

**WA2171 Programming Java SOAP  
and REST Web Services -  
WebSphere 8.5 - Eclipse**

**Classroom Setup Guide**

**Web Age Solutions Inc.**

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## **Part 1 - Minimum Hardware Requirements**

- 4 GB RAM minimum
- 10 GB in the hard disk
- Connectivity to the Internet

## **Part 2 - Minimum Software Requirements**

- Windows 7 (Professional, Enterprise, or Ultimate) – 64 bits
- Mozilla, Chrome and IE (latest versions)
- IBM Installation Manager \*
- WebSphere 8.5 for Developers \*
- Java 8 \*
- Eclipse \*
- REST \*

\* - indicates software provided as part of the courseware.

## **Part 3 - Software Provided**

List of ZIP files required for this course and used in next steps on this document:

**WA2171\_REL\_1\_0.ZIP**

Send an email to [support@webagesolutions.com](mailto:support@webagesolutions.com) in order to obtain a copy of the software for this course if you haven't receive it yet.

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

This course has to be installed directly on the computers that the students will use. Virtualization is not supported.

- \_\_\_ 1. Make an administrative user for the students and install the software with this user.
- \_\_\_ 2. Extract the **ZIP** file to C:\
- \_\_\_ 3. Review that the following folders were created:
  - **C:\LabFiles**
  - **C:\Software\eclipse\**
  - **C:\Software\IBM\**
  - **C:\Software\RESTClient**
- \_\_\_ 4. Review that the following file was created:
  - **C:\Software\jdk-8u171-windows-x64.exe**
  - **C:\Software\wdt-update-site\_18.0.0.1.v20180313\_0201.zip**
- \_\_\_ 5. Make sure Mozilla, Chrome and IE have been installed.

## Part 5 - Installing JDK 8 Update 171 (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-8u171-windows-x64.exe**

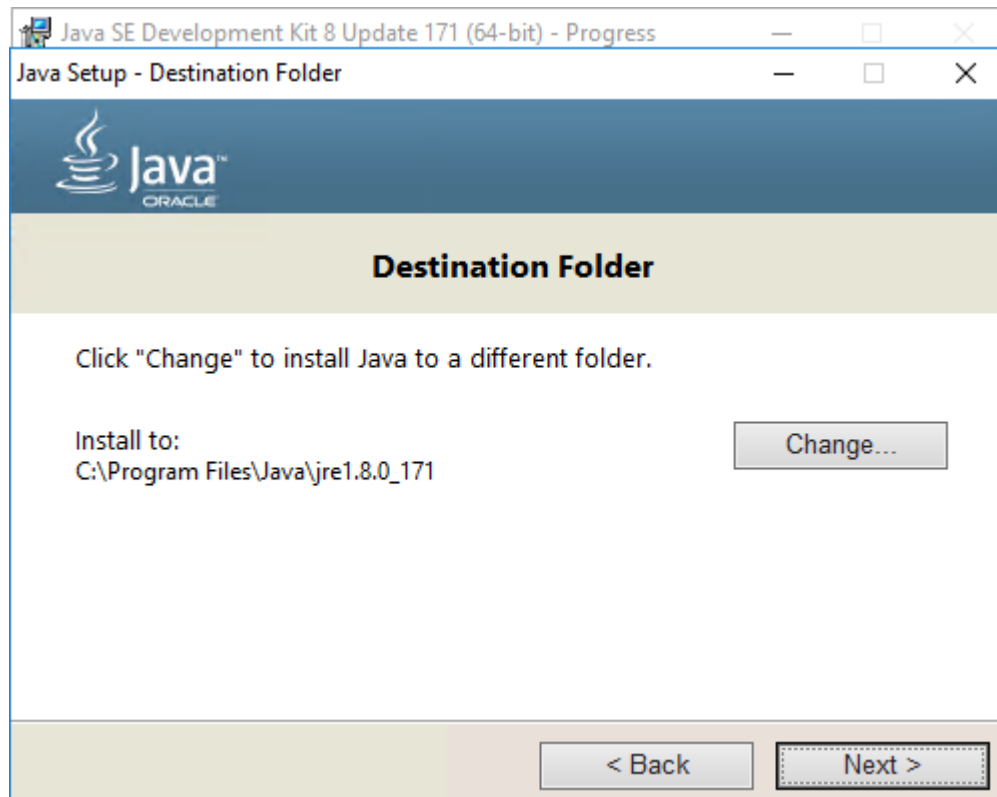
**Note:** If a security prompt open, allow the installation to continue.

\_\_\_ 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.

The installation will begin installing files.

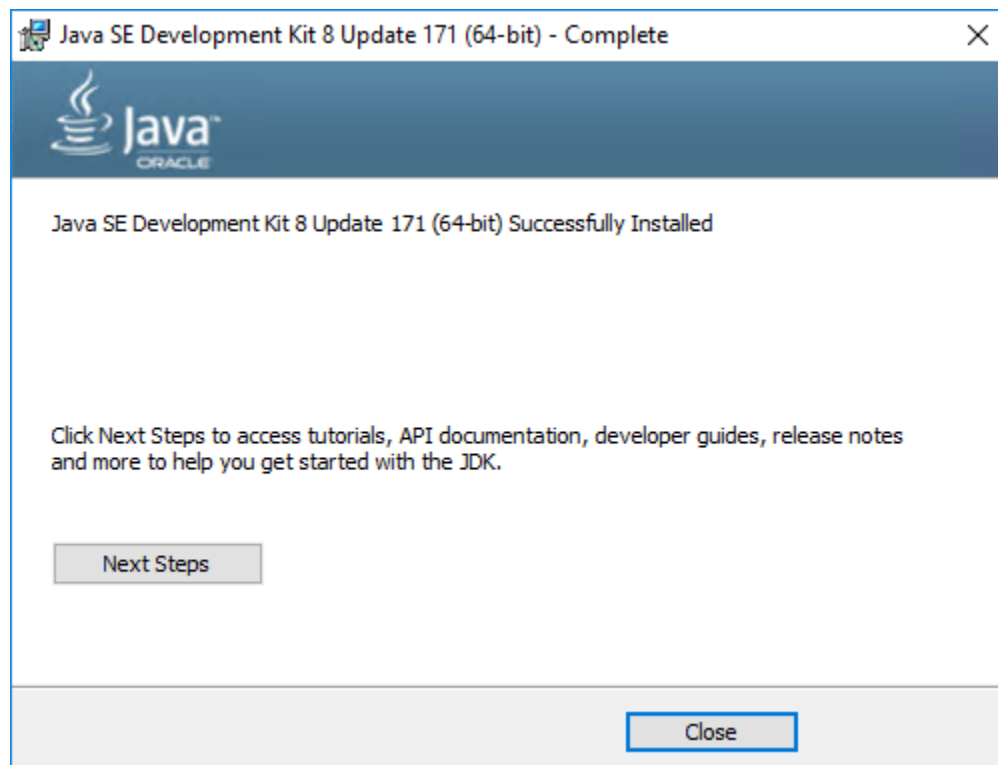
\_\_\_5. The **Destination Folder** will appear, leave the default folder and click **Next**.



**Note:** The installation directory may be slightly different.

Wait until the software is completely installed.

\_\_\_6. Click **Close**.



### ***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\jdk1.8.0_171
```

**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\jdk1.8.0\_171**

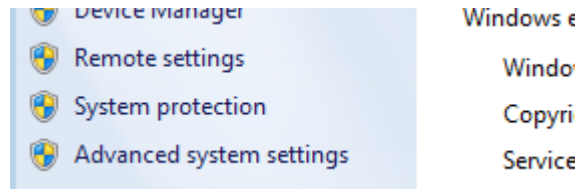
Some of the remaining steps will use the slightly different directory.

\_\_3. Make sure you can reach the java folder and remember the value entered because you will use this value in the following steps.

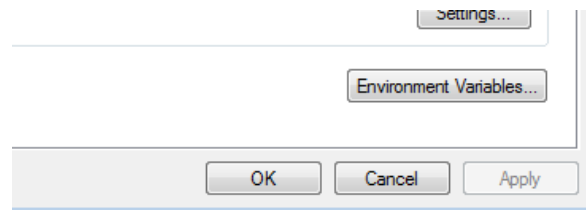
\_\_4. Close the command prompt window.

\_\_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*.

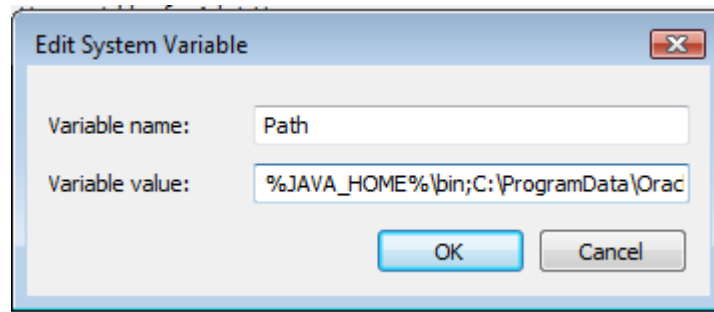
**C:\Progra~1\Java\jdk1.8.0\_171**

\_\_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 JDK 8\_0\_171

\_\_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.

```
java version "1.8.0_171"
```

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. Enter the following command:

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

Make sure you see the response shown below.

```
sun.arch.data.model = 64
```

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.

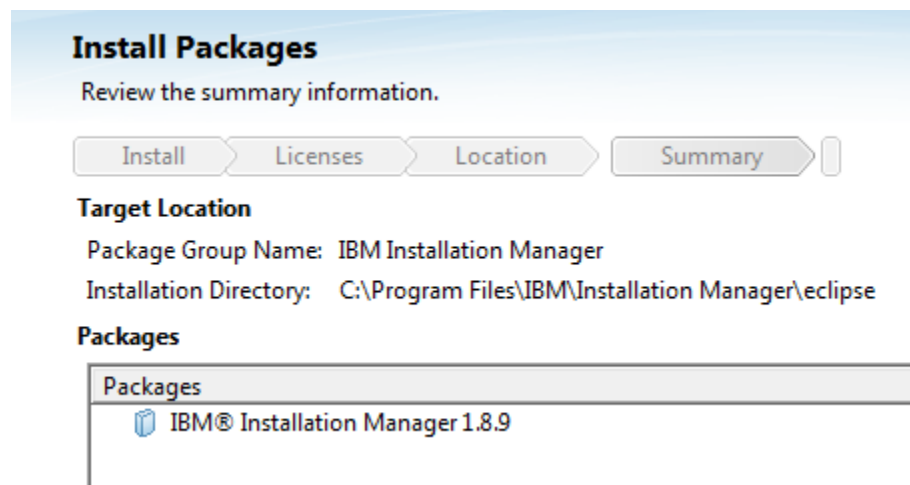
Java has been installed.

## Part 7 - Setup for WebSphere 8.5 for Developers on Eclipse

### Installation

#### WebSphere Installation Manager

1. Make sure you are logged in as an administrative user.
2. Go to **C:\Software\IBM** that is the folder where Installation Manager package has been extracted.
3. Run the '**install.exe**' file and confirm any security prompts about installing.
4. Installation Manager should already be selected for install so click the **Next** button.
5. Agree to the license and click the **Next** button.
6. Accept the default installation Location and click the **Next** button.
7. Click **Install** to start the installation.



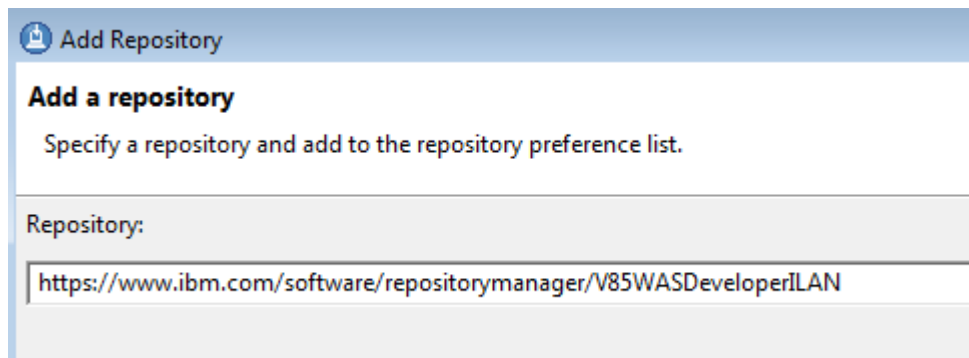
8.

9. Once installation is complete, click the **Restart Installation Manager** button.
10. Leave the tool open for the next section.

## WebSphere Application Server Traditional

For this section you will need an IBM ID and password.

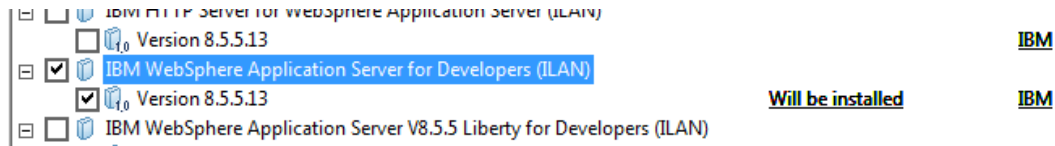
1. Make sure the IBM Installation Manager is still running and start it if it is not.
2. In Installation Manager, go to **File > Preferences**.
3. In the 'Repositories' properties that should be open, click the **Add Repository** button on the right.
4. Fill in 'https://www.ibm.com/software/repositorymanager/V85WASDeveloperILAN' for the repository location and click the **OK** button.



You will be prompted to enter your IBM ID and password. If you do not have one there are some links to open web pages to help.

5. Once your IBM ID and password is entered, check the '**Save password**' box and click the **OK** button to save the IBM ID settings.
6. Since you selected to save the password, you will be prompted to enter a new master password. This is not for the IBM ID but just to store passwords locally. Enter and confirm any value that you will remember if needed and click the **OK** button. For example "wasadmin".
7. Once the WebSphere 8.5 repository is listed, click the **OK** button to close the preferences.
8. Back in the main Installation Manager screen, click the **Install** button.

9. There will be several different packages that eventually come up and are available for installation. Check the box next to the '**IBM WebSphere Application Server for Developers (ILAN)**' and click the **Next** button.



10. After a minute the different packages to install will be listed. Leave all the default selections and click the **Next** button.
11. Agree to the license and click the **Next** button.
12. **CHANGE** the 'Shared Resources Directory' to '**C:\IBM\IMShared**' and click the **Next** button.
13. **CHANGE** the 'Installation Directory' to '**C:\IBM\WebSphere\AppServer**' and click the **Next** button.
14. Leave the default language and click the **Next** button.
15. Accept the default features to install and click the **Next** button.
16. Leave the option to use Java SE 6 **UNCHECKED** and click the **Next** button.
17. On the final installation screen, check that both directories listed are subfolders of '**C:\IBM**' then click the **Install** button to begin the installation.
18. Once finished, check the packages were successfully installed. **CHANGE** the option for the tool to start to '**Profile Management Tool to create an application server profile for a development environment**' and click the **Finish** button.

Which program do you want to start?

<input type="radio"/>	Profile Management Tool to create a profile.
<input checked="" type="radio"/>	Profile Management Tool to create an application server profile for a development environment
<input type="radio"/>	None

19. Once the Profile Management Tool opens, you should see a screen for administrative security. Leave the option to enable administrative security checked, fill in a user and password of '**wasadmin**' and click the **Next** button.
20. Once the summary of the profile that will be created appears, click the **Create** button.
21. After the profile is created, **UNCHECK** the box to launch the First Steps console and click the **Finish** button.
22. If the IBM Installation Manager is still open, click **File > Exit** to close it.

### Eclipse and WebSphere Developer Tools

1. Open "C:\Software\eclipse" folder.
2. **Do not start Eclipse.**
3. Make a backup copy of the '**eclipse.ini**' file.
4. Open the eclipse.ini file in a text editor like Wordpad.
5. Make sure the text editor is not wrapping lines so you can clearly see where the line breaks in the file are.
6. Modify the contents of the file by adding the lines in bold below. These are immediately before and after the '**-vmargs**' line. Below is not the entire contents of the file but just a few lines before and after the changes to provide context. The settings below assume that IBM WebSphere Application Server was installed to 'C:\IBM\WebSphere\AppServer' so you may want to check this location is correct.

```
--launcher.defaultAction  
openFile  
--launcher.appendVmargs  
-vm  
C:\IBM\WebSphere\AppServer\java\jre\bin\javaw.exe  
-vmargs  
-Xscmx48m  
-Xshareclasses:name=IBMSDP_%u  
-Xquickstart  
-Xgcpolicy:gencon  
-Xmnx64m  
-Dcom.ibm.ws.management.event.max_polling_interval=1000  
-Dosgi.requiredJavaVersion=1.8  
-Dosgi.instance.area.default=@user.home/eclipse-workspace
```

7. Double check the settings again and save and close the file.
8. Once the 'eclipse.ini' file is modified and saved, open Eclipse by running the 'eclipse.exe' file.
9. Change the workspace to 'C:\workspace' and click **Launch** to open Eclipse.
10. Once Eclipse opens, select '**Help > Install New Software**'
11. In the 'Available Software' dialog, click the **Add** button in the top right.
12. Fill in a name of '**WDT Archive**'.
13. Click the '**Archive**' button and find the 'C:\Software\wdt-update-site\_18.0.0.1.v20180313\_0201.zip' file and click the **Open** button to select the file.
14. Once the options for name and location are selected in the 'Add Repository' dialog, click the **OK** button.
15. Once loaded, expand the entry for 'WebSphere Application Server Developer Tools for Eclipse' and pick the following options only.
  1. Web Development Tools
  2. Web Services Development Tools
  3. WebSphere Application Server V8.5 Tools



16. Once the above 3 tools categories are selected, click the **Next** button.
17. Confirm the 3 tool groups are selected and click the **Next** button again.
18. Accept the license and click the **Finish** button to begin installing software. You may not see a dialog but the progress should be shown in the lower right corner.
19. Once finished installing, click 'Restart Now' to restart Eclipse.
20. Once Eclipse restarts, close the **Welcome** page if it is open.

21. Select the **Servers** view in the group of views along the bottom of the workspace.
22. Right click in the empty area of the view and select **New > Server**
23. Select **IBM > WebSphere Application Server traditional V8.5** and click the **Next** button.
24. Click the **Browse** button and select 'C:\IBM\WebSphere\AppServer' for the Installation directory. The JRE should be filled in automatically.
25. Click the **Next** button once the runtime properties are filled in.
26. On the server properties, the profile should automatically be selected.
27. **Uncheck** the box for '**Run server with resources within the workspace**'
28. Fill in a user and password of '**wasadmin**' which should match the values used during the profile creation.

Profile name: (with write permission) AppSrv01

Server connection types and administrative ports

☒ Automatically determine connection settings  
☐ Manually provide connection settings

Connection Type	Port	Default port	Description
<input checked="" type="checkbox"/> IPC	9633	9633	Recommendation
<input checked="" type="checkbox"/> RMI	2809	2809	Design
<input checked="" type="checkbox"/> SOAP	8880	8880	Design

☐ Run server with resources within the workspace  
☒ Security is enabled on this server

Current active authentication settings:

User ID: wasadmin  
 Password: ••••••••

Application server name: server1

29. Once the settings are filled in as described, click the **Finish** button.
30. The server may automatically start up. Right click and select **Start** if it does not.
31. Check that the server shows a status of 'Started'
32. Right click the server and select **Stop**.
33. Select **File > Exit** to close Eclipse.

## **Part 8 - Summary**

**You have successfully installed the software for this course!**

If you have any question please contact us by email at [support@webagesolutions.com](mailto:support@webagesolutions.com)

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

International call: 416-406-3994 ext. 26