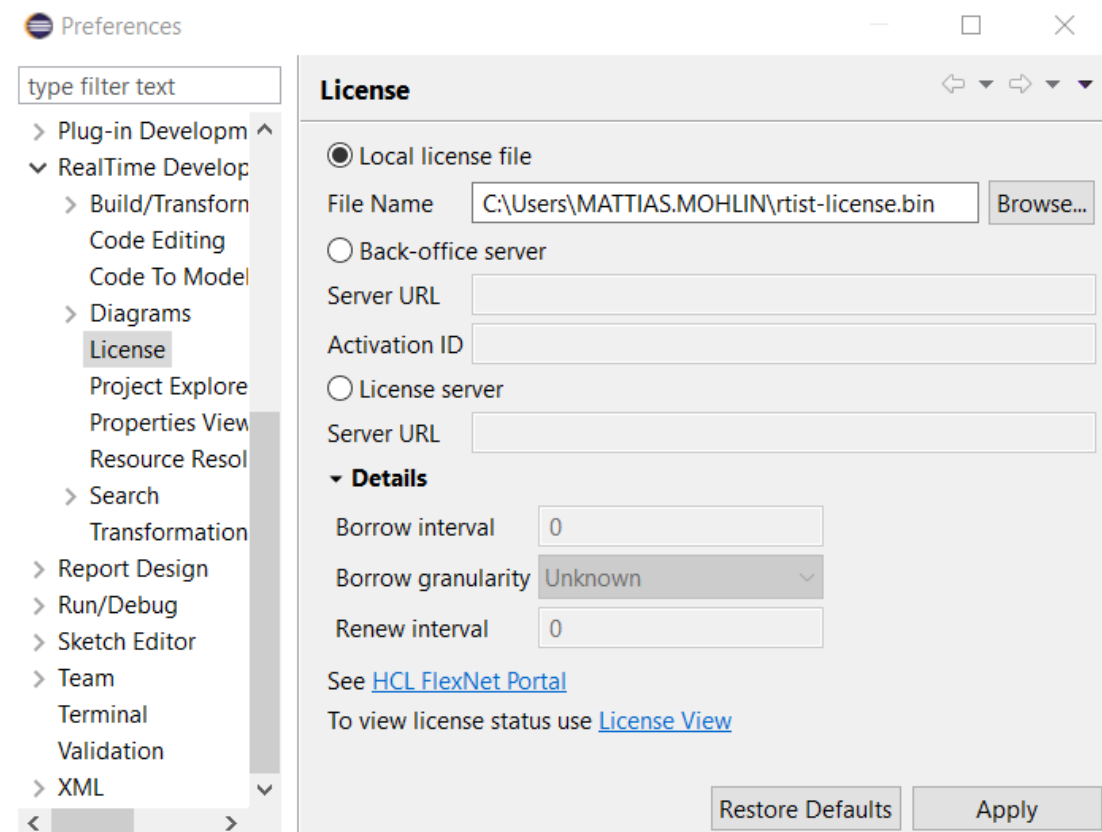
You can also find the installed RTist features if you press the **Installation Details** button in the About dialog, and then click the **Installed Software** tab. (The feature names selected below belong to RTist).



## 2.2 License Setup

RTist can start without having a license, but you will not be able to do much before you have applied a valid license.

Use the preference page *RealTime Development – License* to apply a license.



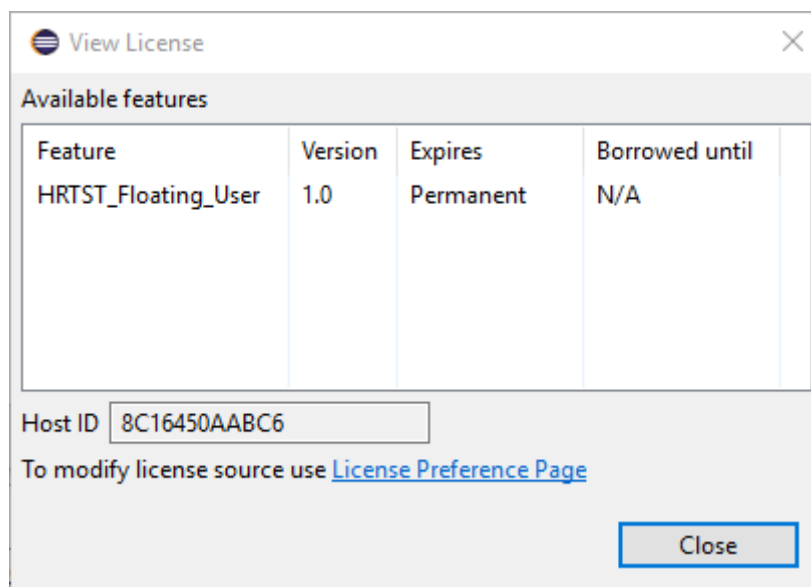
There are three ways to specify the license:

- **Local license file**  
If you have a local license file (usually with the extension .bin) you can specify it here.
- **Back-office server**  
If your organization has a “back-office” server at FlexNet Operations, specify the URL to the FlexNet Operations server (<https://hclsoftware.flexnetoperations.com/flexnet/deviceservices>). You must then also specify the Activation ID that describes your license entitlement.
- **License server**  
This could either be the URL of a locally set-up license server, or a FlexNet Operations cloud license server. The URL of the latter is <https://hclsoftware.compliance.flexnetoperations.com/instances/<instID>/request> where <instID> is the server instance ID.

Under **Details** you can specify detailed settings for how RTist should acquire and return its licenses when a license server is used. By default RTist attempts to acquire a license as soon as you use any tool feature that requires a license, for example when opening a model or running the model compiler. The acquired license will then be kept until the end of the day. This scheme is appropriate for a scenario when there are enough many licenses available in the license server to allow each user to have their own license which they acquire once for each day they work with RTist. The time during which the license is kept by RTist is called the **Borrow interval** (the license is "borrowed" from the license server for some time). Together with the **Borrow granularity** it decides when it is time to return the license to the license server, so that someone else can use it. For the scenario when multiple users need to use the same license on different occasions during the same day you can set a custom borrow interval. Specify the number of seconds that the acquired license should be borrowed from the server, and set an appropriate borrow granularity (a time unit such as Second, Minute or Hour). When the borrow interval has passed, at the start of the next time unit, the license will be returned to the license server, and it can then be used by someone else.

To avoid that the license is returned while you are currently working in RTist and still need the license, you can specify a **Renew interval**. This is also specified in seconds and is a "heartbeat" interval at which the current license will be renewed. Therefore the renew interval should be shorter than the borrow interval. When a renew interval has been set the license is periodically renewed until you close RTist. Hence you avoid the risk of losing the license while still working with the tool.

Click the **License View** hyperlink to view the current license status.



You can also open this dialog by means of the command *Help – View License...*

**NOTE:** To manage your RTist licenses (and licenses for other HCL products) go to <https://hclsoftware.flexnetoperations.com/flexnet/operationsportal/logon.do>. You can click the hyperlink [HCL FlexNet portal](#) on the preference page to open this web page.



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## 2.3 Update

If your Eclipse already contains a version of RTist, you can update it to a later version. The steps you follow then are the same as described above. The only difference is that you will get a message telling you that some or all of the selected RTist features are already installed, and that an update will be performed.

It is normally not necessary to uninstall the old version of RTist before installing the new version.

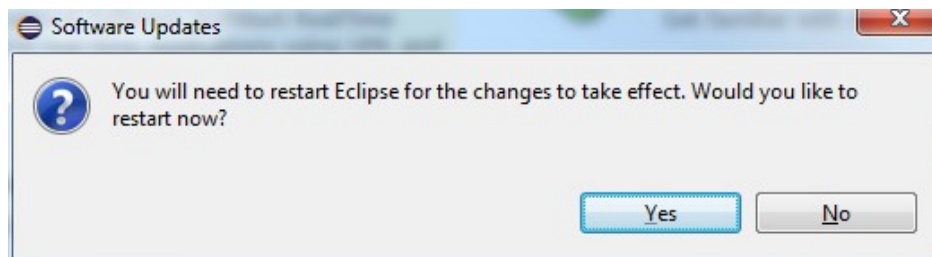
If you are installing from a repository that is being updated with new releases of RTist you can also update your local installation using the Eclipse command **Check for Updates** in the **Help** menu.

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## 2.4 Uninstall

You can uninstall RTist from the **About** dialog. Press the **Installation Details** button and then go to the **Installed Software** tab.

1. Select all lines starting with "RTist"
  - **NOTE:** In case RTist was installed from the command line (as described in the next chapter), you may see products grouped by several RTist categories. In this case just select all top RTist categories.
2. Press the **Uninstall...** button and then **Finish**.
3. After RTist has been uninstalled, you will be asked to restart Eclipse. Accept it by pressing **Yes**.



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## 3 Installing from command line

Installation from the command-line makes use of the P2 director application which is part of Eclipse. There are two ways to invoke this application:

### 1. Using Java

```
java -jar <eclipse_install_plugin_dir>/  
org.eclipse.equinox.launcher_1.5.0.v20180512-1130.jar -application org.ec-  
lipse.equinox.p2.director
```

For example, on Windows it may look like this (exact version number of the JAR file may differ):

```
java -jar C:\eclipseCppPhoton\eclipse\plugins\  
org.eclipse.equinox.launcher_1.5.0.v20180512-1130.jar -application org.ec-  
lipse.equinox.p2.director
```

### 2. Using Eclipse

```
eclipse -nosplash -application org.eclipse.equinox.p2.director
```

On Windows, use `eclipsec.exe` instead for better performance.

In the examples below we use `<p2_director>` to refer to one of the above ways to launch the P2 director application.

**NOTE:** The same prerequisites regarding running with sufficient privileges apply when using the P2 director application for installing RTist.

The RTist update site is a mandatory argument in all invocations of the P2 director application. You specify it using the `-repository` command-line argument. For example, on Windows it can look like this:

```
<p2_director> -repository jar:file:d:\downlds\rtist-10.3-2018.33_v20180807_1102.zip!/  
/
```

Depending on what action you want to perform, you will use additional arguments to the P2 director application, as described in the sections below.

---

### 3.1 Install

Make sure to use an installation of Eclipse that has no RTist installed. If RTist is already installed you should uninstall it (see chapter 3.2) before installing a new RTist version.

Use the below command for installing all RTist categories:

```
<p2_director> -repository <rtist_update_site> -installIU  
rtist.core,rtist.extra,rtist.integrations -r http://download.eclipse.org/releases/  
photon
```

The category identifiers are given after the `-installIU` argument. See chapter 3.3 for how to extract the identifiers for available categories from the update site.

**NOTE:** If you install the RTist EGit Integration (by specifying the `rtist.integrations` category), you will get an error if the Eclipse installation already contains a version of EGit that is different than the version included in the RTist EGit Integration. In this case you first need to uninstall EGit from Eclipse, before installing RTist. Use a command similar to this one for uninstalling EGit:

```
<p2_director> -uninstallIU org.eclipse.git.feature.group
```

---

### 3.2 Uninstall

The command for uninstalling all features is:

```
<p2_director> -repository <rtist_update_site> -uninstallIU  
rtist.core,rtist.extra,rtist.integrations
```

where the category identifiers are given after the `-uninstallIU` argument. See chapter 3.3 for how to extract the identifiers for available categories from the update site.

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### 3.3 Extract identifiers for install categories

The command for extracting the identifiers of available categories in the RTist update site is:

#### Windows:

```
<p2_director> -repository <rtist_update_site> -list | findstr "rtist." | findstr /V  
"com.ibm.xtools." | findstr /V "com.hcl."
```

#### Linux:

```
<p2_director> -repository <rtist_update_site> -list | grep "rtist." | grep -v  
"com.ibm.xtools." | grep -v "com.hcl."
```

The interesting lines in the result will look like the following (the qualifiers may be different):

```
rtist.core=1.0.0.7J--cJJICl8s735E3939M5I3I  
rtist.extra=1.0.0.7H-_AcJJB0KDUUEMz0EcEdTNDFD  
rtist.integrations=1.0.0.2--cJJJgl8s735E3939M5I3I
```

The category identifier is the name before the equal sign.

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## 4 Installing using the Eclipse Installer

The Eclipse Installer is a tool suitable for automating Eclipse based installations. You can find more information about the Eclipse Installer at [https://wiki.eclipse.org/Eclipse\\_Installer](https://wiki.eclipse.org/Eclipse_Installer). This page also contains instructions on how to download and install the Eclipse Installer.

**NOTE:** You must use version 1.4.0 or later of the Eclipse Installer. Installation errors will occur if you attempt to install RTist with an older version of the installer.

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### 4.1 Basic usage of the Eclipse Installer

Using the Eclipse Installer to install RTist requires a setup file that specifies what should be installed. The minimal setup file for an RTist 10.3 installation that installs all RTist features, is the following:

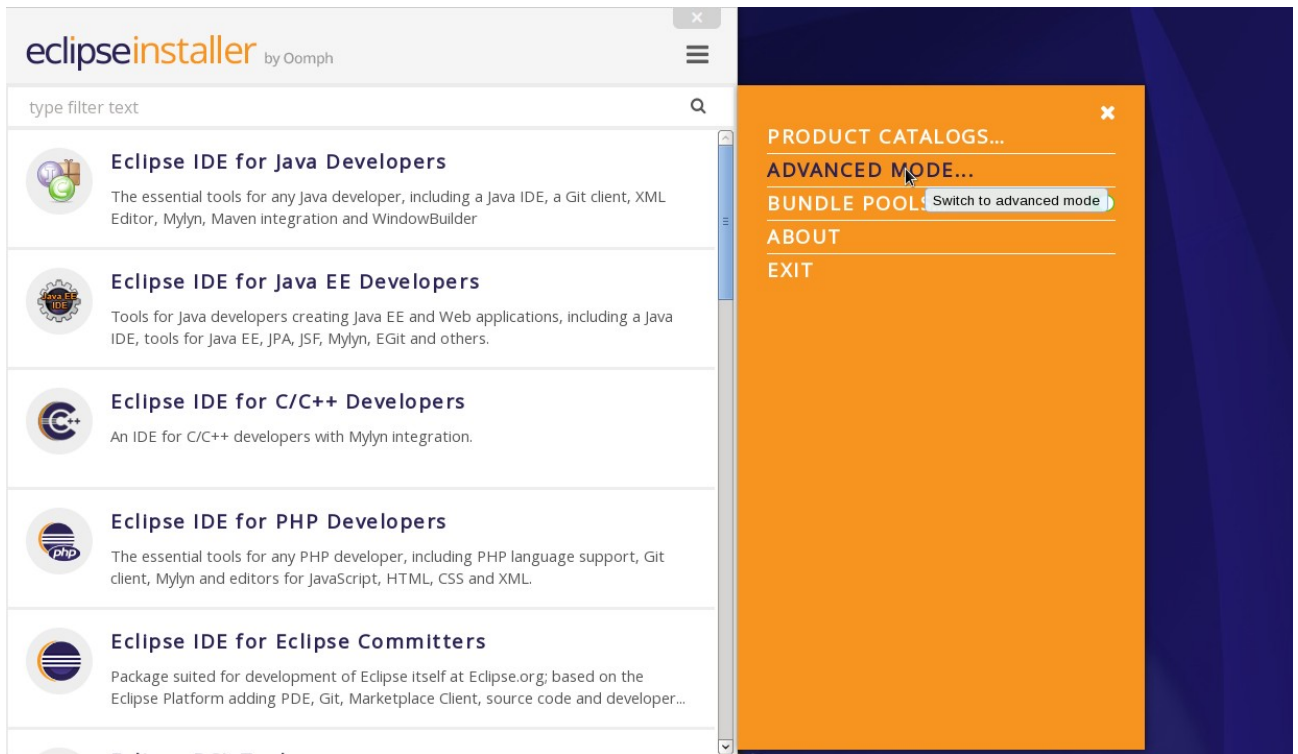
```
<?xml version="1.0" encoding="UTF-8"?>
<setup:Product
  xmi:version="2.0"
  xmlns:xmi="http://www.omg.org/XMI"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:setup="http://www.eclipse.org/oomph/setup/1.0"
  xmlns:setup.p2="http://www.eclipse.org/oomph/setup/p2/1.0"
  name="rtist"
  label="rtist 10.3">
  <version name="photon"
    label="Photon"
    requiredJavaVersion="1.8">
    <setupTask
      xsi:type="setup.p2:P2Task"
      label="RTist including Eclipse Photon">
      <requirement
        name="epp.package.cpp"
        versionRange="[4.8.0,4.9.0)"/>
      <requirement
        name="org.eclipse.platform.feature.group"
        versionRange="[4.8.0,4.9.0)"/>
      <requirement
        name="org.eclipse.rcp.feature.group"
        versionRange="[4.8.0,4.9.0)"/>
      <requirement
        name="org.eclipse.sdk"
        versionRange="[4.8.0,4.9.0)"/>
      <requirement name="org.eclipse.jgit.feature.group"/>
      <requirement name="org.eclipse.egit.feature.group"/>
      <requirement name="org.eclipse.jgit.pgm.feature.group"/>
      <requirement name="rtist.core"/>
      <requirement name="rtist.extra"/>
      <requirement name="rtist.integrations"/>
      <repository
        url="http://download.eclipse.org/releases/photon"/>
      <repository
        url="url_to_rtist_repository"/>
    </setupTask>
  </version>
  <description>RTist Installation Script</description>
</setup:Product>
```

You can copy the text above and replace **url\_to\_rtist\_repository** with your local RTist 10.3 repository location and use a file with this contents as a starting point for your Eclipse installer setup script. Note that copying from PDF format may change the hyphens in the text (“-”) and introduce “soft hyphens”. So check that the “-” characters still remain after copying.

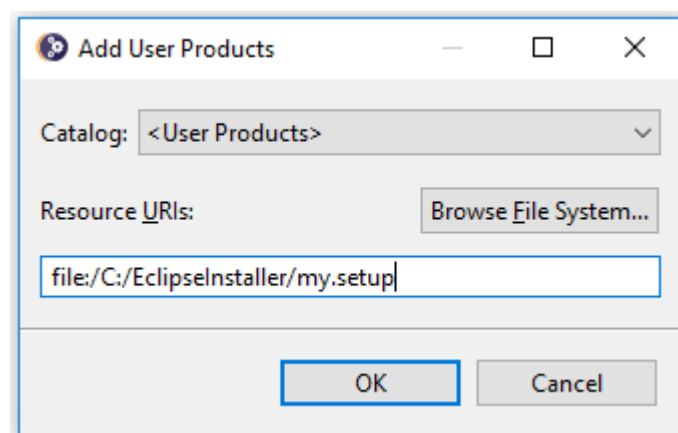
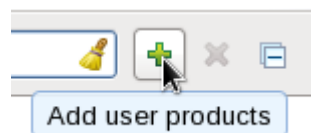
Here is an example of what the repository URL for a local RTist 10.3 repository (unzipped into a folder) can look like in the setup script:

```
<repository url="file:///C:/rtist/builds/rtist-10.3-2018.33_v20180807_1102"/>
```

To install RTist start the Eclipse installer and switch to Advanced Mode.



Use the command **Add user products** to choose your setup file.



You can now install RTist from the main Eclipse Installer page by selecting **RTist 10.3** and pressing **Next**.

In the subsequent dialogs the default values work fine, even though you may want to modify the installation folder name. If you add additional Eclipse projects to your installation (for example JSDT to include a good JavaScript editor), remember to confirm that the target platform is set to Photon.

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## 5 Shared Installations and Pre-Configured License Setup

If you would like to share one installation among a group of users, e.g. using a network installation, some special considerations concerning the license setup are needed. The main issue with this scenario is how to apply a valid license at the time of installation, to avoid that each user has to do this when they start RTist.

The license information for RTist is edited in the preference page *RealTime Development – License*. Contrary to most other preferences, this information is not stored in the workspace metadata but in the RTist installation (more precisely in the file `<install-dir>/configuration/.settings/com.hcl.rtist.license.core.prefs`). This means that the person who creates a shared installation can enter the license information right after the installation is completed. All users of that installation will then have the license information already pre-configured and can immediately start to use RTist.

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### 5.1 Read-Only Installation

In a shared installation scenario it is common to have the installation folder to be read-only for regular users. In general this works for an RTist installation but there are two constraints:

- The license information must be set-up before making the installation read-only, since it is stored within the installation folder.
- The TargetRTS and Connexis features cannot be installed into a read-only Eclipse installation. **NOTE:** You still can use TargetRTS and Connexis if you install RTist in a different Eclipse and then copy the `rsa_rt/C++` and/or `rsa_rt/Connexis` folders to some shared folder `rsa_rt` and use this folder from the main RTist.

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## 6 Post-Installation Setup

After installation you should do some post-installation setup tasks before starting to use RTist. This is needed because the standard Eclipse settings with regards to memory etc. are usually not sufficient when working with RTist.

Please refer to [this article](#) for information about setup tasks that are commonly needed for performance and other reasons.



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## 7 Installing without Internet Access

As explained in the chapter [Install](#) it may be necessary during the installation of RTist to download additional Eclipse plugins, that are needed by RTist but are missing in your Eclipse installation. Usually this happens automatically (provided you have marked the option **Contact all update sites during install to find required software**). However, if you don't have access to internet this obviously won't work. For example, this can happen if your machine is behind a firewall which blocks access to some internet sites such as eclipse.org.

If you get errors like "missing required plug-in" it's likely that Eclipse failed to download the necessary Eclipse plugins. If you cannot temporarily enable the internet access on the installation machine, you need to work around the problem in one of the following ways:

1. Install RTist on a different machine which has access to internet. Then copy the installation folder to the target machine.
2. Mirror needed Eclipse plugins from eclipse.org into a local directory. See detailed instructions below.

---

### 7.1 Mirror Eclipse Plugins

You can mirror Eclipse plugins available at eclipse.org into a local directory which you then can refer to when installing RTist on a machine that lacks internet connectivity.

Start by creating an Ant file `mirror.xml` with the following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<project name="mirror-missed" default="default">
  <target name="default">
    <p2.mirror verbose="yes" source="http://download.eclipse.org/releases/photon">
      <destination location="file://${output}" compressed="true" name="RT Dependenc-
cies" />
      <iu id="org.eclipse.jdt.feature.group" version="" />
      <iu id="org.eclipse.pde.feature.group" version="" />
      <iu id="org.eclipse.platform.doc.isv" version="" />
      <iu id="org.apache.batik.css" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.util" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.util.gui" version="1.6.0.v201011041432" />
      <iu id="org.eclipse.birt.feature.group" version="" />
      <iu id="org.apache.batik.pdf" version="" />
      <iu id="org.apache.batik.parser" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.svggen" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.transcoder" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.xml" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.bridge" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.dom" version="1.6.1.v201505192100" />
      <iu id="org.apache.batik.dom.svg" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.ext.awt" version="1.6.0.v201011041432" />
      <iu id="org.apache.batik.css" version="1.7.0.v201011041433" />
      <iu id="org.apache.batik.util" version="1.7.0.v201011041433" />
      <iu id="org.apache.batik.util.gui" version="1.7.0.v200903091627" />
      <iu id="org.eclipse.datatools.connectivity.feature.feature.group" version="" />
      <iu id="org.eclipse.datatools.connectivity.oda.feature.feature.group"
version="" />
      <iu id="org.eclipse.datatools.enablement.apache.derby.feature.feature.group"
version="" />
      <iu id="org.eclipse.datatools.enablement.oda.designer.feature.feature.group"
version="" />
    </p2.mirror>
  </target>
</project>
```

```

    <iu id="org.eclipse.datatools.enablement.oda.feature.feature.group"
version="" />
    <iu id="org.eclipse.datatools.sqldevtools.feature.feature.group" version="" />
    <iu id="org.eclipse.datatools.enablement.feature.feature.group" version="" />
    <iu id="org.eclipse.datatools.doc.user.feature.group" version="" />
    <iu id="org.eclipse.gef.feature.group" version="" />
    <iu id="org.eclipse.datatools.modelbase.feature.feature.group" version="" />
    <iu id="org.eclipse.jetty.webapp" version="" />
    <iu id="org.eclipse.jetty.deploy" version="" />
    <iu id="org.eclipse.jetty.jndi" version="" />
    <iu id="org.eclipse.jetty.plus" version="" />
    <iu id="org.eclipse.jetty.xml" version="" />
    <iu id="org.eclipse.emf.feature.group" version="" />
    <iu id="net.sourceforge.lpg.lpgjavaruntime" version="" />
    <iu id="javax.activation" version="" />
    <iu id="javax.mail" version="" />
    <iu id="javax.transaction" version="" />
    <slicingOptions followStrict="true" />
  </p2.mirror>
</target>
</project>

```

Then run this Ant script on a machine which has access to eclipse.org and where Eclipse is installed. You can either run it from the console or from inside Eclipse.

From a console you use the org.eclipse.ant.core.antRunner application. For example, on Windows the command would be:

```
eclipse.exe -application org.eclipse.ant.core.antRunner -file "mirror.xml" -Doutput
=<output-path>
```

From Eclipse do like this:

1. Put mirror.xml in some Eclipse project
2. Replace \${output} in mirror.xml with the desired output path
3. Perform the context menu command **Run As -> Ant Build...**
4. In the JRE tab, set the option to **Run in the same JRE as the workspace.**
5. Optionally, turn off **Build before launch** in the Build tab.
6. Press the **Run** button

**NOTE:** If you need to re-run the script, you can use **Run As -> Ant Build**. It will reuse the previous launch configuration.

Now the output folder that you specified should contain mirrored Eclipse plugins, features and the files artifact.jar and content.jar. It may possibly also contain some additional folders.

Finally, copy this folder to the machine that lacks internet connectivity and where you want to install RTist. Or share the folder in your local network so it can be accessed from the installation machine. Then go to *Preferences – Install/Update – Available Software Sites* and replace the entry <http://download.eclipse.org/releases/photon> with [file://<path\\_to\\_mirror\\_folder>](file://<path_to_mirror_folder>). After that you can install RTist according to the normal instructions.