

IN1502: Applied Continuous Integration with Jenkins

**Classroom & System Requirements
Technical Setup Guide**

Requirements

The training host is responsible for provisioning the equipment and setup listed in this document.

CLASSROOM REQUIREMENTS (for in-class presentation):

Digital Projector (w/ cables and display unit)	Whiteboard, dry erase markers and eraser
Tables, desks, chairs to accommodate attendees	Easel, flipchart paper and markers
Power Strips (2)	

STUDENT REQUIREMENTS:

- Individual Laptop or PC

Windows Requirements	
Processor	2 GHz Processor minimum (32 or 64 bit)
RAM	2 GB or higher (4 GB recommended)
Available Hard Disk Space	2 GB of free disk space
Operating System	Windows Vista/7/8/10, OS X Yosemite*
Network	Internet Connectivity.
Software	See links below
Student Files	See Link on page 13

*The course can successfully be delivered on other platforms but it has been targeted for Windows or Mac platforms and has been tested on Windows 7 and Mac OS X Yosemite.

Users set up with administrative rights on classroom machines.

ALL SOFTWARE SHOULD BE DOWNLOADED AND INSTALLED PRIOR TO CLASS

SOFTWARE REQUIREMENTS

Java Development Kit (JDK)

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

“Mars” Eclipse 4.4 IDE for JEE Developers

For PC:

http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/mars/1/eclipse-jee-mars-1-win32-x86_64.zip

For Mac:

http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/mars/1/eclipse-jee-mars-1-macosx-cocoa-x86_64.tar.gz

Git 2.8.0

For PC:

<https://git-scm.com/download/win>

For Mac:

<https://git-scm.com/download/mac>

Apache Tomcat 8

For PC:

<http://mirrors.sonic.net/apache/tomcat/tomcat-8/v8.0.33/bin/apache-tomcat-8.0.33.exe>

For Mac:

<http://mirrors.sonic.net/apache/tomcat/tomcat-8/v8.0.33/bin/apache-tomcat-8.0.33.tar.gz>

Node.js

For PC:

<https://nodejs.org/dist/v5.10.1/node-v5.10.1-x64.msi>

For Mac:

<https://nodejs.org/dist/v5.10.1/node-v5.10.1.pkg>

Microsoft Internet Explorer 9 or higher for Windows or Safari 9 or higher for Mac
Provided Lab Files (in Setup.zip)

SETUP INSTRUCTIONS

Setup instructions are provided below for Windows and MAC. Several software components need to be installed. For each software component, there are Windows instructions following a purple banner and Mac instructions following an orange banner. Follow the appropriate instructions for your platform to install each software component.

Installing Java Development Kit

Windows Install:

1. Download Oracle/Sun Java Development Kit (JDK) **not** the Java Runtime Environment (JRE).

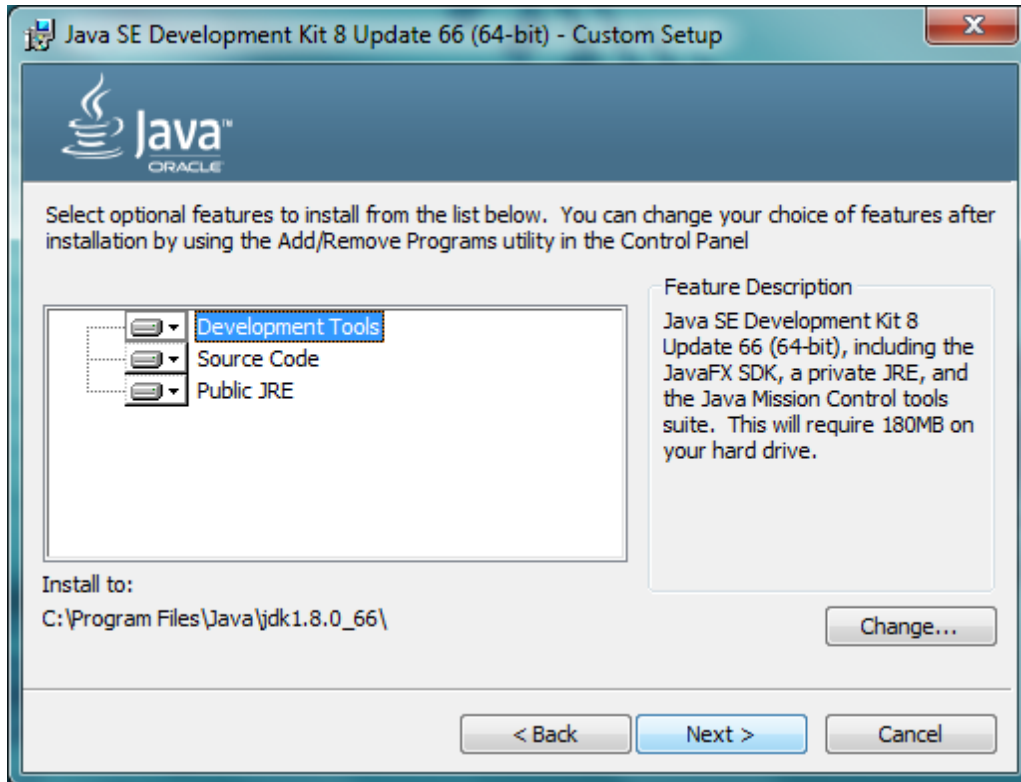
<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

2. Accept the Oracle License Agreement. Download the appropriate **Java SE 8 JDK**.

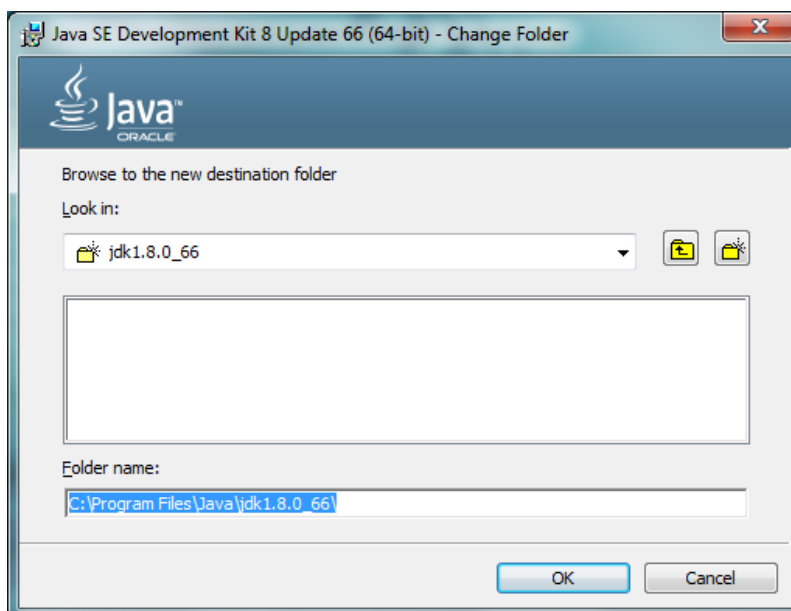
Java SE Development Kit 8u66		
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.		
Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.		
Product / File Description	File Size	Download
Linux x86	154.67 MB	jdk-8u66-linux-i586.rpm
Linux x86	174.83 MB	jdk-8u66-linux-i586.tar.gz
Linux x64	152.69 MB	jdk-8u66-linux-x64.rpm
Linux x64	172.89 MB	jdk-8u66-linux-x64.tar.gz
Mac OS X x64	227.12 MB	jdk-8u66-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.65 MB	jdk-8u66-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.05 MB	jdk-8u66-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140 MB	jdk-8u66-solaris-x64.tar.Z
Solaris x64	96.2 MB	jdk-8u66-solaris-x64.tar.gz
Windows x86	181.33 MB	jdk-8u66-windows-i586.exe
Windows x64	186.65 MB	jdk-8u66-windows-x64.exe

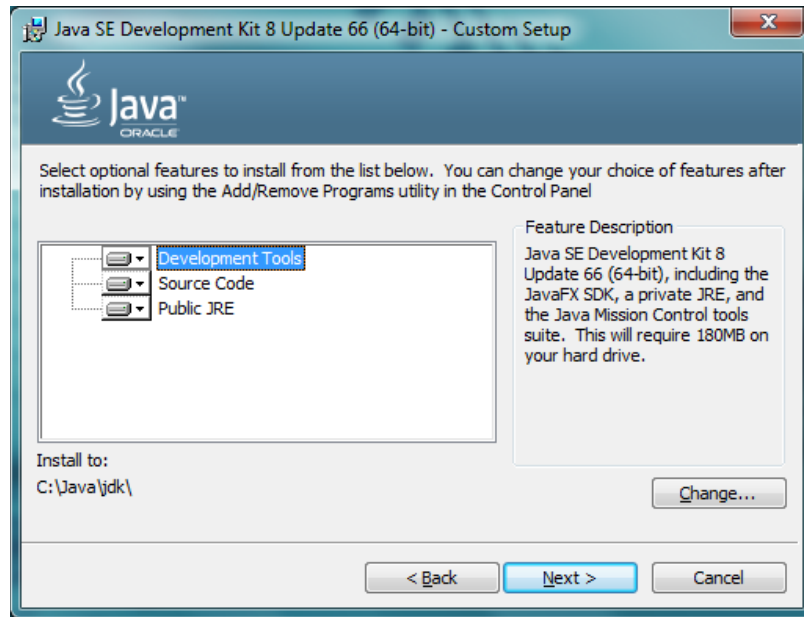
Note: You have to be consistent on the lab environment you install. If you are on a 64-bit platform, you need a 64-bit JDK, with a 64-bit Eclipse, (or all 32-bit builds). You cannot mix 32-bit with 64-bit builds.

3. To install the JDK, run the downloaded executable to start the installation wizard. On the Custom Setup screen, click the **Change** button.



4. Replace the Folder name with **C:\Java\jdk**. Click **OK** and then click **Next**.





5. At the end of the installation, you will see the Complete/Success window. Click **Finish**. (Close the browser that the installation wizard opens if you do not want to register the Java Development Kit.)



Mac Install:

1. Download Oracle/Sun Java Development Kit (JDK) **not** the Java Runtime Environment (JRE).

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

2. Accept the Oracle License Agreement. Download the appropriate **Java SE 8 JDK**.

Java SE Development Kit 8u66		
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.		
Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.		
Product / File Description	File Size	Download
Linux x86	154.67 MB	jdk-8u66-linux-i586.rpm
Linux x86	174.83 MB	jdk-8u66-linux-i586.tar.gz
Linux x64	152.69 MB	jdk-8u66-linux-x64.rpm
Linux x64	172.89 MB	jdk-8u66-linux-x64.tar.gz
Mac OS X x64	227.12 MB	jdk-8u66-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.65 MB	jdk-8u66-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.05 MB	jdk-8u66-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140 MB	jdk-8u66-solaris-x64.tar.Z
Solaris x64	96.2 MB	jdk-8u66-solaris-x64.tar.gz
Windows x86	181.33 MB	jdk-8u66-windows-i586.exe
Windows x64	186.65 MB	jdk-8u66-windows-x64.exe

Note: You have to be consistent on the lab environment you install. If you are on a 64-bit platform, you need a 64-bit JDK, with a 64-bit Eclipse, (or all 32-bit builds). You cannot mix 32-bit with 64-bit builds.

3. To install the JDK, run the downloaded **.dmg** file to start the installation wizard. Double-click to start the installation.



4. Follow screen instructions. (Click: Continue, Install.)
5. Provide Username and Password to allow the installation. (Click: Install Software.)

6. Click: Close.

Eclipse 4.4 (Mars R1)

For detailed instructions and help, you may also refer to the following online documentation:

<http://wiki.eclipse.org/Eclipse/Installation>

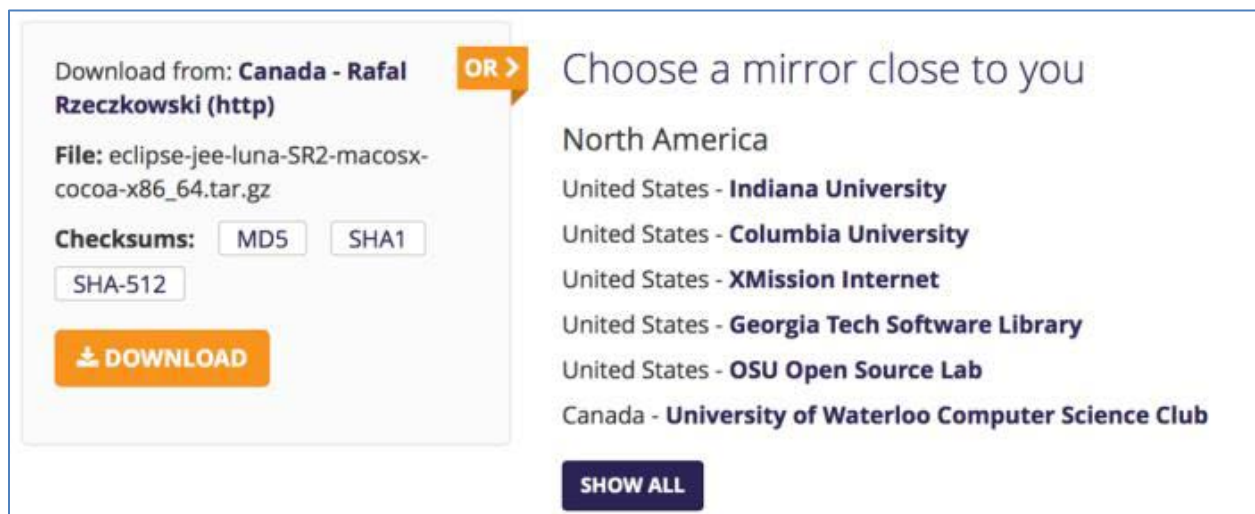
In this section, you will download, install and verify **Eclipse for Java EE Developers**. Navigate to the Mars Eclipse Downloads Page and select the appropriate download link.

Windows Install :

1. The download location is:

http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/mars/1/eclipse-jee-mars-1-win32-x86_64.zip

2. You will be directed to the **Eclipse downloads - mirror selection** page. Click the Download button.

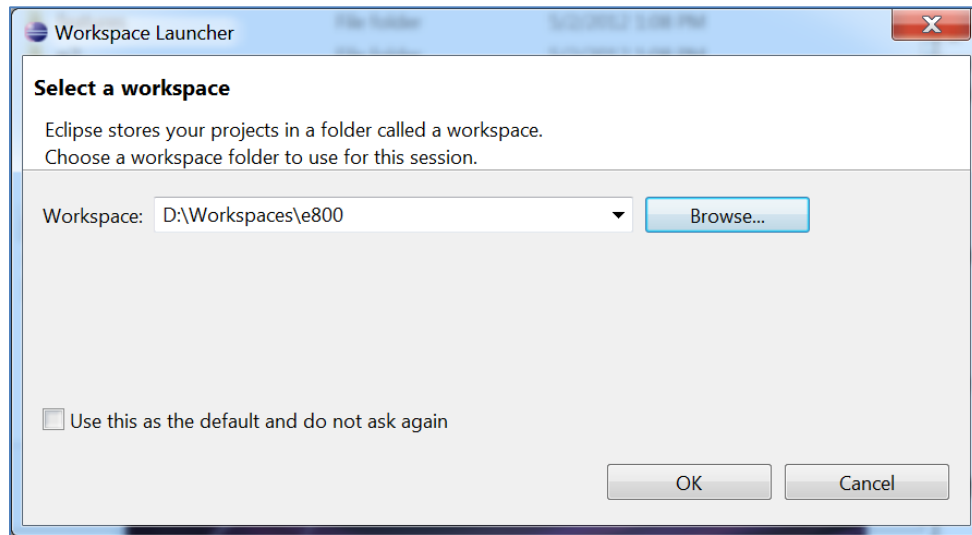


3. When prompted, SAVE the file. Do not use Windows Explorer to open the file.

4. To install Eclipse, simply extract the downloaded file. The download will be delivered as a compressed (i.e. a ".zip", or ".tar.gz") file. Extract this archive into the directory of your choice (e.g. "C:\Mars"). The extract process will create an **eclipse** folder below that folder.

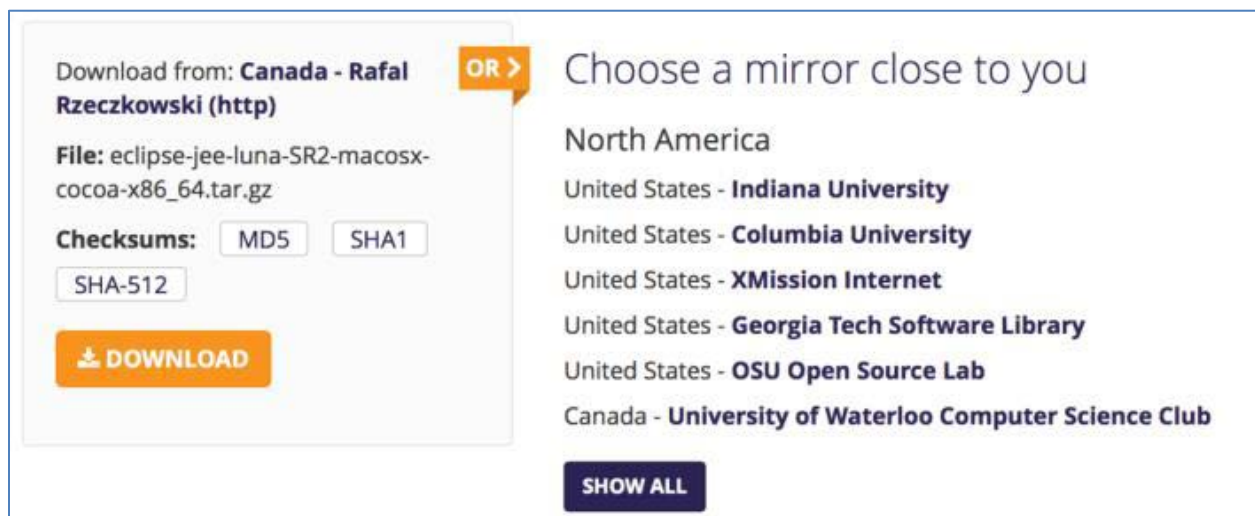
- Do not use Windows Explorer to extract the zip file. This causes known problems. Instead, use a third-party extract program, such as 7-Zip, Winzip, JustZIPIt, or EasyZip.

5. Verify the Eclipse and Java installation. Navigate to the **...eclipse\ folder** and Run the Eclipse application. First, you will see the Workspace Launcher. Accept the default workspace (it will be different than shown below), leave the checkbox **UNCHECKED**, and click OK.



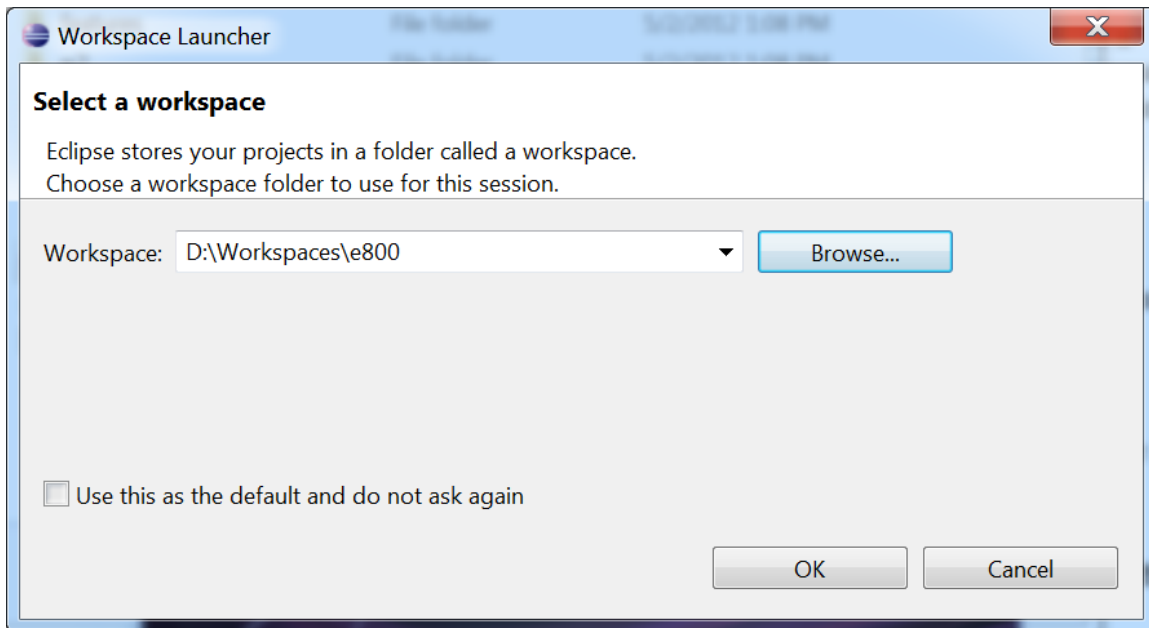
Mac Install:

1. The download location is:
http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/mars/1/eclipse-jee-mars-1-macosx-cocoa-x86_64.tar.gz
2. You will be directed to the **Eclipse downloads - mirror selection** page. Click the Download button.
3. The file will automatically download to an "**eclipse**" folder under the "**download**" folder.



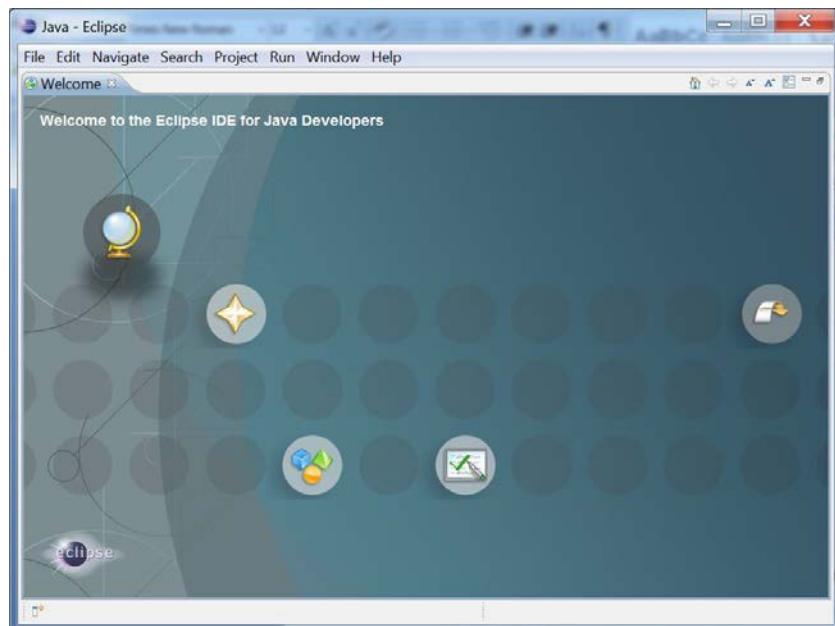
4. To Install Eclipse, move the file (eclipse-jee-luna-SR2-macosx-cocoa-x86_64.tar) to the "**Applications**" folder and open it. It will create a folder **\eclipse** in the same folder where the installation file is located.
 - When you open Eclipse for the first time it will prompt the following:
"eclipse" is an application downloaded from the Internet. Are you sure you want to open it?
 - Click **Open** to open.

5. Verify the Eclipse and Java installation. Navigate to the ...**eclipse**\ folder and Run the Eclipse application. First, you will see the Workspace Launcher. Accept the default workspace (it will be different than shown below), leave the checkbox **UNCHECKED**, and click OK.



Windows and Mac:

6. If the Eclipse Welcome page shown below appears, both Eclipse and the JDK have successfully been installed. Exit the application.



7. Create a shortcut to the Eclipse application on the desktop.

Git

1. In this section, you will download, install and verify **Git**. Navigate to the Git Downloads Page and select the appropriate download link below.
2. Run the installer program.
 - a. Take the defaults on the **Select Components** dialog.
 - b. Select the **Use Git from Windows Command Prompt** option on the **Adjust Path Environment** dialog.
 - c. Take all the other defaults on the rest of the screens.

Windows:

<https://git-scm.com/download/win>

Mac

<https://git-scm.com/download/mac>

Apache Tomcat 8.0

1. In this section, you will download, install and verify **Apache Tomcat 8.0**. Navigate to the Apache Tomcat Downloads Page and select the appropriate download link.

Windows:

<http://mirrors.sonic.net/apache/tomcat/tomcat-8/v8.0.33/bin/apache-tomcat-8.0.33.exe>

1. Download a binary distribution of the core Windows installer: **apache-tomcat-8.0.33.exe**. Run the installer and accept all the defaults.
2. Use the start and stop scripts to start and stop Tomcat.

```
\Program Files\Apache Software Foundation\Tomcat 8.0\bin\startup  
\Program Files\Apache Software Foundation\Tomcat 8.0\bin\shutdown
```

Mac:

<http://mirrors.sonic.net/apache/tomcat/tomcat-8/v8.0.33/bin/apache-tomcat-8.0.33.tar.gz>

1. Download a binary distribution of the core module: **apache-tomcat-8.0.33.tar.gz**.
2. Opening/unarchiving the archive will create a folder structure in your **Downloads** folder:
~/Downloads/apache-tomcat-8.0.33
3. Open a Terminal application, to move the unarchived distribution to **/usr/local** using the following commands: **sudo mkdir -p /usr/local sudo mv ~/Downloads/apache-tomcat-8.0.33 /usr/local**
4. We are going to create a symbolic link that will be used when referring to Tomcat (after removing the old link you might have from installing a previous version). Run the following commands:
sudo rm -f /Library/Tomcat sudo ln -s /usr/local/apache-tomcat-8.0.33 /Library/Tomcat

5. Change ownership of the **/Library/Tomcat** folder hierarchy: **sudo chown -R <your_username> /Library/Tomcat**

6. Make all scripts executable: **sudo chmod +x /Library/Tomcat/bin/*.sh**

7. Use the start and stop scripts to start and stop Tomcat.

/Library/Tomcat/bin/startup.sh

/Library/Tomcat/bin/shutdown.sh

Last login: Sun Aug 14 15:20:38 on ttys000

wpbookpro:~ user\$ **/Library/Tomcat/bin/startup.sh**

Using CATALINA_BASE: /Library/Tomcat

Using CATALINA_HOME: /Library/Tomcat Using CATALINA_TMPDIR: /Library/Tomcat/temp

Using JRE_HOME: /Library/Java/Home

Using CLASSPATH: /Library/Tomcat/bin/bootstrap.jar:/Library/Tomcat/bin/tomcat-juli.jar

wpbookpro:~ user\$ **/Library/Tomcat/bin/shutdown.sh**

Using CATALINA_BASE: /Library/Tomcat

Using CATALINA_HOME: /Library/Tomcat

Using CATALINA_TMPDIR: /Library/Tomcat/temp

Using JRE_HOME: /Library/Java/Home Using CLASSPATH:

/Library/Tomcat/bin/bootstrap.jar:/Library/Tomcat/bin/tomcat-juli.jar

wpbookpro:~ user\$


Home Documentation Configuration Examples Wiki Mailing Lists

Find Help

Apache Tomcat/8.0.33

The Apache Software Foundation
http://www.apache.org/

If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

[Security Considerations HOW-TO](#)
[Manager Application HOW-TO](#)
[Clustering/Session Replication HOW-TO](#)

Server Status

Manager App

Host Manager

Developer Quick Start

[Tomcat Setup](#)
[First Web Application](#)

[Realms & AAA](#)
[JDBC Data Sources](#)

[Examples](#)

[Servlet Specifications](#)
[Tomcat Versions](#)

Managing Tomcat

For security, access to the [manager webapp](#) is restricted. Users are defined in:

```
$CATALINA_HOME/conf/tomcat-users.xml
```

In Tomcat 8.0 access to the manager application is split between different users.
[Read more...](#)

[Release Notes](#)
[Changelog](#)
[Migration Guide](#)

Documentation

[Tomcat 8.0 Documentation](#)
[Tomcat 8.0 Configuration](#)
[Tomcat Wiki](#)

Find additional important configuration information in:

```
$CATALINA_HOME/RUNNING.txt
```

Developers may be interested in:

[Tomcat 8.0 Bug Database](#)
[Tomcat 8.0 JavaDocs](#)

Getting Help

[FAQ and Mailing Lists](#)

The following mailing lists are available:

[tomcat-announce](#)
 Important announcements, releases, security vulnerability notifications. (Low volume).

[tomcat-users](#)
 User support and discussion

[taglibs-user](#)
 User support and discussion for [Apache Taglibs](#)

[tomcat-dev](#)
 Development mailing list, including commit messages

Node.js

In this section, you will download, install and verify **Node.js**. Navigate to the Node.js Downloads Page and select the appropriate download link.

Windows Install:

1. Download <https://nodejs.org/dist/v5.10.1/node-v5.10.1-x64.msi>
2. Run the installer program and change the installation location to: **C:\PF\nodejs**
3. Take the defaults on the **Select Components** dialog.
4. Select the **Update Path** option on the **Adjust Path Environment** on the next dialog.
5. Take all the other defaults on the remaining screens.
6. Open a Command window and enter the command **node -version**
7. Run the command below in the installation directory. This will take quite some time to run.
npm install -g bower grunt
8. To avoid an error when invoking NodeJS from Jenkins in a class exercise:
 - a. Create a folder in **c:\pf\nodejs** named **bin**
 - b. Copy **node.exe** from **c:\pf\nodejs** to **c:\pf\nodejs\bin**

Mac Install:

1. Download <https://nodejs.org/dist/v4.4.3/node-v4.4.3.pkg>
2. Run the installer program and take all the defaults.
3. Open a Terminal window and enter the command: **node -version**
4. Enter the command below. This will take quite some time to run.
sudo npm install -g bower grunt

Setup Files

Setup files can be downloaded from the following link:

http://teksystems.ftpstream.com/37363/71563e4aef7370fa76b33e2b2fbebbae0/Technical_Support/Class%2bFiles/IN1502_Setup.zip

Windows Install :

1. Extract the provided **Setup.zip** containing lab files **using Folder Names** to the root folder.
2. Setup is complete.

Mac Install:

1. Extract the provided **Setup.zip** containing lab files to the Home Directory of the appropriate user for the Mac.
2. Setup is complete.