JSF - ENVIRONMENT SETUP

http://www.tutorialspoint.com/jsf/jsf_environment_setup.htm

This tutorial will guide you on how to prepare a development environment to start your work with JSF Framework. This tutorial will also teach you how to setup JDK, Eclipse, Maven, and Tomcat on your machine before you setup JSF Framework:

System Requirement

JSF requires JDK 1.5 or higher so the very first requirement is to have JDK installed in your machine.

JDK	1.5 or above.
Memory	no minimum requirement.
Disk Space	no minimum requirement.
Operating System	no minimum requirement.

Follow the given steps to setup your environment to start with JSF application development.

Step 1 - Verify Java installation on your machine

Now open console and execute the following **java** command.

OS	Task	Command
Windows	Open Command Console	c:\> java -version
Linux	Open Command Terminal	$ java -version
Mac	Open Terminal	machine:~ joseph$ java -version

Let's verify the output for all the operating systems:

OS	Generated Output
Windows	java version "1.6.0_21" JavaTM SE Runtime Environment $build1.6.0_21 - b07$ Java HotSpotTM Client VM $build17.0 - b17, mixedmode, sharing$
Linux	java version "1.6.0_21" JavaTM SE Runtime Environment $build1.6.0_21 - b07$ Java HotSpotTM Client VM $build17.0 - b17, mixedmode, sharing$
Mac	java version "1.6.0_21" JavaTM SE Runtime Environment $build1.6.0_21 - b07$ Java HotSpotTM64-Bit Server VM $build17.0 - b17, mixedmode, sharing$

Step 2 - Setup Java Development Kit *JDK*:

If you do not have Java installed then you can install the Java Software Development Kit *SDK* from Oracle's Java site: [Java SE Downloads](). You will find instructions for installing JDK in downloaded files, follow the given instructions to install and configure the setup. Finally set PATH and JAVA_HOME environment variables to refer to the directory that contains java and javac, typically java_install_dir/bin and java_install_dir respectively.

Set the **JAVA_HOME** environment variable to point to the base directory location where Java is installed on your machine. For example

OS	Output
Windows	Set the environment variable JAVA_HOME to C:\Program Files\Java\jdk1.6.0_21
Linux	export JAVA_HOME=/usr/local/java-current
Mac	export JAVA_HOME=/Library/Java/Home

Append Java compiler location to System Path.

OS	Output
Windows	Append the string ;%JAVA_HOME%\bin to the end of the system variable, Path.
Linux	export PATH=*PATH*:JAVA_HOME/bin/
Mac	not required

Alternatively, if you use an Integrated Development Environment *IDE* like Borland JBuilder, Eclipse, IntelliJ IDEA, or Sun ONE Studio, compile and run a simple program to confirm that the IDE knows where you installed Java, otherwise do proper setup as given document of the IDE.

Step 3 - Setup Eclipse IDE

All the examples in this tutorial have been written using Eclipse IDE. So I would suggest you should have latest version of Eclipse installed on your machine based on your operating system.

To install Eclipse IDE, download the latest Eclipse binaries with WTP support from http://www.eclipse.org/downloads/. Once you downloaded the installation, unpack the binary distribution into a convenient location. For example in C:\eclipse on windows, or /usr/local/eclipse on Linux/Unix and finally set PATH variable appropriately.

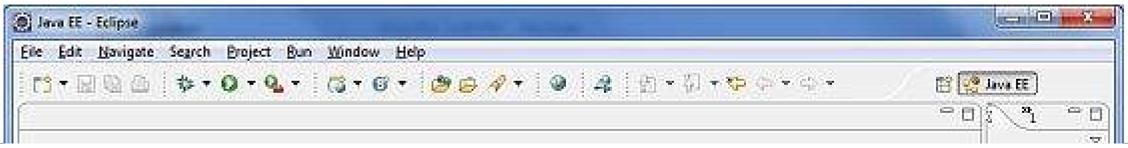
Eclipse can be started by executing the following commands on windows machine, or you can simply double click on eclipse.exe

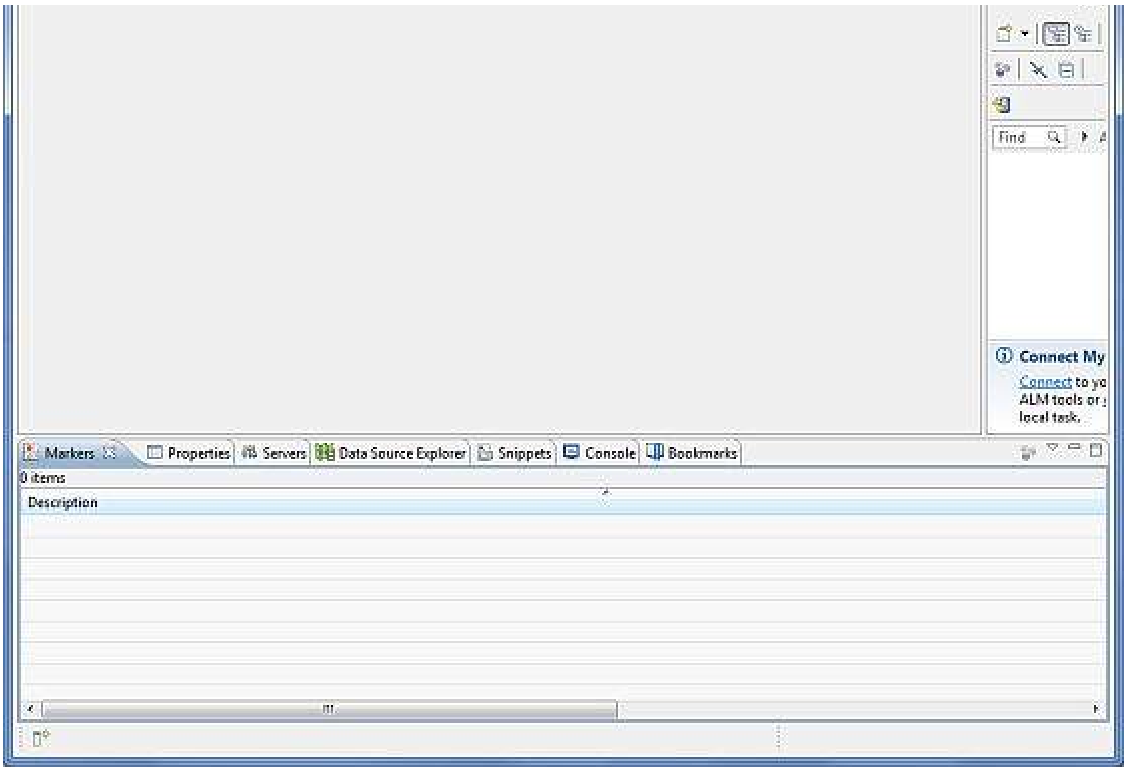
```
 %C:\eclipse\eclipse.exe
```

Eclipse can be started by executing the following commands on Unix *Solaris, Linux, etc.* machine:

```
$/usr/local/eclipse/eclipse
```

After a successful startup, if everything is fine then it should display following result:





***Note:** Install m2eclipse plugin to eclipse using following eclipse software update site

m2eclipse Plugin - http://m2eclipse.sonatype.org/update/.

This plugin enables developers to run maven commands within eclipse with embedded/external maven installation.

Step 4: Download Maven archive

Download Maven 2.2.1 from http://maven.apache.org/download.html

OS	Archive name
Windows	apache-maven-2.0.11-bin.zip
Linux	apache-maven-2.0.11-bin.tar.gz
Mac	apache-maven-2.0.11-bin.tar.gz

Step 5: Extract the Maven archive

Extract the archive, to the directory you wish to install Maven 2.2.1. The subdirectory apache-maven-2.2.1 will be created from the archive.

OS	Location *canbedifferentbasedonyourinstallation*
Windows	C:\Program Files\Apache Software Foundation\apache-maven-2.2.1
Linux	/usr/local/apache-maven
Mac	/usr/local/apache-maven

Step 6: Set Maven environment variables

Add M2_HOME, M2, MAVEN_OPTS to environment variables.

OS	Output
Windows	Set the environment variables using system properties. *M2_HOME=C:\Program Files\Apache Software Foundation\apache-maven-2.2.1* *M2=%M2_HOME%\bin* *MAVEN_OPTS=-Xms256m -Xmx512m*
Linux	Open command terminal and set environment variables. *export M2_HOME=/usr/local/apache-maven/apache-maven-2.2.1* *export M2=%M2_HOME%\bin* *export MAVEN_OPTS=-Xms256m -Xmx512m*
Mac	Open command terminal and set environment variables. *export M2_HOME=/usr/local/apache-maven/apache-maven-2.2.1* *export M2=%M2_HOME%\bin* *export MAVEN_OPTS=-Xms256m -Xmx512m*

Step 7: Add Maven bin directory location to system path

Now append M2 variable to System Path

OS	Output
Windows	Append the string ;%M2% to the end of the system variable, Path.
Linux	export PATH=$M2:$PATH
Mac	export PATH=$M2:$PATH

Step 8: Verify Maven installation

Now open console, execute the following **mvn** command.

OS	Task	Command
Windows	Open Command Console	c:\> mvn --version
Linux	Open Command Terminal	$ mvn --version
Mac	Open Terminal	machine:~ joseph$ mvn --version

Finally, verify the output of the above commands, which should be something as follows:

OS	Output
Windows	Apache Maven 2.2.1 $r801777; 2009-08-0700:46:01+0530$

	Java version: 1.6.0_21 Java home: C:\Program Files\Java\jdk1.6.0_21\jre
Linux	Apache Maven 2.2.1 $r801777; 2009-08-0700:46:01+0530$ Java version: 1.6.0_21 Java home: C:\Program Files\Java\jdk1.6.0_21\jre
Mac	Apache Maven 2.2.1 $r801777; 2009-08-0700:46:01+0530$ Java version: 1.6.0_21 Java home: C:\Program Files\Java\jdk1.6.0_21\jre

Step 9: Setup Apache Tomcat:

You can download the latest version of Tomcat from http://tomcat.apache.org/. Once you downloaded the installation, unpack the binary distribution into a convenient location. For example in C:\apache-tomcat-6.0.33 on windows, or /usr/local/apache-tomcat-6.0.33 on Linux/Unix and set CATALINA_HOME environment variable pointing to the installation locations.

Tomcat can be started by executing the following commands on windows machine, or you can simply double click on startup.bat

```
%CATALINA_HOME%\bin\startup.bat

or

C:\apache-tomcat-6.0.33\bin\startup.bat
```

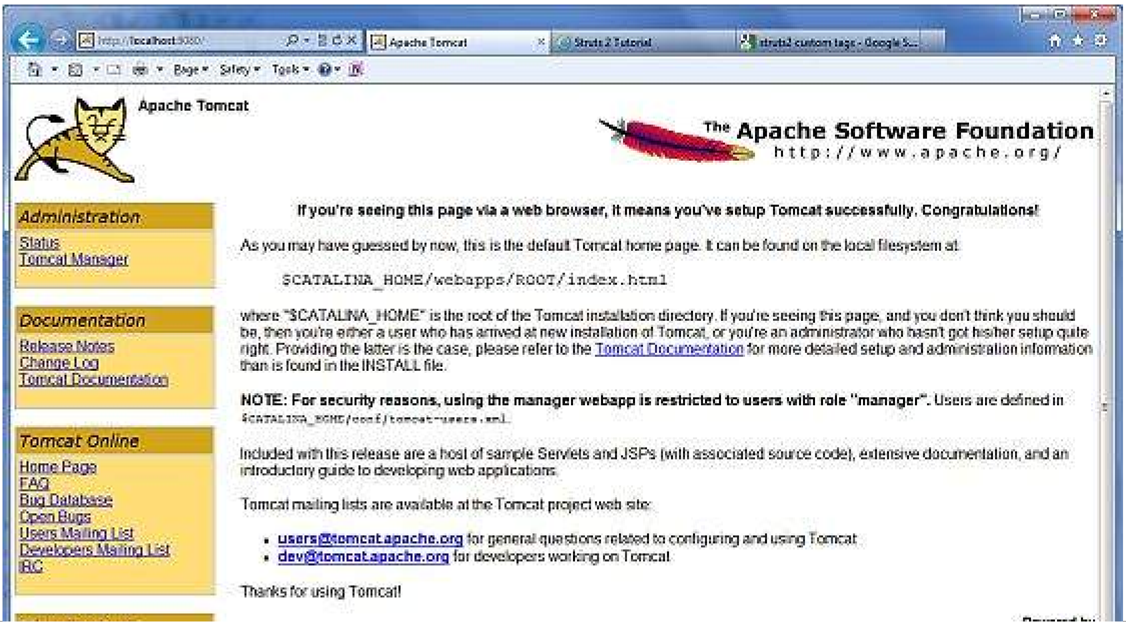
Tomcat can be started by executing the following commands on Unix *Solaris, Linux, etc.* machine:

```
$CATALINA_HOME/bin/startup.sh

or

/usr/local/apache-tomcat-6.0.33/bin/startup.sh
```

After a successful startup, the default web applications included with Tomcat will be available by visiting **http://localhost:8080/**. If everything is fine then it should display following result:



If you're seeing this page via a web browser, it means you've setup Tomcat successfully. Congratulations!

As you may have guessed by now, this is the default Tomcat home page. It can be found on the local filesystem at:

```
$CATALINA_HOME/webapps/ROOT/index.html
```

where "$CATALINA_HOME" is the root of the Tomcat installation directory. If you're seeing this page, and you don't think you should be, then you're either a user who has arrived at new installation of Tomcat, or you're an administrator who hasn't got his/her setup quite right. Providing the latter is the case, please refer to the Tomcat Documentation for more detailed setup and administration information than is found in the INSTALL file.

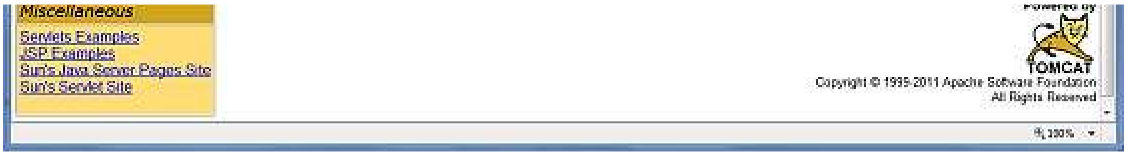
NOTE: For security reasons, using the manager webapp is restricted to users with role "manager". Users are defined in `$CATALINA_HOME/conf/tomcat-users.xml`.

Included with this release are a host of sample Servlets and JSPs (with associated source code), extensive documentation, and an introductory guide to developing web applications.

Tomcat mailing lists are available at the Tomcat project web site:

- users@tomcat.apache.org for general questions related to configuring and using Tomcat
- dev@tomcat.apache.org for developers working on Tomcat

Thanks for using Tomcat!



Further information about configuring and running Tomcat can be found in the documentation included here, as well as on the Tomcat web site: http://tomcat.apache.org

Tomcat can be stopped by executing the following commands on windows machine:

```
%CATALINA_HOME%\bin\shutdown
or
C:\apache-tomcat-5.5.29\bin\shutdown
```

Tomcat can be stopped by executing the following commands on Unix *Solaris, Linux, etc.* machine:

```
$CATALINA_HOME/bin/shutdown.sh

or

/usr/local/apache-tomcat-5.5.29/bin/shutdown.sh
```

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