

**WA1624 Mastering XML for SOA
and Web Services**

Classroom Setup Guide

Web Age Solutions Inc.

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Part 1 - Minimum Hardware Requirements

- Internet access. Students will be downloading a patch for Eclipse for Java 11 support and must have access to the internet.
- 64 bit hardware and operating system
- CPU to meet the minimum requirements of the operating system being used
- 3 GB RAM minimum, 4 GB recommended
- 15 GB in the hard disk
- USB port

Part 2 - Minimum Software Requirements

- Windows 8 or higher
 - One of the following web browsers:
 - Internet Explorer 9 or higher
 - Latest Firefox
 - Latest Chrome
 - Adobe Acrobat Reader
 - Zip extraction utility
 - JDK 11.0.1 *
 - Eclipse IDE for Java EE Developers – 2018-09 *
 - Saxon *
 - Apache Tomcat *
- * - indicates software provided as part of the courseware.

Part 3 - Software Provided

You will receive the following file:

- **WA1624_REL_3_0.ZIP**

All other software listed under Minimum Software Requirements is either commercially

licensed software that you must provide or software that is freely available off the Internet.

Part 4 - Instructions

__1. Login to the computer with a user that has administrative access.

__2. Extract the **.ZIP** file to **C:**

__3. Review that the following folders were created:

- **C:\LabFiles**
- **C:\Saxon**
- **C:\Software**
- **C:\Software\apache-tomcat-8.5.4**
- **C:\Software\eclipse**

__4. Review that the following files were created:

- **C:\Software\jdk-11.0.1_windows-x64_bin.exe**

Part 5 - Privileges to Users

During the labs students will require privileges on several directories. They will need to be able to write, read, and modify files in these directories for the labs. Although the directions below are provided as an example, this may differ depending on Windows version. The important thing is to make sure students have full permissions on the folders below or they may not be able to accomplish some labs.

- **C:\Software**
- **C:\LabFiles**
- **C:\Workspace**

__1. Create the user that the students will use during the class.

__2. Give the student user account administrative rights. During the labs the student

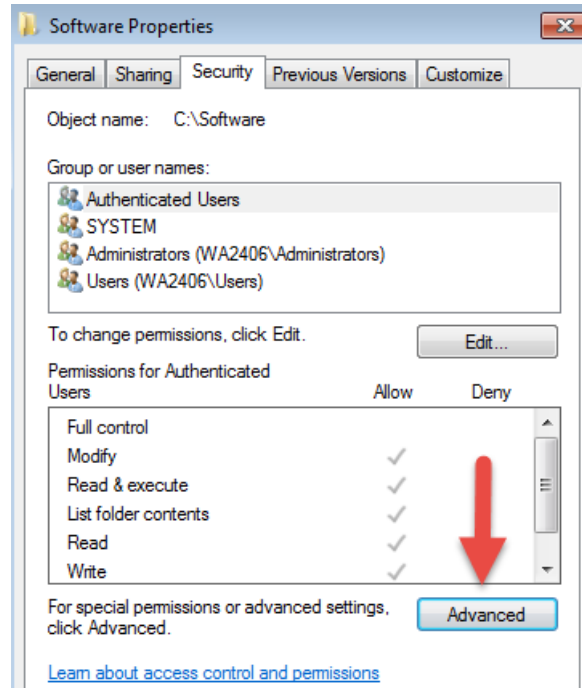
requires this to install software.

__3. Open Windows Explorer.

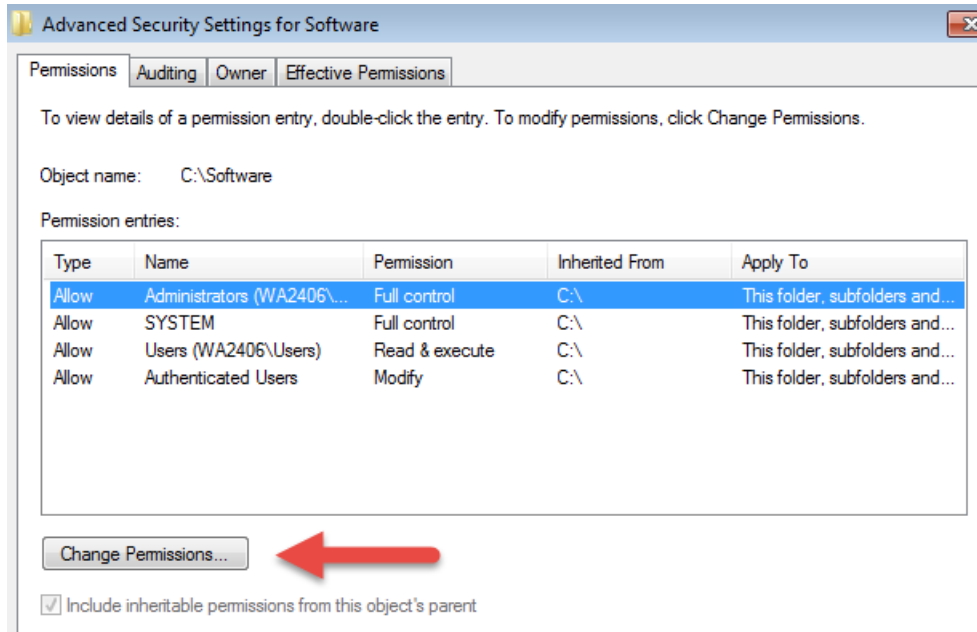
__4. Right click C:\Software and select **Properties**.

__5. Click the **Security** tab.

__6. Click **Advanced**.

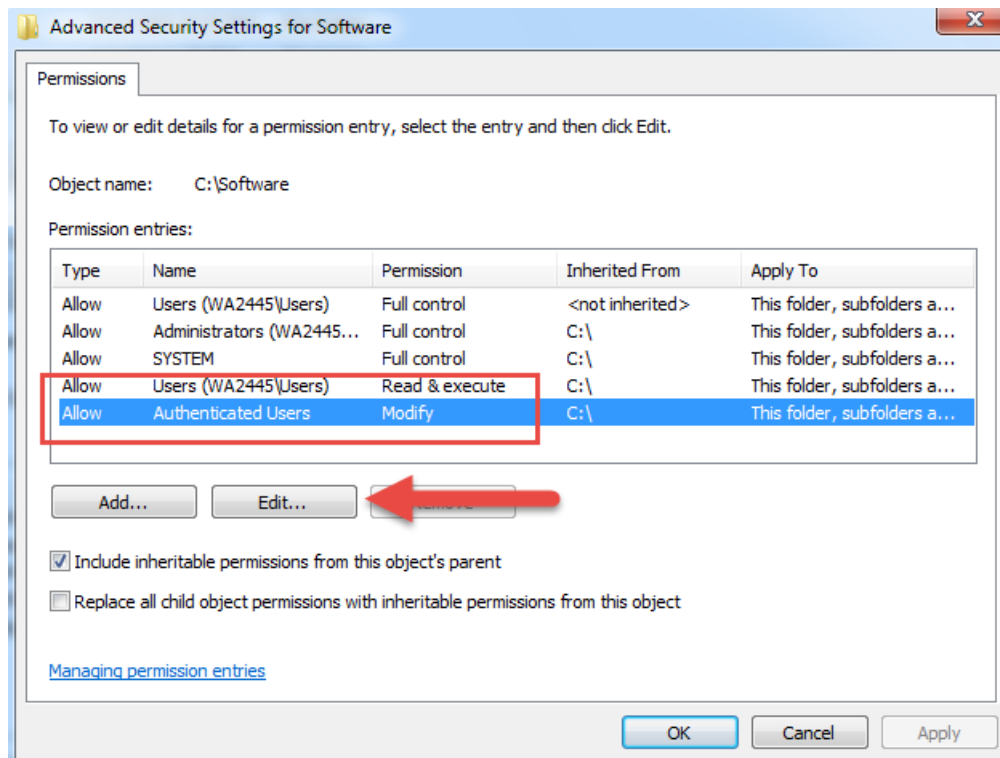


__7. Click **Change Permissions**.

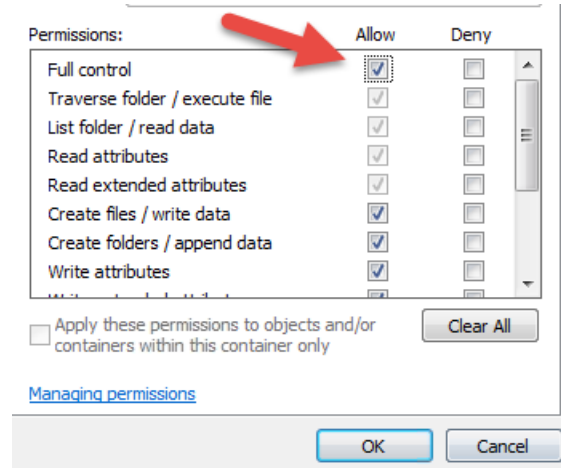


8. Select the **Authenticated Users** entry and click **Edit...**

Note. If you don't have a domain in your environment the select **Users** instead **Authenticated Users**.



__9. Check the **Allow** checkbox to the right of **Full Control** and click **OK**.



__10. Select the checkbox for **Replace all child permissions with inheritable permissions from this objects** and then click **OK**.



- Include inheritable permissions from this object's parent
- Replace all child object permissions with inheritable permissions from this object

__11. A *Windows Security* dialog will open. Click **Yes**.

__12. Wait until Windows finishes updating security.

__13. Back in the *Advanced Security Settings* dialog, click **OK**.

__14. Back in the *Properties* dialog, click **OK**.

__15. Do the same steps to the **C:\LabFiles** folder.

__16. Create a folder called **C:\Workspace** if its not already created.

__17. Do the same steps to the **C:\Workspace** folder.

Part 6 - Installing JDK 11 - 64 bit

__1. Make sure there is no previous Java version already installed on the system. You can check this by using the Windows “Add/Remove Programs” utility. For the best compatibility with the labs it is suggested that all previous versions of Java be uninstalled before proceeding with these instructions. If this is an issue, please contact the setup support person for the course.

__2. From the **C:\Software** directory run the following file:

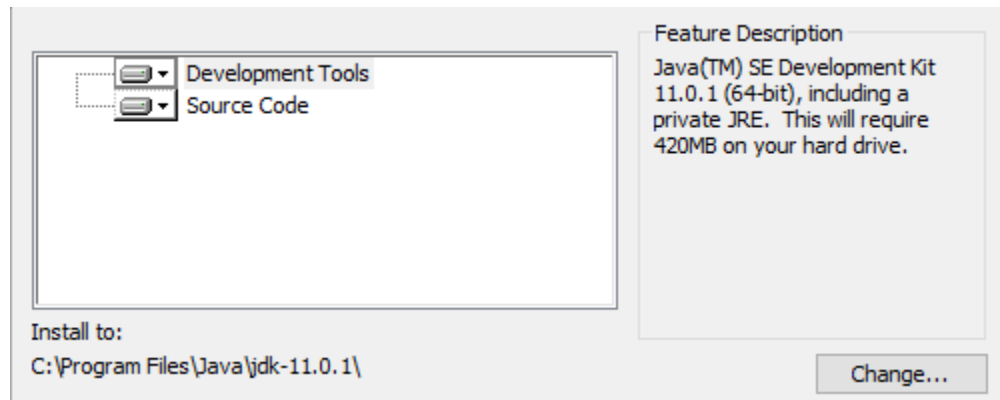
`jdk-11.0.1_windows-x64_bin.exe`

Note: If using prompted by a security prompt allow the installation to continue.

__3. When the initial step of the setup appears, press the **Next** button.



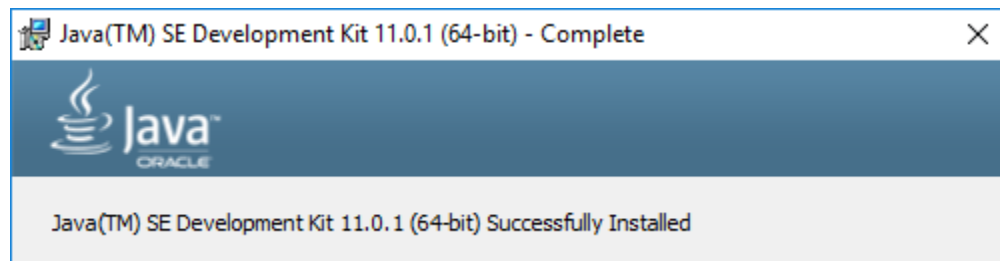
__4. Leave the defaults for installation location and options, and press the **Next** button.



Note: The installation directory may be slightly different.

The installation will begin installing files. Wait until the software is completely installed.

__5. Click **Close**.



__6. Close any browser that might appear asking to register the JDK software.

Set the Environment variables.

__1. Open a Command Prompt. You can do this with '**Start** → **Programs** → **Accessories** → **Command Prompt**'.

__2. Use the 'cd' command to attempt to switch to the following directory. This will verify the presence of a directory used later so make sure you do not get any errors about not being able to “find the path specified”.

```
cd C:\Progra~1\Java\jdk-11.0.1
```

```
C:\>cd C:\Progra~1\Java\jdk-11.0.1
C:\PROGRA~1\Java\jdk-11.0.1>_
```

Note: The installation directory may be slightly different depending your operating system. You may need to use the following directory instead of the one listed above:

C:\Progra~2\Java\jdk-11.0.1

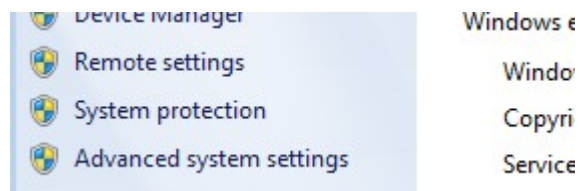
Some of the remaining steps will use the slightly different directory.

__3. Make sure you can reach the java folder and remember the value entered because you will use this value in the following steps.

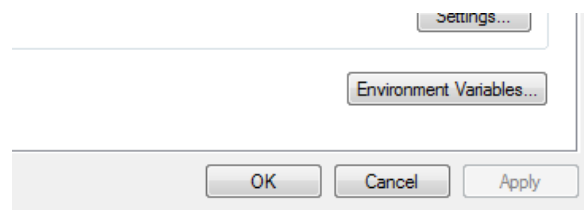
__4. Close the command prompt window.

__5. Open the system properties. The way to do this varies slightly by Windows version. The easiest way is often to open a File Explorer window, right click on the 'This PC' shortcut and select '**Properties**'

__6. Click on **Advanced system settings**.



__7. The system will display the **System Properties** dialog. Select the **Advanced** tab and click **Environment Variables**.

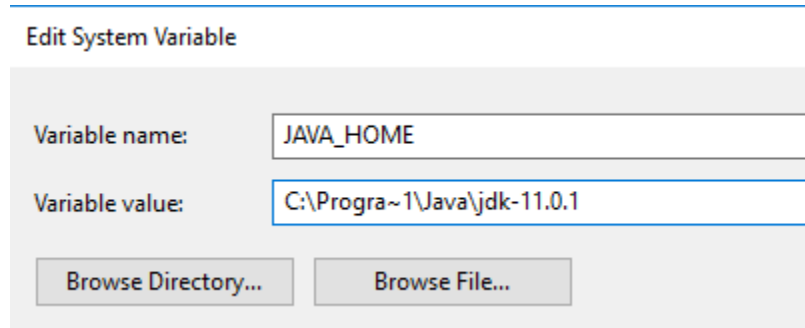


__8. Under the **System Variables** list, click the **New** button.

__9. Enter **JAVA_HOME** as Variable name.

__10. As Variable value enter the following. This should be the value you verified in the *Set the Environment variables section - step 2*.

C:\Progra~1\Java\jdk-11.0.1

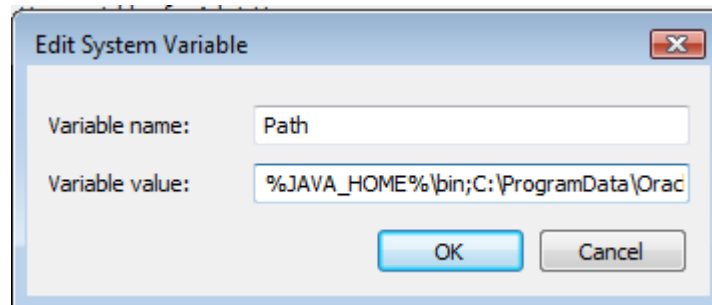


__11. Click **OK** to create the variable.

__12. From the *System Variables* list, select **Path** and click **Edit**.

__13. At the beginning of the line enter the following. Make sure to include the semi-colon on the end:

%JAVA_HOME%\bin;



__14. Click **OK**.

__15. Click **OK** to close the *Environment Variables* window.

__16. Click **OK** to close the *System Properties* window.

Part 7 - Verification of JDK 11

__1. Open a Windows command prompt. You can do this by selecting '**Start -> Run**', entering '**cmd**', and then pressing the **OK** button. Make sure it is a new command prompt and not one open previously.

__2. Enter the following command:

```
echo %PATH%
```

Make sure you see the Java 'bin' directory listed at the beginning.

__3. Enter the following command:

```
java -version
```

Make sure you see the response shown below.

```
C:\>java -version
java version "11.0.1" 2018-10-16 LTS
Java(TM) SE Runtime Environment 18.9 (build 11.0.1+13-LTS)
Java HotSpot(TM) 64-Bit Server VM 18.9 (build 11.0.1+13-LTS, mixed mode)
C:\>
```

Troubleshooting: If you get an error message means that your Environment variable was incorrectly entered, go back and fix the values.

__4. Enter the following command:

```
javac
```

Verify that you get the options to run the Java compiler:

```
C:\>javac
Usage: javac <options> <source files>
where possible options include:
  @<filename>           Read options and filenames from file
  -Akey[=value]         Options to pass to annotation proces
  --add-modules <module>(,<module>)*
                        Root modules to resolve in addition to the initial modules,
                        on the module path if <module> is ALL-MODULE-PATH.
  boot_class_path <path>  bootclasspath <path>
```

__5. Enter the following command:

```
java -XshowSettings:all 2>&1 | findstr /c:"sun.arch.data.model"
```

Verify that it displays the correct value of 64. This indicates that it is 64-bit java that is installed.

__6. Close the command prompt window and any extra windows that are open.

Java has been installed.

Part 8 - Open Eclipse 2018-09

To update Eclipse software, you run Eclipse and specify update settings from within the tool.

__1. Make sure you are able to connect to the internet as you will need access to download the Eclipse software update.

__2. Open a file browser and navigate to **C:\Software\eclipse**.

__3. Run **eclipse.exe** by double clicking on the file.

The *Workspace Launcher* dialog will appear.

__4. Change the **Workspace** to **C:\workspace** as shown below.

Select a directory as workspace

Eclipse IDE uses the workspace directory to store its preferences and development artifacts.

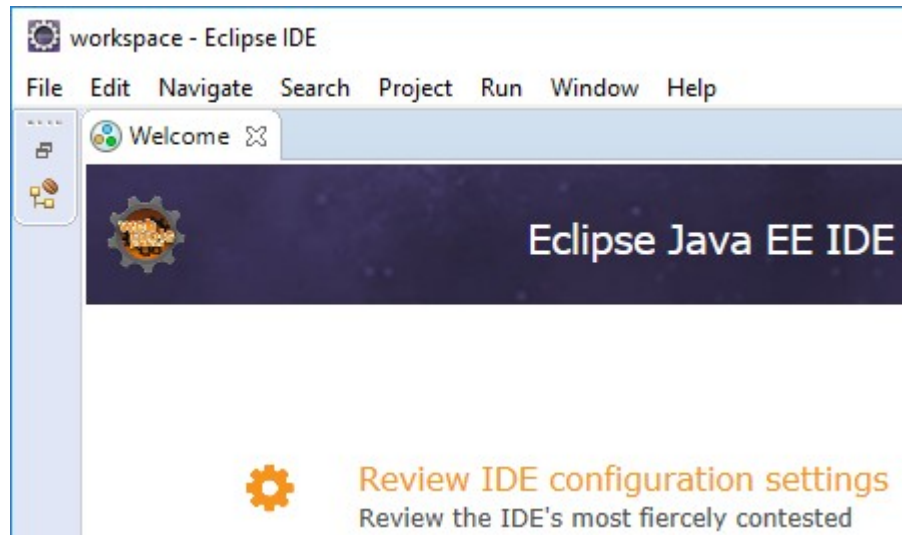
Workspace:

Use this as the default and do not ask again

▶ Recent Workspaces

__5. Click **Launch**.

Eclipse will start, and the *Welcome* screen may be shown.



__6. Close the Welcome screen.

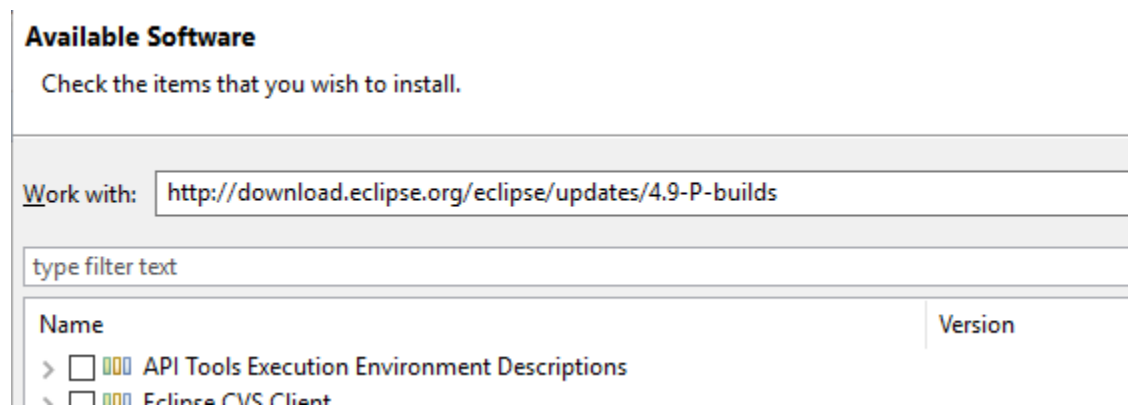
Part 9 - Setup Java 11 Tools for Eclipse

The dialog to update/extend Eclipse will collect information about the update you want to install.

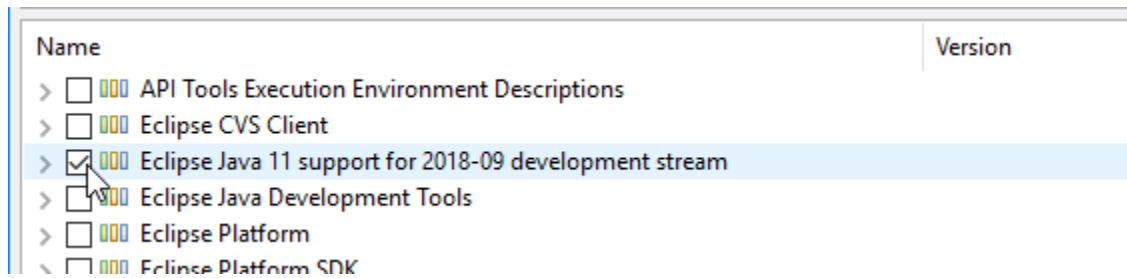
__1. From the menu bar, select **Help | Install New Software...**

__2. In the '**Work with**' box, fill in the following value and hit the **Enter** button to load the available software updates

`http://download.eclipse.org/eclipse/updates/4.9-P-builds`



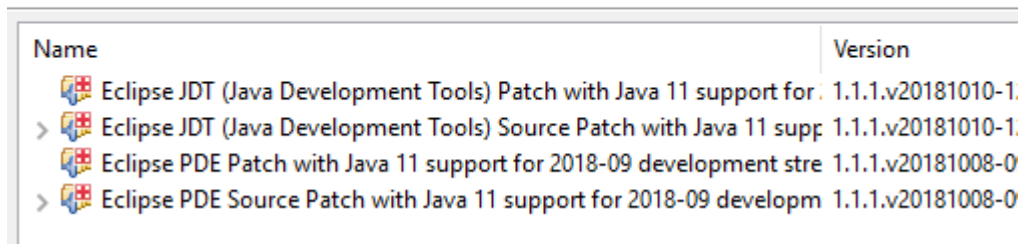
3. In the list of available software updates, click **ONLY** the box next to 'Eclipse Java 11 support for 2018-09 development stream' and click the **Next** button.



4. Accept the default items to be installed and click the **Next** button.

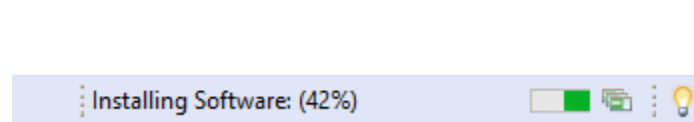
Install Details

Review the items to be installed.

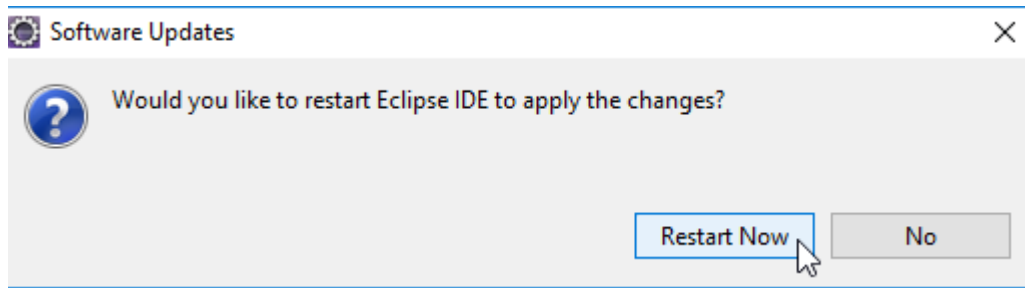


5. Click the radio button to accept the license terms and click the **Finish** button.

6. Check that there is a status bar in the lower right showing the progress of the download and update.



__7. Once complete, Eclipse will prompt you to restart. Click the **Restart Now** button.

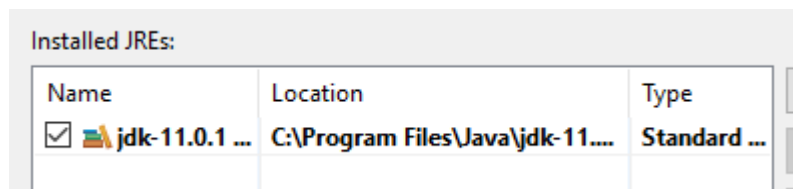


__8. Make sure that Eclipse starts again correctly, selecting the same workspace directory if prompted.

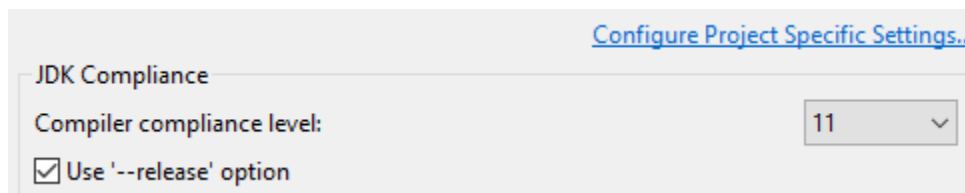
__9. From the menus, select **Window | Preferences**.

__10. From the preferences, expand and select **Java | Installed JREs**.

__11. Make sure that the JDK 11 installed software is listed.



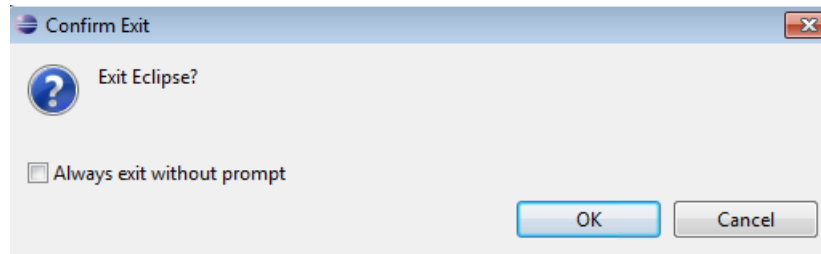
__12. Expand and select **Java | Compiler** and make sure that Java 11 is available in the compiler compliance level options.



__13. Click **Cancel** to close the preferences without any changes.

__14. Close Eclipse by selecting **File | Exit**.

__15. Confirm by clicking OK if prompt.



In these steps, you installed Eclipse tools that support Java 11. Eclipse software is generally downloaded from within the tool from Eclipse "update sites".

Part 10 - Saxon

__ 1. Open a command prompt and change to C:\Saxon\bin

```
cd C:\Saxon\bin
```

__ 2. Type query and hit enter.

You should see a list of options for query.

```
C:\Saxon\bin>query
No query file name
Saxon 9.0.0.1N from Saxonica
Usage: Query [options] query {param=value}...
Options:
-cr:classname      Use specified CollectionURIResolver class
-dtd:on|off        Validate using DTD
-expand:on|off     Expand defaults defined in schema/DTD
-explain[:filename] Display compiled expression tree
-ext:[on|off]     Allow|Disallow external Java functions
-l:on|off         Line numbering for source document
-mr:classname     Use specified ModuleURIResolver class
-o:filename       Send output to named file
-outval:recover|fatal Handling of validation errors on result document
-p              Recognize Saxon file extensions and query parameters
-pipe:push|pull   Execute internally in push or pull mode
-projection:[on|off] Use|Don't use source document projection
-r:classname     Use URIResolver class
-repeat:N        Repeat N times for performance measurement
-s:file|URI      Provide initial context document
-sa             Schema-aware query (requires Saxon-SA)
-strip:all|none|ignorable Strip whitespace text nodes
-t             Display version and timing information
-tree:tiny|linked Select tree model
-T[:classname]  Use TraceListener class
-TJ           Trace calls to external Java functions
-u            Names are URLs not filenames
-val:strict|lax  Validate using schema
-wrap:on|off    Wrap result sequence in XML elements
-x:classname   Parser (XMLReader) used for source files
-xi:on|off     Expand XInclude on all documents
-xmlversion:1.0|1.1 Version of XML to be handled
-?           Display this message
param=value   Set query string parameter
+param=value Set query document parameter
!option=value Set serialization option
```

__ 3. Close the command prompt.

Part 11 - Verification of Apache Tomcat 8.5.4

__ 1. Open a command prompt window.

__ 2. Change to the following directory:

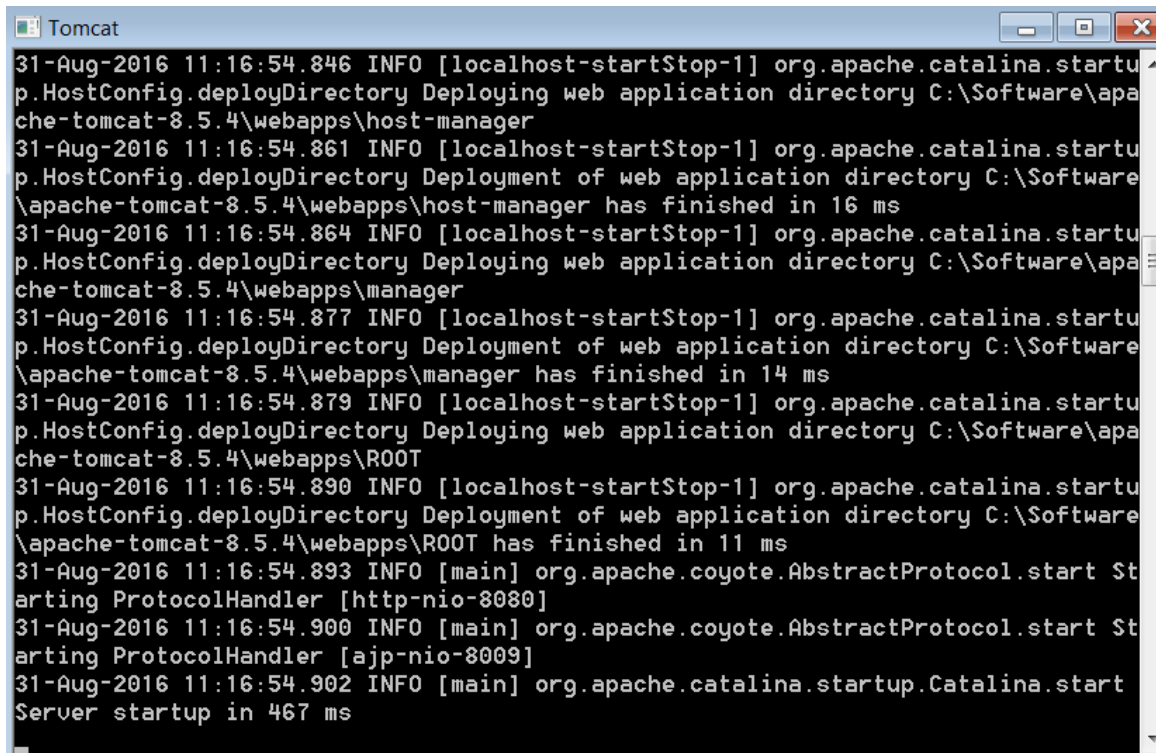
```
cd C:\Software\apache-tomcat-8.5.4\bin
```

___3. Run the command:

```
startup.bat
```

___4. Windows Security Alert may open. Click **Allow Access**.

___5. Apache will start in a new window.



```
Tomcat
31-Aug-2016 11:16:54.846 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deploying web application directory C:\Software\apa
che-tomcat-8.5.4\webapps\host-manager
31-Aug-2016 11:16:54.861 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deployment of web application directory C:\Software
\apache-tomcat-8.5.4\webapps\host-manager has finished in 16 ms
31-Aug-2016 11:16:54.864 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deploying web application directory C:\Software\apa
che-tomcat-8.5.4\webapps\manager
31-Aug-2016 11:16:54.877 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deployment of web application directory C:\Software
\apache-tomcat-8.5.4\webapps\manager has finished in 14 ms
31-Aug-2016 11:16:54.879 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deploying web application directory C:\Software\apa
che-tomcat-8.5.4\webapps\ROOT
31-Aug-2016 11:16:54.890 INFO [localhost-startStop-1] org.apache.catalina.startup
p.HostConfig.deployDirectory Deployment of web application directory C:\Software
\apache-tomcat-8.5.4\webapps\ROOT has finished in 11 ms
31-Aug-2016 11:16:54.893 INFO [main] org.apache.coyote.AbstractProtocol.start St
arting ProtocolHandler [http-nio-8080]
31-Aug-2016 11:16:54.900 INFO [main] org.apache.coyote.AbstractProtocol.start St
arting ProtocolHandler [ajp-nio-8009]
31-Aug-2016 11:16:54.902 INFO [main] org.apache.catalina.startup.Catalina.start
Server startup in 467 ms
```

___6. Open another command prompt window.

___7. Change to the following directory:

```
cd C:\Software\apache-tomcat-8.5.4\bin
```

___8. Run the command:

```
shutdown.bat
```

__9. Apache will stop and the window where it was running will close.

__10. Close All command prompts.

Part 12 - Summary

You have successfully installed the software for this course!

If you have any question please contact us by email at support@webagesolutions.com

From US and Canada call: 1-877-812-8887 ext. 26

International call: 416-406-3994 ext. 26

Congratulations. The installation for this course has been completed.