

Netbeans IDE setup for Oscar development on Ubuntu 9.04

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Version : 1.01

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Version history

1.0	Initial Version	Aart de Vries
1.01	Minor fixes reported by Earl Wertheimer: - jdk_13 => 14 update - ANT_HOME and download location fixed	Aart de Vries

This document was written with the following **goals** in mind:

- To install Java, Netbeans, Tomcat, Ant from their original download sites, so that the contents of this document are usable to people not using Ubuntu 9.04.
- To check-out the Oscar web-application in NetBeans, and to have the web-application running from within this IDE.

Conventions used in this document

- Any text in *courier* is text you either type on the command line, text you have to enter in a text file, or text that is returned to you on the command-line.

Assumptions in this document:

- You are logged in as user 'oscar', having a home directory on your system /home/oscar
- Where ever a password is used (MySQL, Tomcat), it is "oivn2009", so substitute these with whatever you like as passwords.
- That you will be running the Oscar webapp under /oscar_mcmaster
- You have **NOT** installed the following Ubuntu packages:
 - * sun-java....
 - * netbeans
 - * ant
 - * tomcat....

Start with downloading the following files, and place these in a folder ~/download:

- apache-ant-1.7.1-bin.tar.gz (from <http://ant.apache.org>)
- apache-tomcat-5.5.27.tar.gz (from <http://tomcat.apache.org>)
- jdk-6u14-linux-i586.bin (from <http://java.sun.com>)
- netbeans-6.5.1-ml-java-linux.sh (from <http://www.netbeans.org>)

As a first step, we create a bin directory, that will hold all the applications above:

- mkdir ~/bin

Install the Java JDK:

- cd ~/bin
- chmod a+x ~/download/jdk-6u14-linux-i586.bin
- ~/download/jdk-6u14-linux-i586.bin

For convenience, create a link java to jdk1.6.0_14:

```
- ln -s jdk1.6.0_14 java
```

Using your favourite editor, set your JAVA_HOME and path in your ~/.profile file as follows:

```
JAVA_HOME=~/.bin/java  
PATH=$PATH:~/bin/java/bin  
export JAVA_HOME PATH
```

Now logout, and log back in to make sure these changes are picked up. Verify by typing:

```
- java -version, which should give something like:  
java version "1.6.0_14"  
Java(TM) SE Runtime Environment (build 1.6.0_14-b.....)  
Java HotSpot(TM) Server VM (build ....., mixed mode)  
  
- echo $JAVA_HOME, which should give: /home/oscar/bin/java
```

Installing Ant and Tomcat

- 1) `cd ~/bin`
- 2) `tar xvfz ~/download/apache-ant-1.7.1-bin.tar.gz`
- 3) `tar xvfz ~/download/apache-tomcat-5.5.27.tar.gz`
- 4) For convenience, create a links:
`ln -s apache-ant-1.7.1 ant`
`ln -s apache-tomcat-5.5.27 tomcat`
- 5) Using your favourite editor, we will create a tomcat user “admin” having roles “manager” and “admin” and password “Oivn2009”. We will later configure NetBeans to use this tomcat user to run the Oscar web application in this tomcat instance. Edit the file `~/bin/tomcat/conf/tomcat-users.xml` so that it reads:

```
<?xml version='1.0' encoding='utf-8'?>  
<tomcat-users>  
  <role rolename="manager"/>  
  <role rolename="admin"/>  
  <user username="admin" password="Oivn2009" roles="manager,admin"/>  
</tomcat-users>
```
- 6) Using your favourite editor, we add ANT_HOME and tomcat's CATALINA_HOME in your ~/.profile file as follows, as well as we expand the PATH definition to access these programs. For completeness sake, the previous additions for Java are repeated in this listing:

```
ANT_HOME=~/.bin/ant  
CATALINA_HOME=~/.bin/tomcat  
JAVA_HOME=~/.bin/java  
PATH=$PATH:~/bin/java/bin:~/bin/tomcat/bin:~/bin/ant/bin  
export ANT_HOME CATALINA_HOME JAVA_HOME PATH
```
- 7) Now logout, and log back in to make sure the changes in ~/.profile are picked up. Verify by typing:

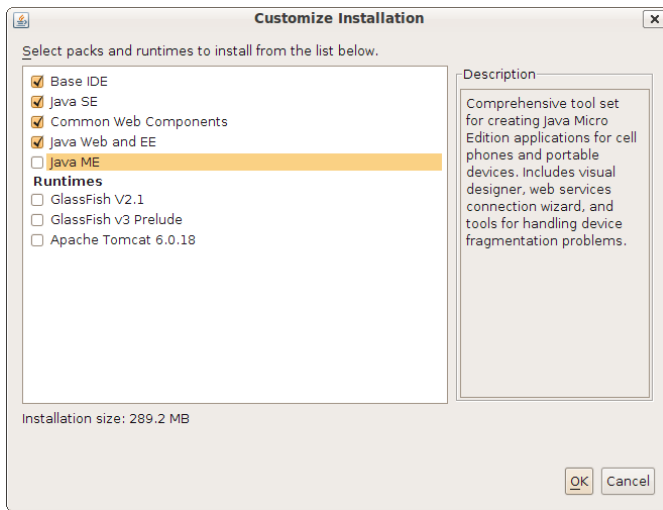
```
ant -version, which should give something like:  
Apache Ant version 1.7.1 compiled on November 10 2008  
echo $ANT_HOME, which should give: /home/oscar/bin/ant  
echo $CATALINA_HOME, which should give: /home/oscar/bin/tomcat
```
- 8) Also test whether tomcat will run and whether you setup the manager/admin login correctly, so that later Netbeans can use this:
 - Start tomcat by typing: `startup.sh`
 - Start your browser and goto: <http://localhost:8080>
 - Click in the “Administration” section on “Tomcat Manager”. You will be prompted to login. Use “admin” as a username, and “Oivn2009” as a password. If you see the managers page, then you know you have the “admin” account correctly setup for Netbeans.
 - Stop tomcat by typing: `shutdown.sh`

Installing Netbeans

- 1) Start the netbeans installer, and click “Customize” when you see the installer's welcome screen:

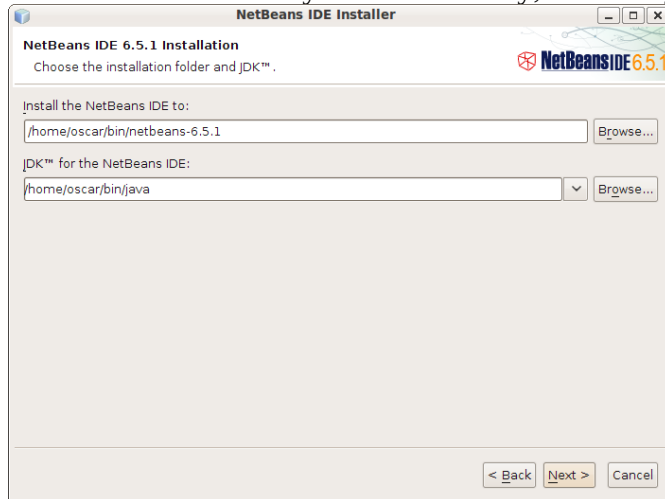


- 2) Deselect both GlassFish items, and Java ME (we won't be needing the Apache Tomcat 6.0.18 neither), and click “OK”, followed by “Next”

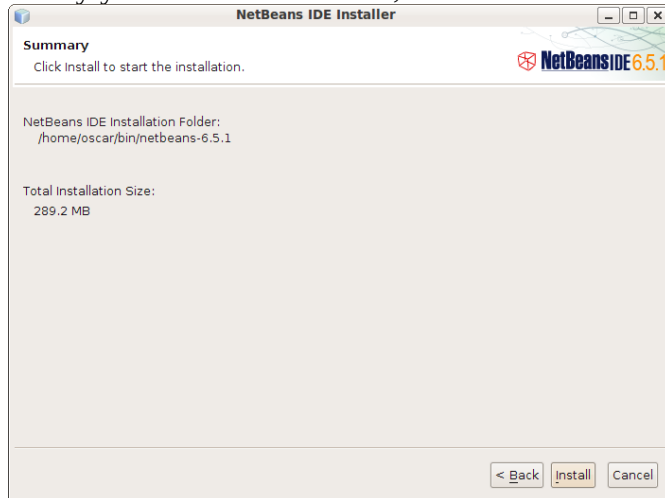


- 3) On the next screen, check “I accept the terms in the license agreement”, and click “Next”.

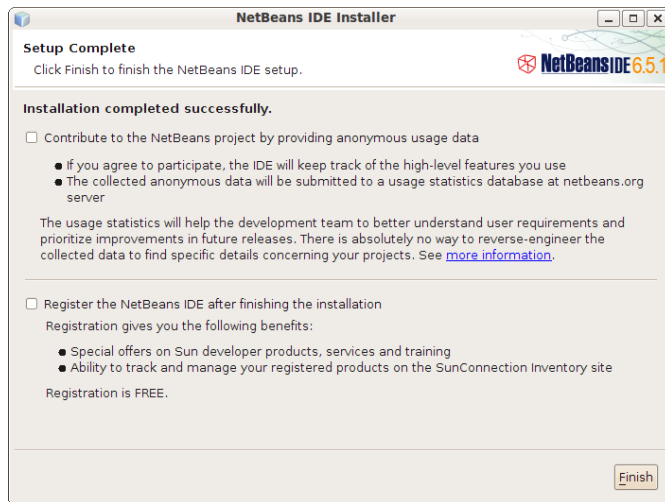
- 4) Make sure to install to your bin directory, and verify that Netbeans is using the correct JDK.



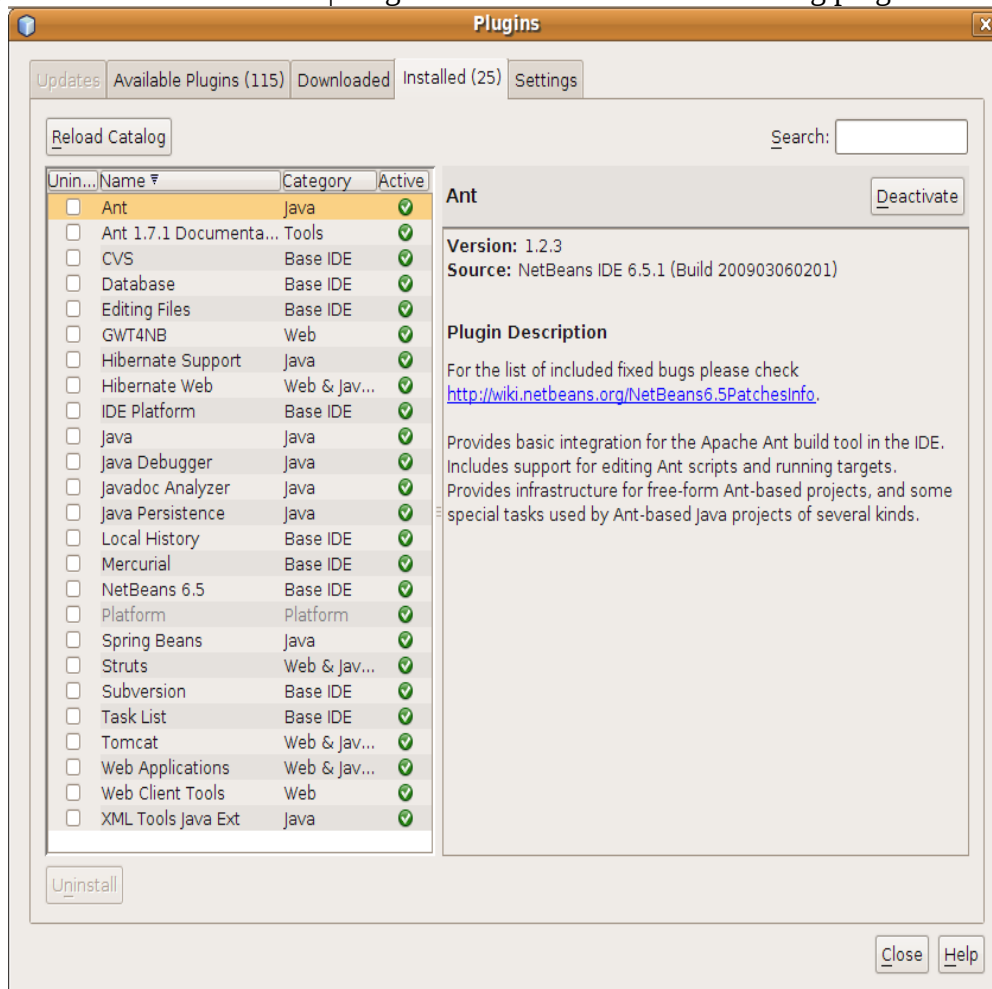
- 5) Verify your installation folder, and click Next:



- 6) Uncheck the “contribute” and “register” checkboxes if you want, and click “Finish”.



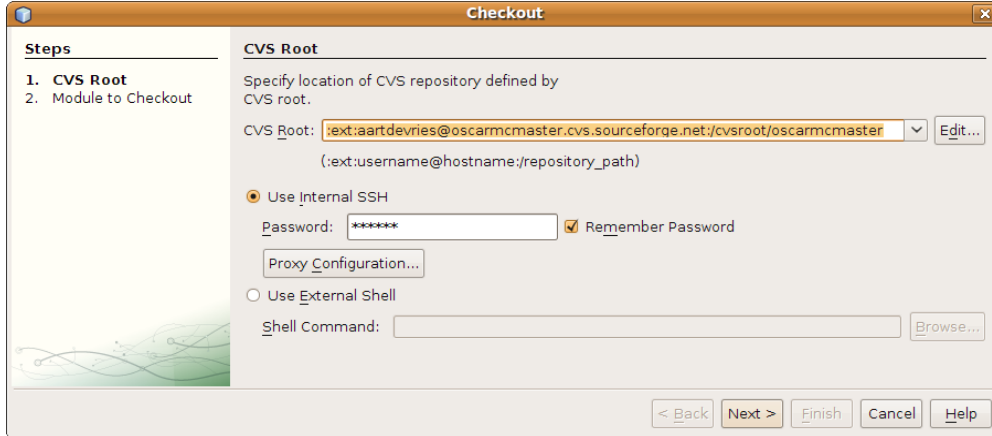
- 7) For convenience, create a link:
 - cd ~/bin
 - ln -s netbeans-6.5.1 netbeans
- 8) Create a launcher on your desktop to /home/oscar/bin/netbeans/bin/netbeans
- 9) Start NetBeans and do a “Help | Check for Updates” to install any updates available, and let the IDE restart.
- 10) Go to menu item “Tools | PlugIns” and make sure the following plugins are installed:



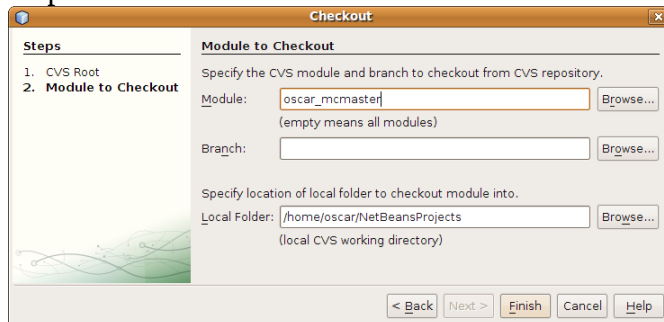
You must restart NetBeans now in order to get the download plugins installed.

Checking out and configuring the Oscar project

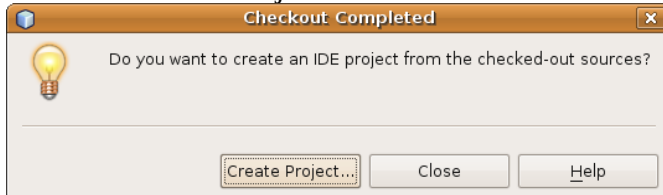
- 1) Goto menu “versioning | cvs | Checkout”.
- 2) Enter the cvs root (if you don't have a username, use user anonymous) (**note**: if supplying a username other than anonymous, do not use pserver but use **ext**), select “Use Internal SSH” and supply your password (leave blank if using anonymous), check “Remember Password” if you want. Click Next.



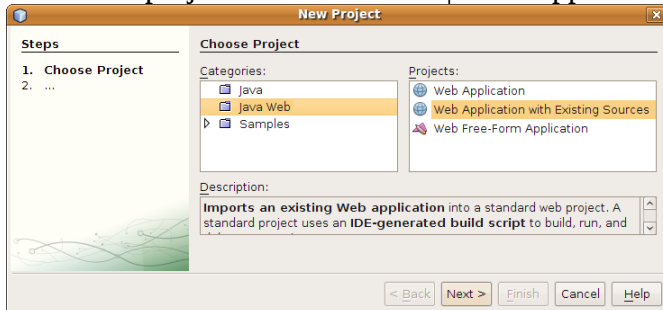
- 3) Make sure to select the oscar_mcmaster module (not oscarmcmaster), leave the Branch empty, and the default location folder NetBeansProjects is just fine (or you can specify it anywhere you like). Click “Finish” to commence the checkout. It might take several minutes for the checkout to complete.



- 4) Select to “Create Project...” once the checkout is finished.

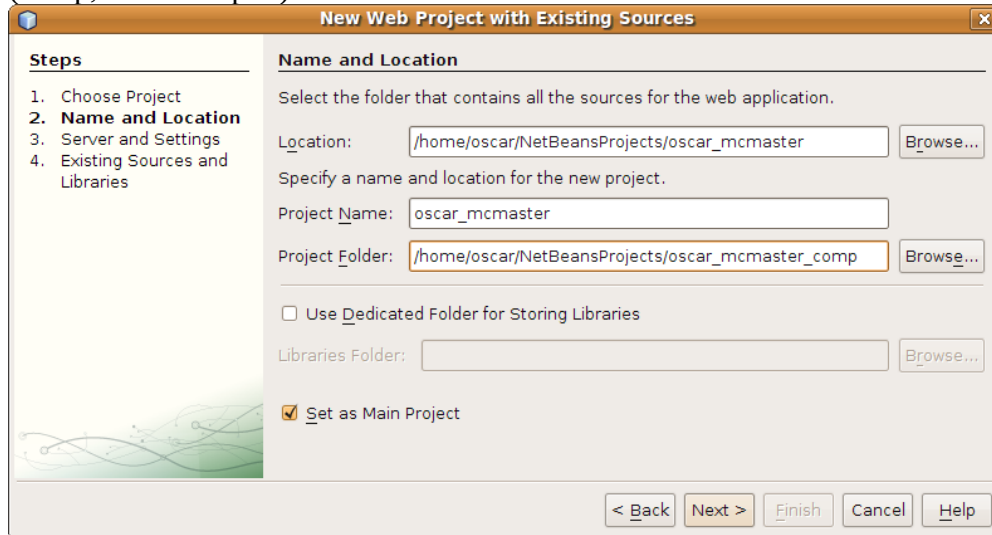


- 5) Create the project as a “Java Web | Web Application with Existing Sources”, and click “Next”.

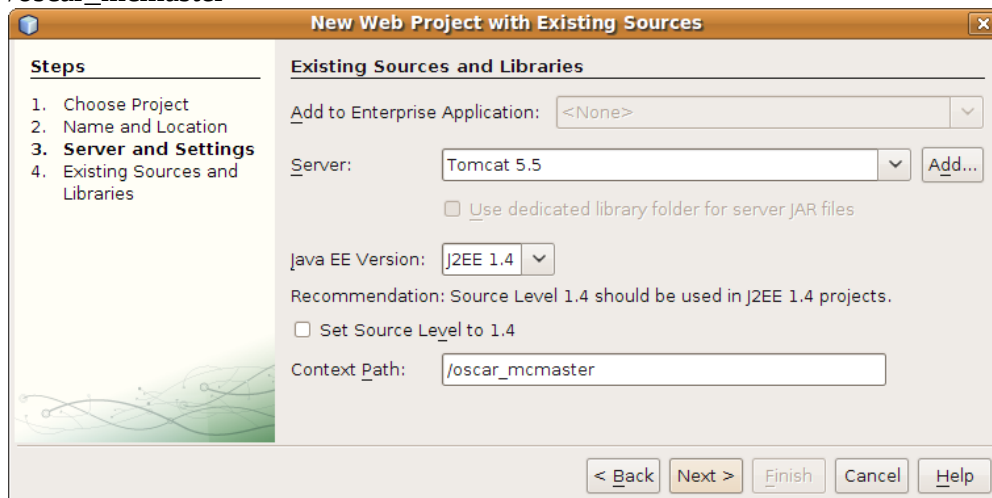


- 6) Now comes the trick: When NetBeans creates a project, it will supply its own build.xml file. At the same time, we do not want to overwrite the checked-out build.xml file that is useful for

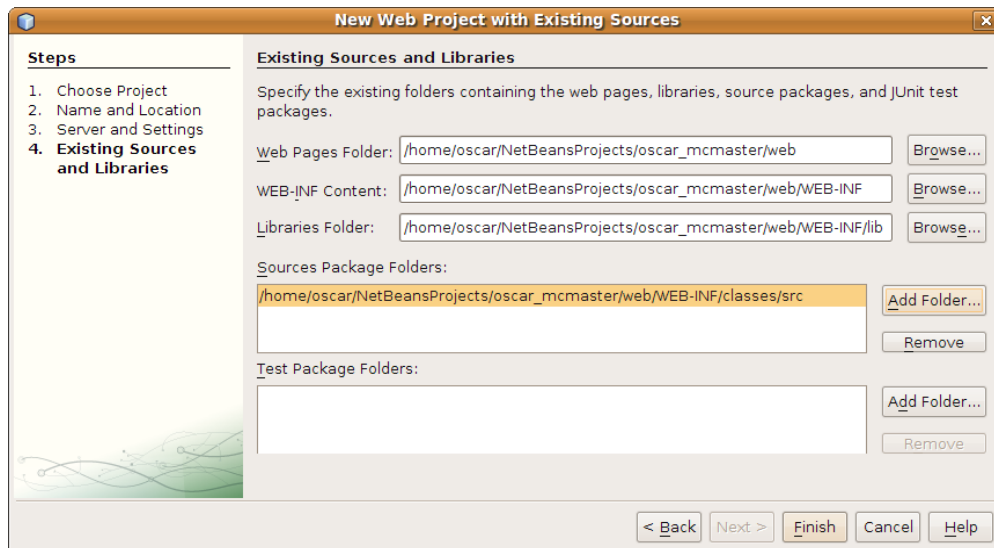
stand-alone builds of the .war files you want to generate. So when creating a “Web Application with Existing Sources”, NetBeans will work of the check-out location when it comes to source files, but will build and use a build.xml in it's own project folder. So we will let NetBeans work of the location that we just checked out to: “/home/oscar/NetBeansProjects/oscar_mcmaster”, but we will define the Project folder as “/home/oscar/NetBeansProjects/oscar_mcmaster_comp” (comp, from compile):



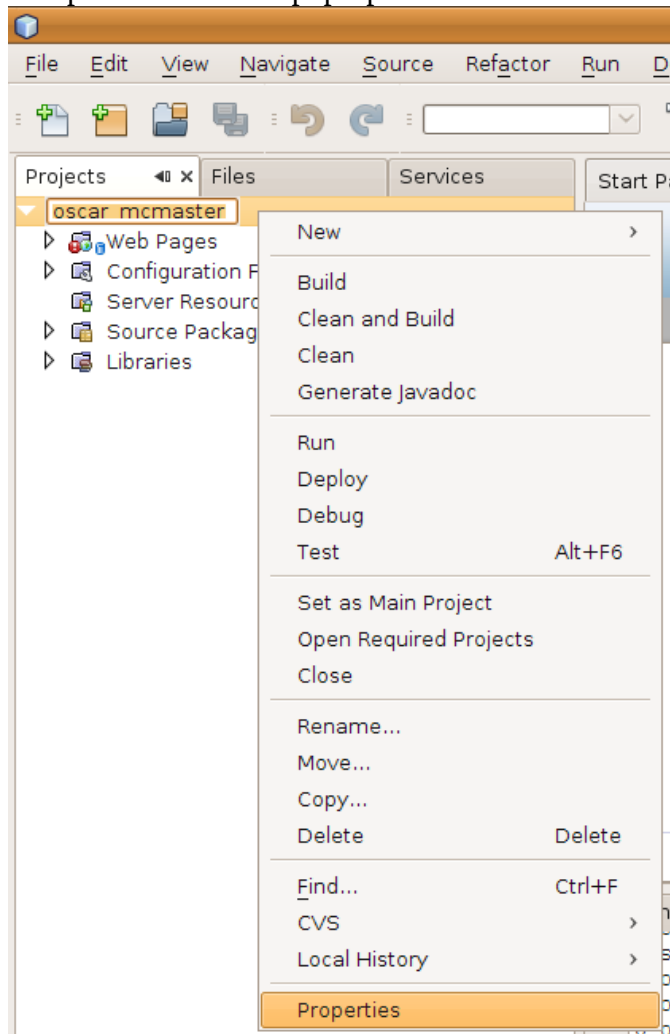
- 7) When your CATALINA_HOME is setup correctly, NetBeans will likely set the “Server” entry in the next screen to “Tomcat 5.5”. The “Java EE Version” setting is irrelevant to us, and you can uncheck the “Set Source Level to 1.4”. Verify that the “Context Path” is set to /oscar_mcmaster



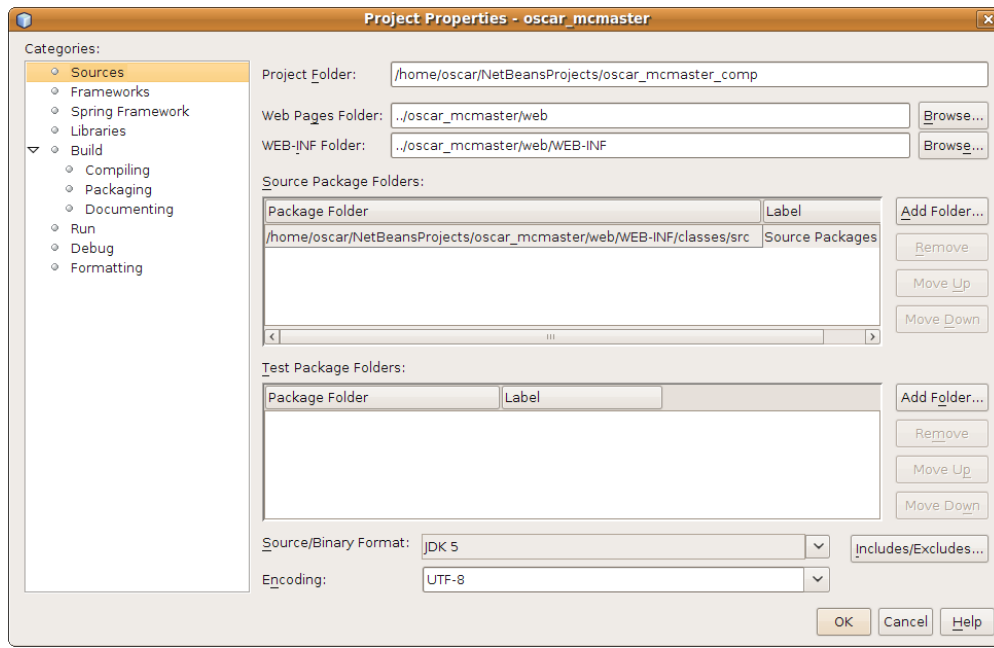
- 8) Verify the “Web Pages Folder”, “WEB-INF Content” and “Libraries Folder” paths carefully (NetBeans 6.5.1 picks these up correctly, 6.5 does not). You will have to remove the “Source Package Folders” entry NetBeans comes up with, and add the correct entry as shown in the screenshot below, and click “Finish”.



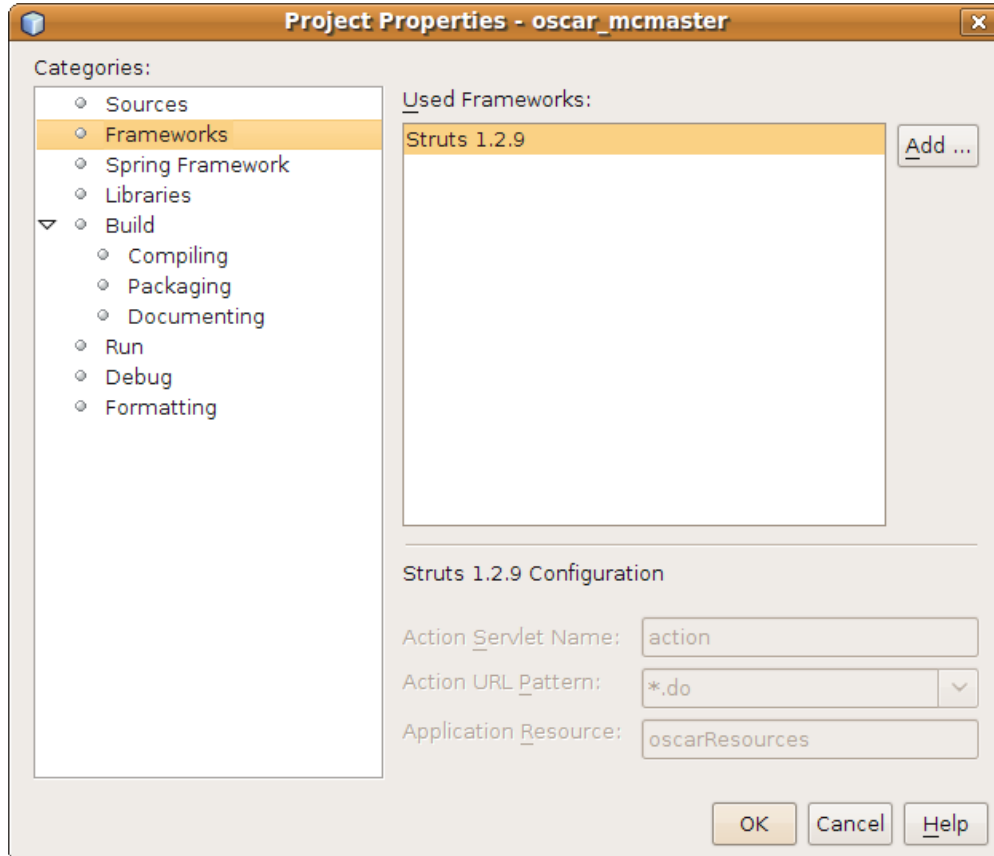
- 9) Now verify the project properties by right-clicking on “oscar_mcmaster”, and selecting “Properties” from the pop-up menu.



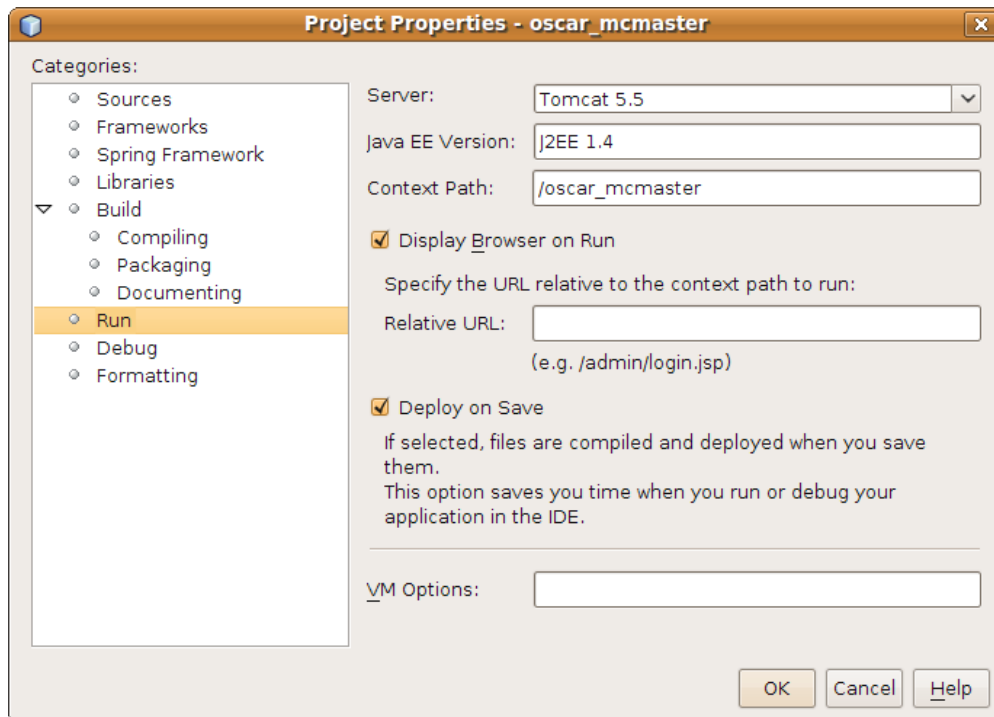
- 10) On the “Sources” category, make sure your “Source/Binary Format” is set to “JDK 5”



11) Make sure that the “Struts 1.2.9” framework is selected:

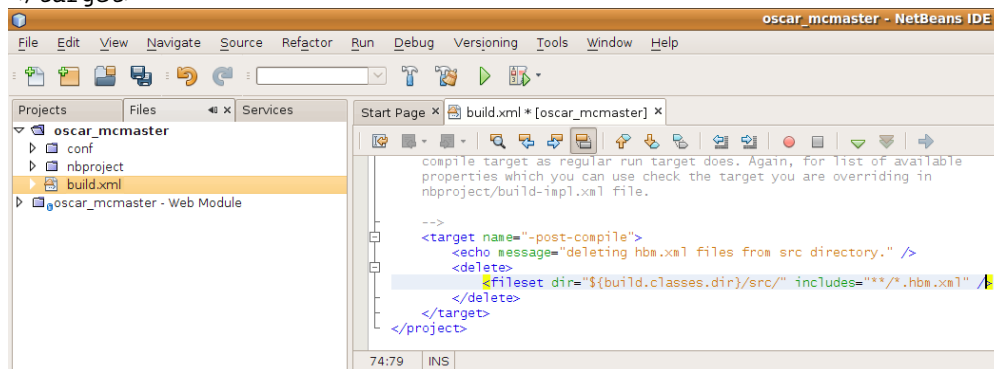


12) Verify the “Run” category to be on the safe side, and close the “Project Properties” by pressing “OK”:



- 13) Take the “Files” view on your project, and from the “oscar_mcmaster” folder double click the file build.xml. This is the NetBeans generated build.xml file. You need to add the following “-post-compile” target to this build.xml file near the bottom, and save the file:

```
<target name="-post-compile">
  <echo message="deleting hbm.xml files from src directory." />
  <delete>
    <fileset dir="${build.classes.dir}/src/" includes="**/*.hbm.xml"/>
  </delete>
</target>
```



In essence you are now ready to run the project. But before you do, make sure to have everything from the following section in place.

Preparing to run

- 1) Make sure your DrugRef postgres database is running, and the Python application has started (verify that something is running on port 8001 using “netstat -an”). In order for Python to start from rc.local, Ubuntu 9.04 behaves differently than the older versions. You have to precede the startup-line with “nohup”. The full command in /etc/rc.local should be (on a single line):
 nohup su -c "/usr/bin/python /usr/local/drugref-ca_1_5/drugref_service.py >> /usr/local/drugref-ca_1_5/drug.log 2>&1 &" postgres
- 2) Make sure MySQL is installed, and that you can login to it (use e.g. the MySQL Query Browser for convenience). If you have an older oscar_mcmaster database in there, you must bring it is

sync with the checked out sources (or back it up, drop the database and recreate with the script that checked out with the sources in:

/home/oscar/NetBeansProjects/oscar_mcmaster/database/mysql/

- 3) Find the file `oscar_mcmaster.properties` in the checked out source tree. You need to copy this file to the home directory of the user running the web-app. In our case we have to copy it to

/home/oscar.

Modify the file to get to the MySQL database, and the DrugRef server. Also make sure to

change **any** reference to `...../OscarDocument/.....` to

`/home/oscar/bin/tomcat/webapps/OscarDocument/.....`

- 4) Manually compile `OscarDocument.war` and place it in Tomcat's webapps folder:

```
- cd ~/NetBeansProjects/oscar_mcmaster/build
```

```
- ant
```

```
- cd tmp
```

```
- cp OscarDocument.war ~/bin/tomcat/webapps
```

If you have trouble with the first 2 steps, follow the steps regarding these steps in David Daley's excellent "Oscar Installation Guide" on <http://indivica.com/support/oscarinstall/>

Running Oscar in Netbeans

After all this configuration, you are finally ready to run:

- 1) Do a "Clean and Build" by pressing the following button in the IDE:



- 2) Run by clicking:

