

**WA2271 - Continuous Integration with
Jenkins-CI**

Classroom Setup Guide

Web Age Solutions Inc.

Table of Contents

Part 1 - Minimum Hardware Requirements	3
Part 2 - Minimum Software Requirements	3
Part 3 - Software Provided.....	4
Part 4 - Instructions.....	4
Part 5 - Installing JDK 8 Update 45.....	5
Part 6 - Verification of JDK 8 Update 45.....	9
Part 7 - Install Maven 3.3.9.....	10
Part 8 - Setup Maven in Eclipse.....	12
Part 9 - Jenkins Installation.....	13
Part 10 - Installing GIT.....	19
Part 11 - Summary.....	24

Part 1 - Minimum Hardware Requirements

- 2 GB RAM minimum, 3 GB recommended
- 15 GB in the hard disk
- Access to Internet

Part 2 - Minimum Software Requirements

- One of the following Windows versions:
 - Windows Vista (Professional, Enterprise, or Ultimate)
 - Windows 7 (Professional, Enterprise, or Ultimate)
- The following web browsers:
 - Chrome
 - Firefox
 - Internet Explorer
- Adobe Acrobat Reader
- Zip extraction utility
- Apache Maven *
- Eclipse *
- Jenkins *
- GIT *
- JDK *

* - indicates software provided as part of the courseware.

Part 3 - Software Provided

Name of the file you will receive:

- **WA2271.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. Make sure the account that you are using to install the software has administrative privileges and the student using this machine will have the same rights.

__2. Extract ZIP file directly to C:

__3. Review that the following folders were created:

- **C:\LabFiles**
- **C:\Software\apache-maven-3.3.9**
- **C:\Software\eclipse**
- **C:\Software\Jenkins-2.7.2-Windows**

__4. Review that the following files were created:

- **C:\Software\Git-2.8.1-32-bit.exe**
- **C:\Software\jdk-8u45-windows-i586.exe**
- **C:\Software\Jenkins-2.7.2-Windows\jenkins.msi**

__5. Create the C:\Workspace folder.

__6. Log in using an administrator user to install the software in the following steps.

__7. Make sure C:\LabFiles and C:\Software folders are not ready only.

Part 5 - Installing JDK 8 Update 45

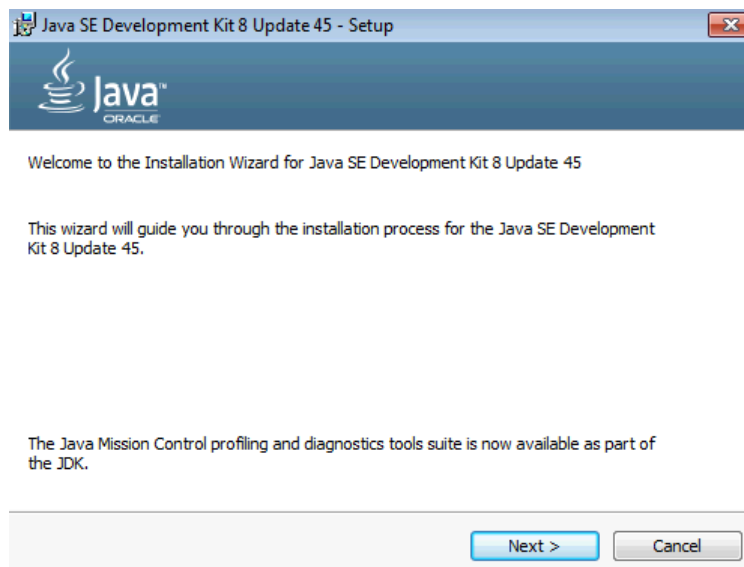
__1. Make sure there is no previous Java version already installed on the system. You can check this by using the Windows “Add/Remove Programs” utility. For the best compatibility with the labs it is suggested that all previous versions of Java be uninstalled before proceeding with these instructions.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

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

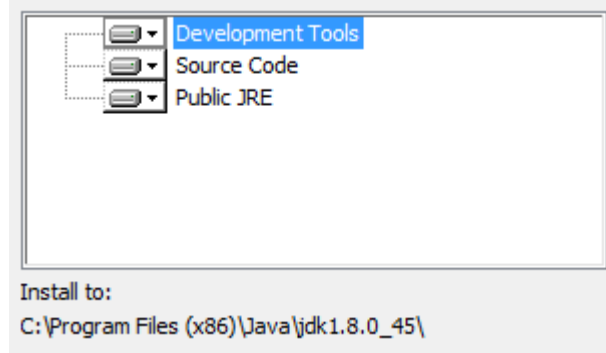
`jdk-8u45-windows-i586`

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.



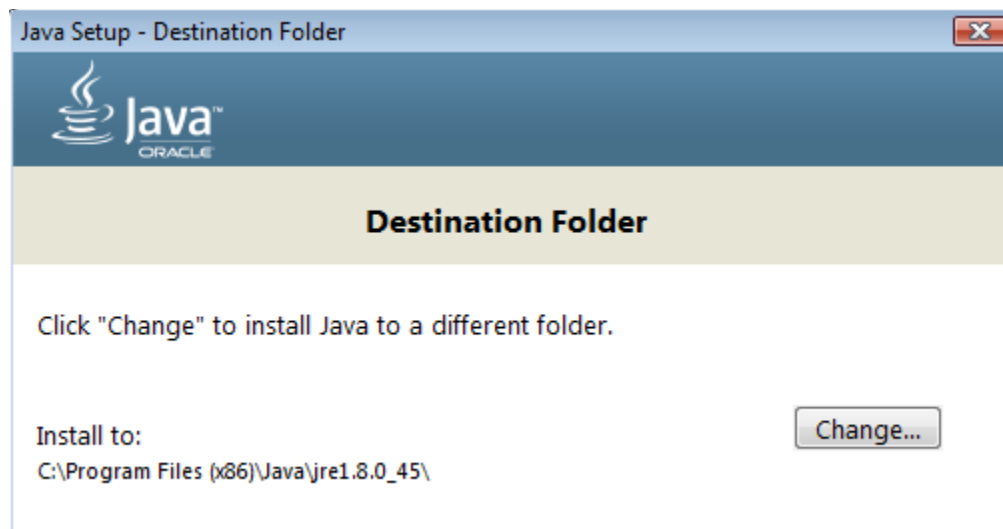
__4. Leave the defaults for installation location and options, and press the **Next** button.



Note: The installation directory may be slightly different.

The installation will begin installing files.

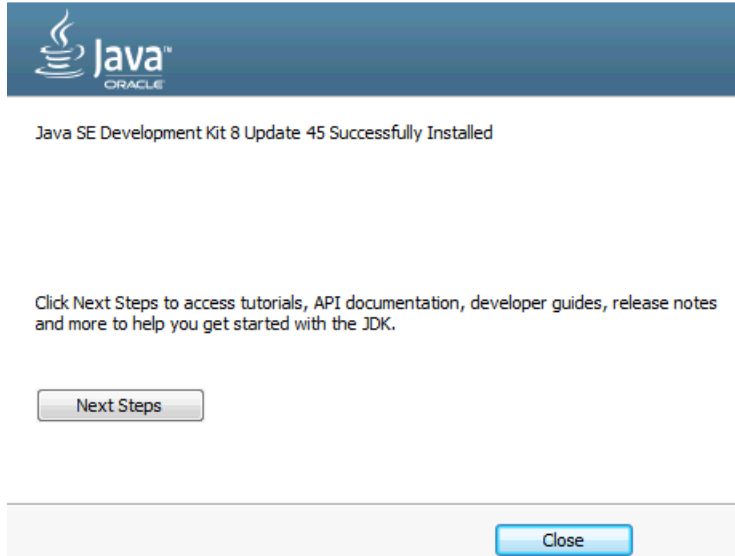
__5. The Destination Folder will appear, leave the default folder and click **Next**.



Note: The installation directory may be slightly different.

Wait until the software is completely installed.

__6. Click **Close**.



__7. Close any browser that appears 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~2\Java\jdk1.8.0_45
```

```
Copyright (c) 2000 Microsoft Corporation. All Rights Reserved.  
C:\Users\AdminUser>cd C:\Progra~2\Java\jdk1.8.0_45  
C:\PROGRA~2\Java\jdk1.8.0_45>_
```

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~1\Java\jdk1.8.0_45

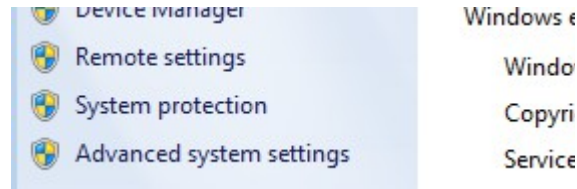
Some of the remaining steps will use the slightly different directory.

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

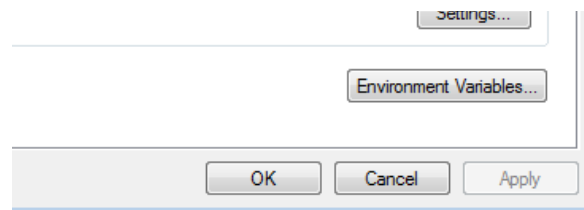
__4. Close the command prompt window.

__5. In the Windows Start Menu, right-click on the **Computer** link in the right-hand side of the Start panel, and then 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**.

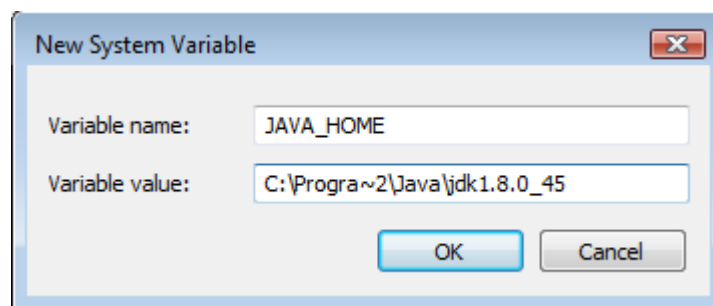


__8. Under the **System Variables** list, click the **New** button.

__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~2\Java\jdk1.8.0_45



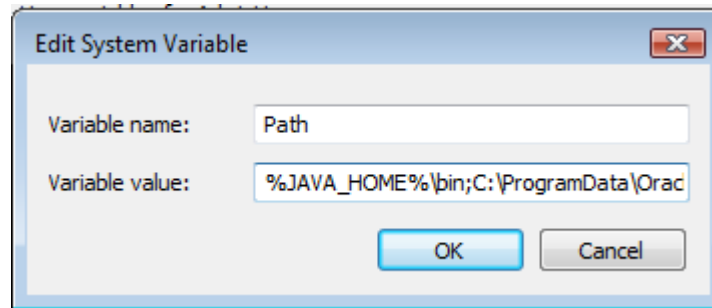
Note: If you are using a 32-bit OS you may have to use **C:\Progra~1\Java\jdk1.8.0_45**

__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 6 - Verification of JDK 8 Update 45

__ 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.

Note: You may see C:\Progra~1\Java\jdk1.8.0_45 or C:\Progra~2\Java\jdk1.8.0_45

__ 3. Enter the following command:

```
java -version
```

Make sure you see the response shown below.

```
C:\Users\AdminUser>java -version
java version "1.8.0_45"
Java(TM) SE Runtime Environment (build 1.8.0_45-b15)
Java HotSpot(TM) Client VM (build 25.45-b02, mixed mode)
C:\Users\AdminUser>_
```

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:\Users\AdminUser>javac
Usage: javac <options> <source files>
where possible options include:
-g          Generate all debugging info
-g:none    Generate no debugging info
-g:<lines,vars,source> Generate only some debugging info
```

__5. Close the command prompt window and any extra windows that are open.

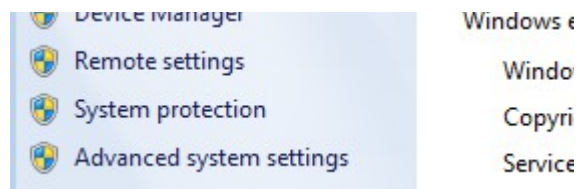
Java has been installed.

Part 7 - Install Maven 3.3.9

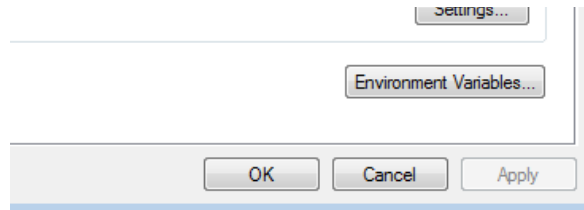
The following steps are based on Windows 7, other Windows versions instructions may vary.

__1. In the Windows Start Menu, right-click on the **Computer** link in the right-hand side of the Start panel, and then select **Properties**.

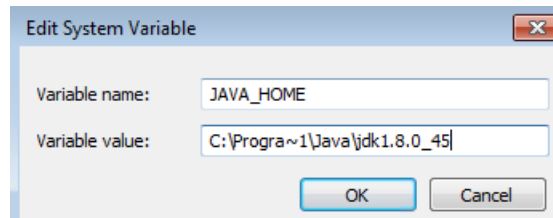
__2. Click on **Advanced system settings**.



__3. The system will display the **System Properties** dialog. Select the **Advanced** tab and click **Environment Variables**.



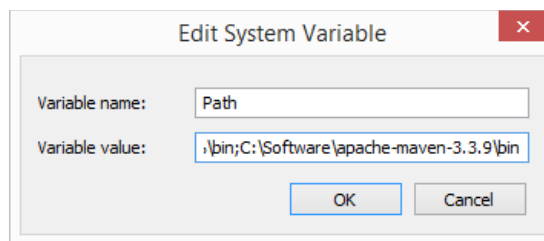
__4. Verify the JAVA_HOME variable is set to **C:\Progra~1\Java\jdk1.8.0_45** or similar path.



__5. In the 'System Variables' panel, locate the entry for 'Path' and double-click on it.

__6. Add the following to the **end** of the **Variable Value** field (including the semi-colon)

`;C:\Software\apache-maven-3.3.9\bin`



__7. Click **OK** on the variable editor dialog.

__8. Click **OK** on the **Environment Variables** dialog.

__9. Click **OK** in the **System Properties** dialog.

__10. Open a command prompt window (in the start menu, click **All Programs --> Accessories --> DOS Prompt**).

__11. In the command window, type:

```
mvn -version
```

__12. You should see output similar to:

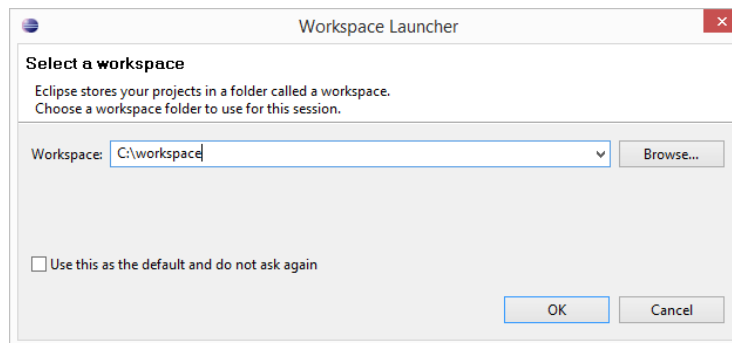
```
C:\Users\wasadmin>mvn -version
Apache Maven 3.3.9 (bb52d8502b132ec0a5a3f4c09453c07478323dc5; 2015-11-10T11:41:47-05:00)
Maven home: C:\Software\apache-maven-3.3.9\bin\..
Java version: 1.8.0_101, vendor: Oracle Corporation
Java home: C:\Program Files\Java\jdk1.8.0_101\jre
Default locale: en_US, platform encoding: Cp1252
OS name: "windows 8.1", version: "6.3", arch: "amd64", family: "dos"
```

Part 8 - Setup Maven in Eclipse

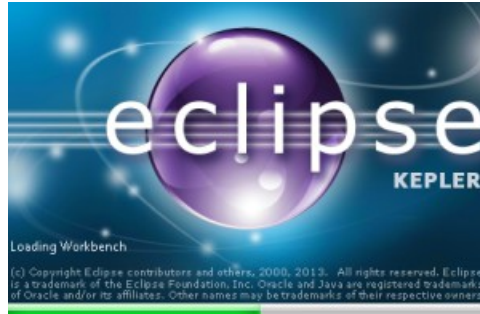
__1. Use Windows Explorer to navigate to **C:\Software\eclipse**, and then double-click on '**eclipse.exe**' to start up the IDE.

__2. You may see a security dialog. If so, un-check the box for “Always ask before opening this file” and then click **Run**.

__3. Change the workspace to **C:\Workspace** and click **OK**.



__4. Eclipse Kepler will start launching.



__5. Once started, close Eclipse.

__6. Close all.

Part 9 - Jenkins Installation

__1. Open a command prompt window and ensure that the Java JDK is installed.

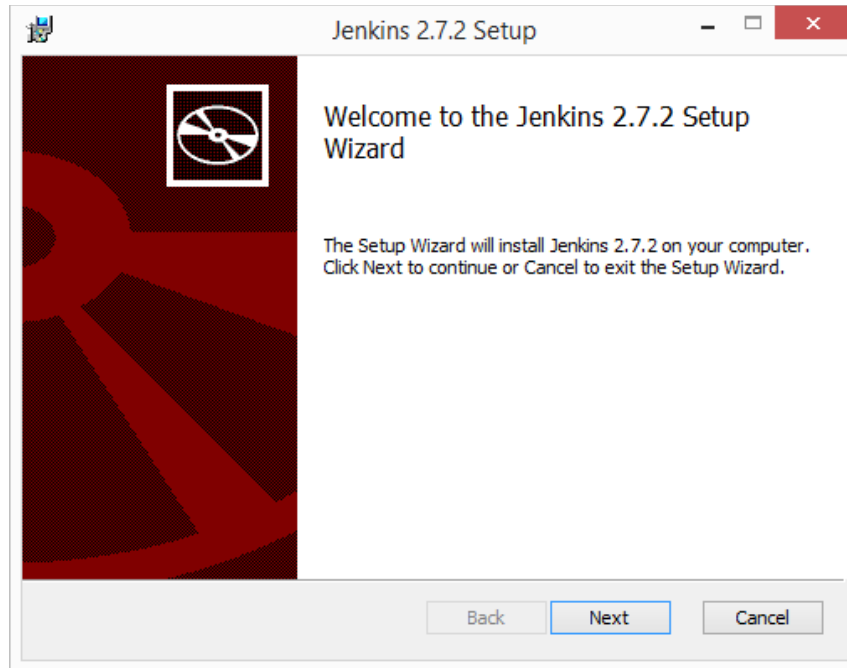
```
java -version
```

```
C:\Users\wasadmin>java -version
java version "1.8.0_45"
Java(TM) SE Runtime Environment (build 1.8.0_45-b14)
Java HotSpot(TM) Client VM (build 25.45-b02, mixed mode)
```

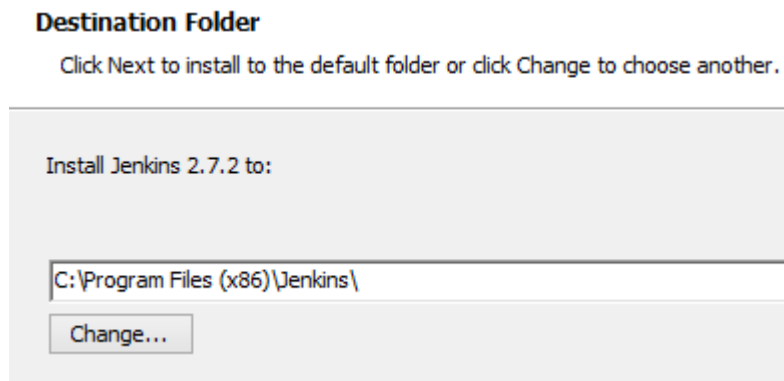
__2. In Windows Explorer, navigate to **C:\Software\jenkins-2.7.2**

__3. Double-click on '**jenkins.msi**'. The installer will show the initial dialog.

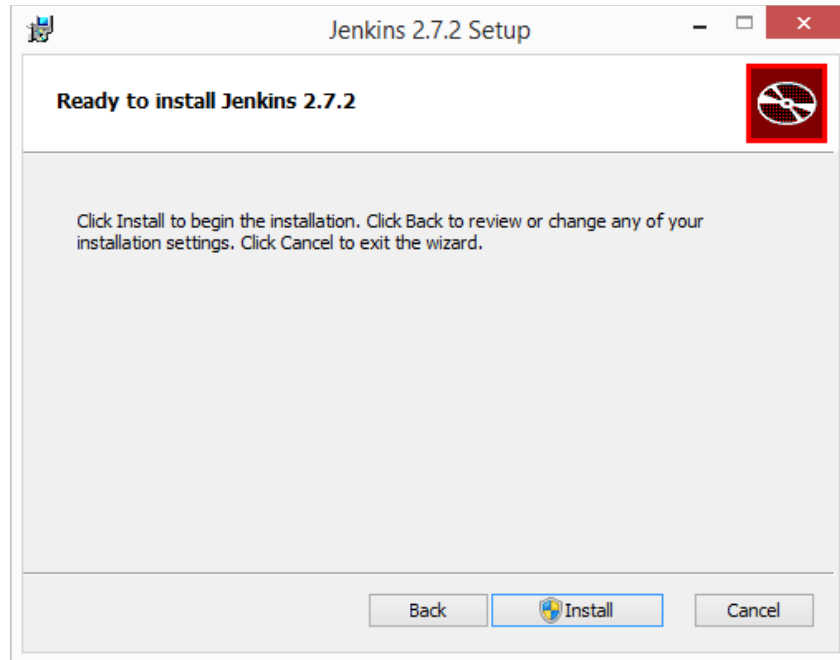
__4. Click **Next**.



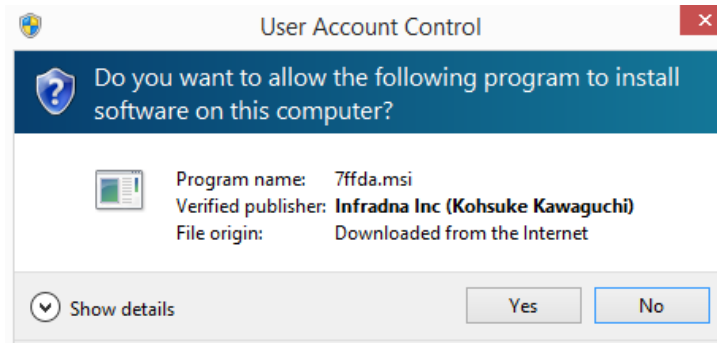
__5. On the **Destination Folder** panel, leave the defaults and click **Next**.



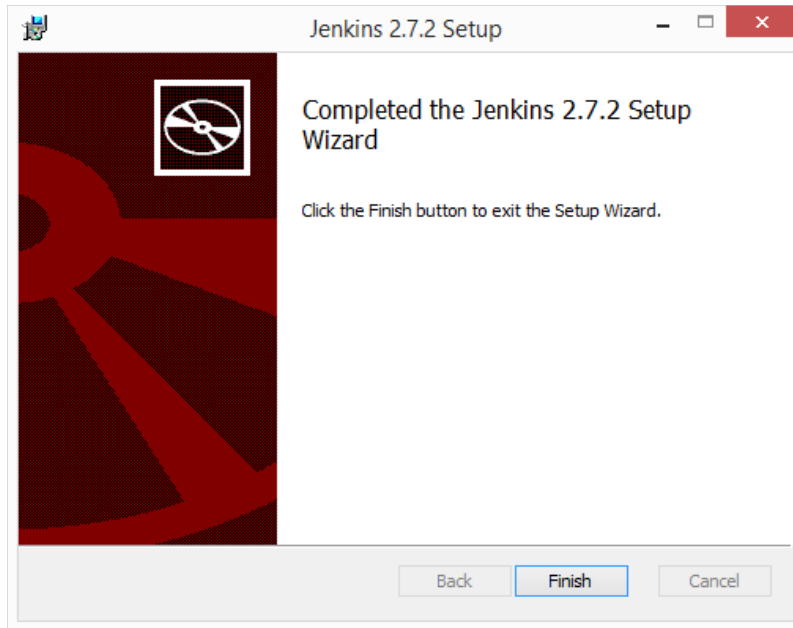
__6. On the **Ready to Install...** panel, click **Install**.



__7. Windows may show a security dialog. If it does, click **Yes**.



__8. In the final dialog panel, click **Finish**.



__9. If you see the **Create First Admin User** screen then click Jenkins.



__10. The installer will open a browser window to the Jenkins home page. The page shows the location of a file where you can find the initial administration password, and also a text box to enter the password into.

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

```
C:\Program Files\Jenkins\secrets\initialAdminPassword
```

__11. Open the indicated file with an editor such as Notepad, and copy the password to the clipboard with Ctrl-C.

__12. Paste the password into the **Administrator Password** box.

C:\Program Files\Jenkins\secrets\initialAdminPassword

Please copy the password from either location and paste it below.

Administrator password

__13. Click **Continue**.

__14. If you are prompted to save the password just close that window.

__15. Click on **Install Suggested Plugins**

Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

Install suggested plugins

Install plugins the Jenkins community finds most useful.

Select plugins to install

Select and install plugins most suitable for your needs.

__16. Getting Started will begin. Wait until is done.

Getting Started

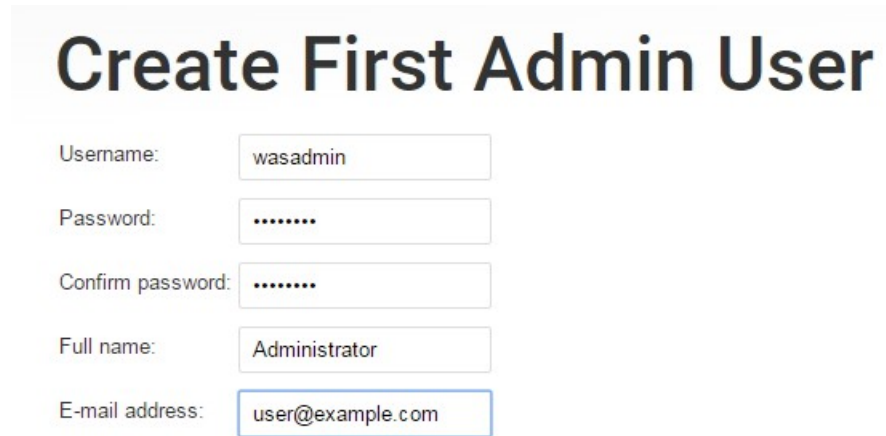
✓ Folders Plugin	✓ OWASP Markup Formatter Plugin	✓ build timeout plugin	✓ Credentials Binding Plugin	** Jenkins G
✓ Timestamper	✓ Workspace Cleanup Plugin	✓ Ant Plugin	✓ Gradle Plugin	** Pipeline:
✓ Pipeline	⚙️ GitHub Organization Folder Plugin	✓ Pipeline: Stage View Plugin	✓ Git plugin	Libraries
⚙️ Subversion Plug-in	⚙️ SSH Slaves plugin	✓ Matrix Authorization	✓ PAM Authentication	** Branch AP
				** Pipeline:
				** Durable T
				** Pipeline:
				Processes
				** Pipeline:
				** Pipeline:
				** Pipeline:

__17. In the **Create First Admin User** screen. Enter the following fields:

Username: wasadmin

Password: wasadmin
Confirm Password: wasadmin
Full name: Administrator
E-mail address: user@example.com

__18. When the input looks like below, click **Save and Finish**.



Create First Admin User

Username:

Password:

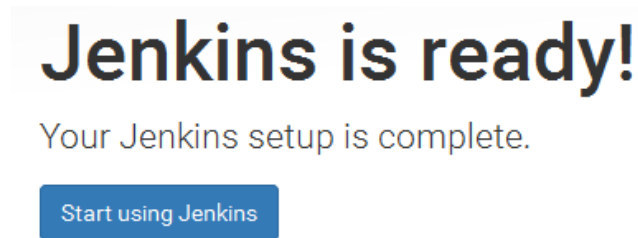
Confirm password:

Full name:

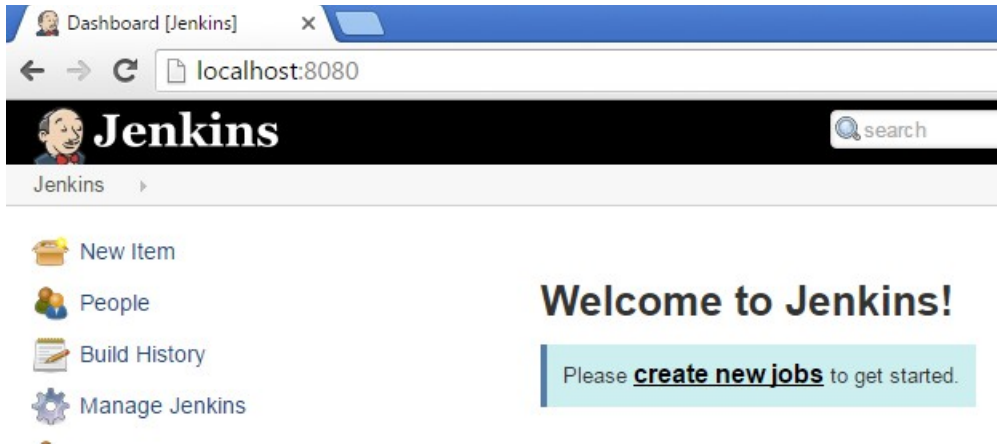
E-mail address:

__19. If you are prompted to save the password just close that window.

__20. You will see that Jenkins is ready. Click **Start using Jenkins**.



__21. Jenkins will open.



__22. Jenkins installation is complete. Close the browser.

__23. Close all open windows.

Part 10 - Installing GIT

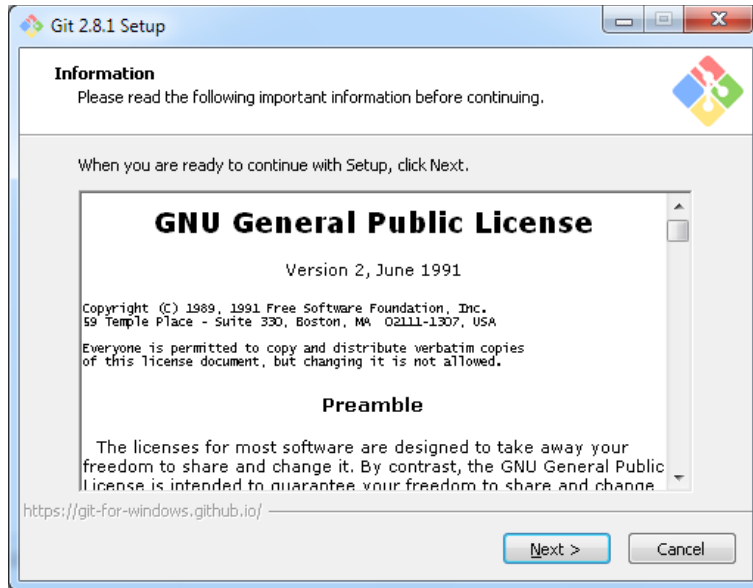
IMPORTANT: Setup is easy but you need to make sure you do the change in Step 7.

__1. From the **C:\Software** directory run the following file:

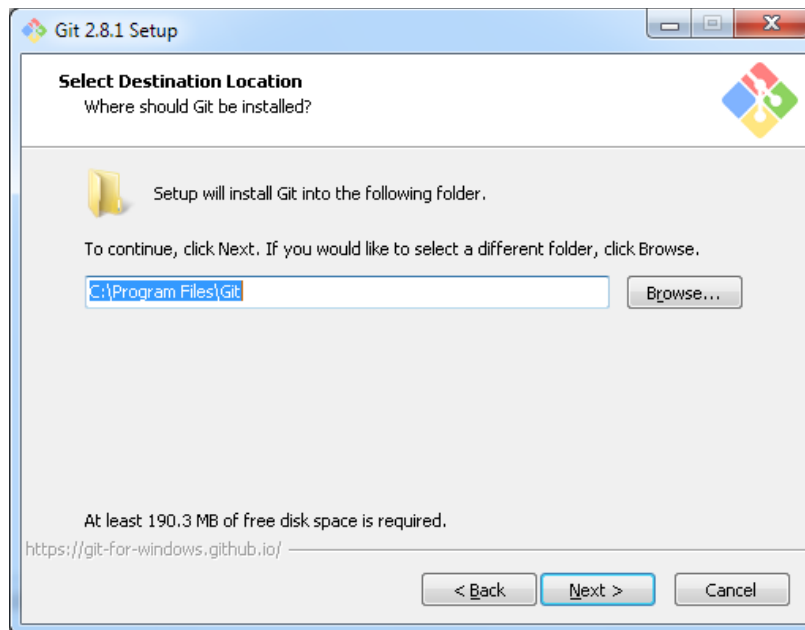
Git-2.8.1-32-bit.exe

__2. You may need to allow the program to run.

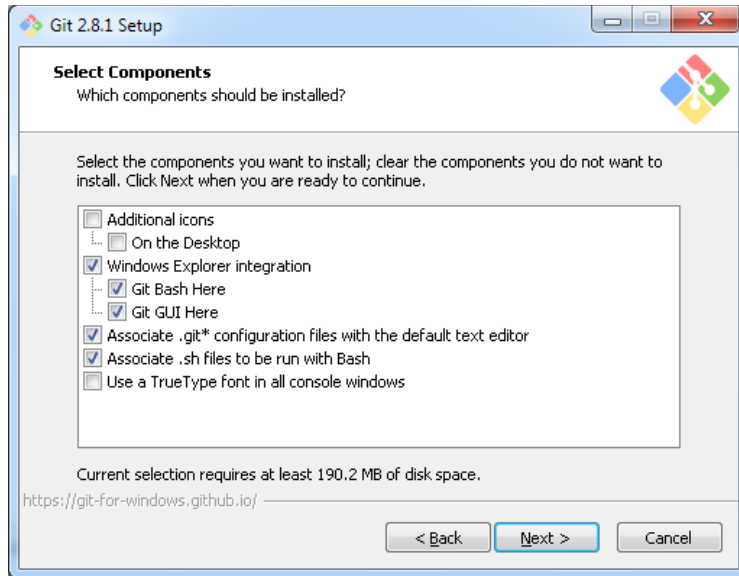
__3. Click **Next**.



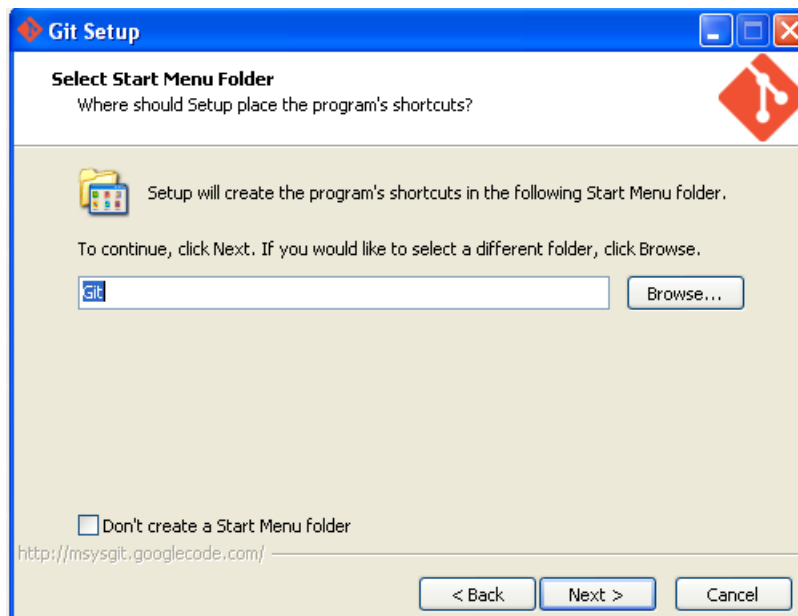
4. Click Next.



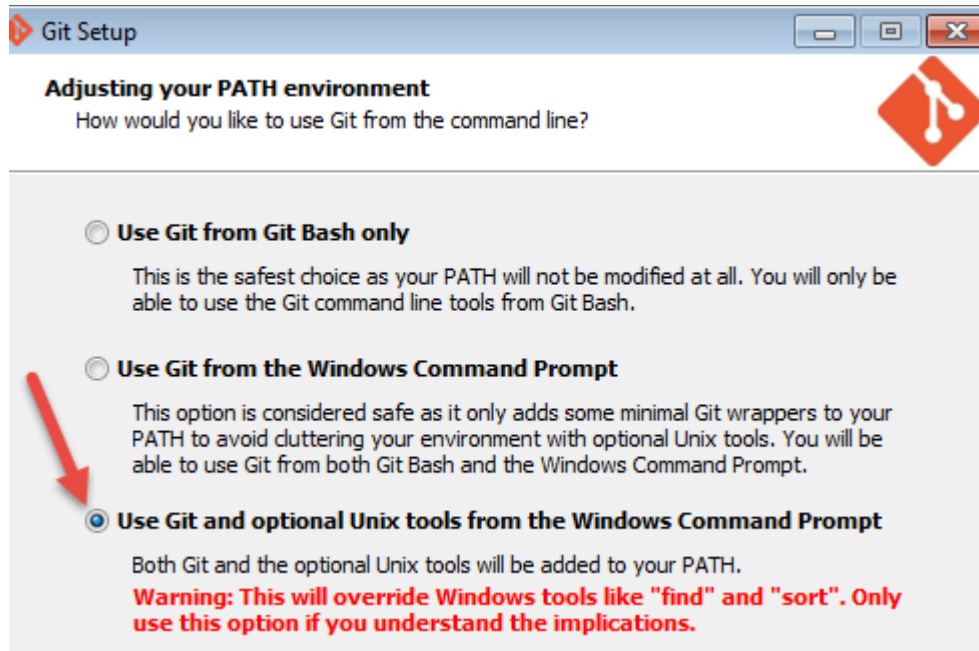
5. Click Next.



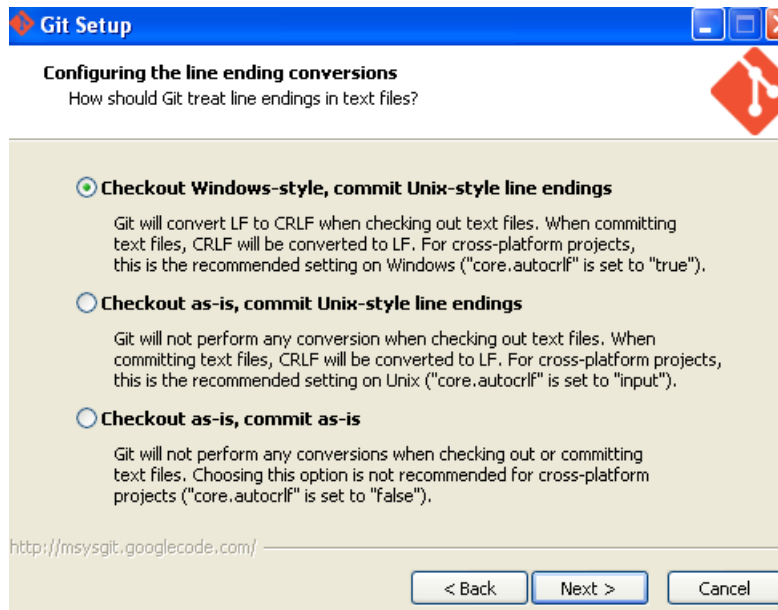
__6. Click **Next**.



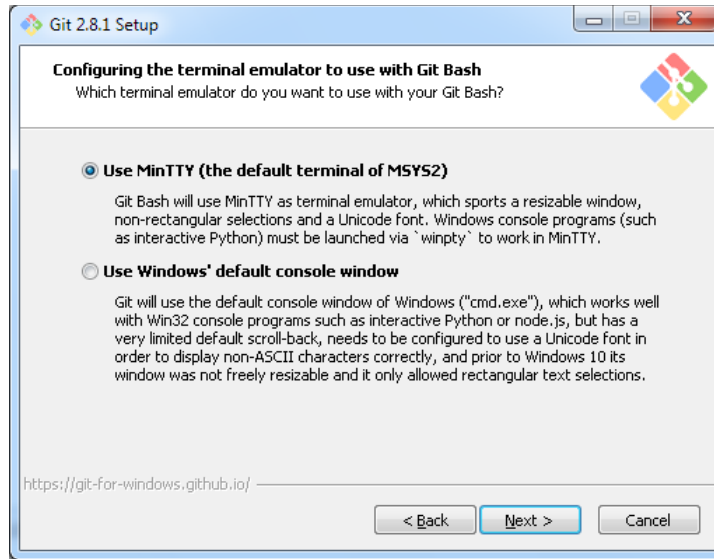
__7. Select **Use Git and Optional Unix tools from the Windows Command Prompt** as shown below and click **Next**.



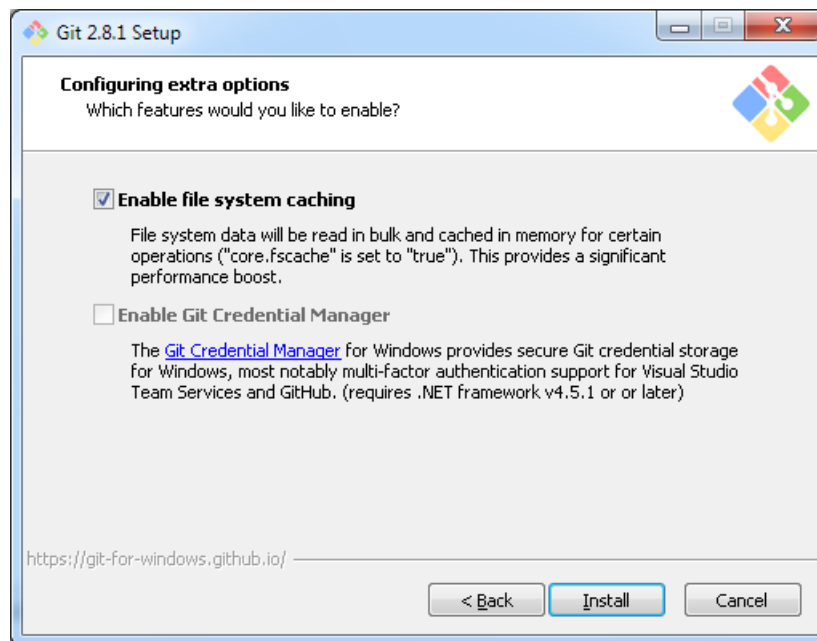
__8. Click Next.



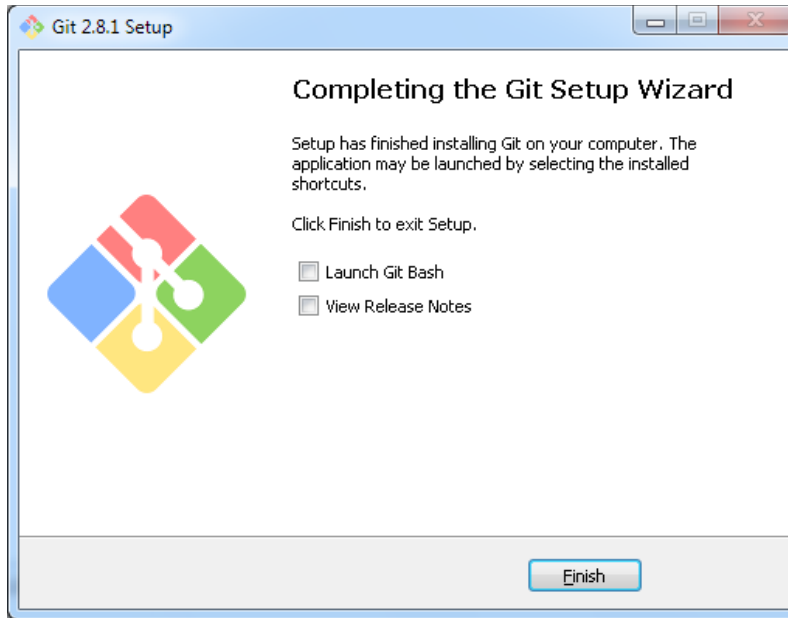
__9. Click Next.



__10. Click **Install**.



__11. De-select **View Release Notes**, and then click **Finish**.



__12. Close all open files.

Part 11 - 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