Netbeans IDE setup for Oscar development on Ubuntu 9.04

Written by : Aart de Vries Version : 1.01

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:

Date: 2009-06-30

— 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: <u>http://localhost:8080</u>
- 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) <u>Make sure to install to your bin directory, and verify</u> that Netbeans is using the correct JDK.

Ũ	NetBeans IDE Installer	- x
NetBeans IDE 6.5.1 Installation	on	
Choose the installation folder an	id JDK™.	W Netbeanside 6.5.1
Install the NetBeans IDE to:		
/home/oscar/bin/netbeans-6.5.1		Browse
[DK™ for the NetBeans IDE:		
/home/oscar/bin/java		✓ Browse
		< Back Next > Cancel
Verify your insta	llation folder and	click Next
	NetBeans IDE Installer	
Summary		
Click Install to start the installati	on.	NetBeansIDE 6.5.1
NetBeans IDE Installation Folder:		
/home/oscar/bin/netbeans-6.5.	1	
Total Installation Size:		
289.2 MB		
		< Back Install Cancel

6) Uncheck the "contribute" and "register" checkboxes if you want, and click "Finish".

NetBeans IDE Installer	:
Setup Complete	
Click Finish to finish the NetBeans IDE setup.	8 NetBeanside 6.5
Installation completed successfully.	
Contribute to the NetBeans project by providing anonymous usage dat	a
 If you agree to participate, the IDE will keep track of the high-level fi The collected anonymous data will be submitted to a usage statisti server 	eatures you use cs database at netbeans.org
The usage statistics will help the development team to better understar prioritize improvements in future releases. There is absolutely no way to collected data to find specific details concerning your projects. See <u>mor</u>	nd user requirements and o reverse-engineer the <u>e information</u> .
Register the NetBeans IDE after finishing the installation	
Registration gives you the following benefits:	
 Special offers on Sun developer products, services and training Ability to track and manage your registered products on the SunComposition 	onnection Inventory site
Registration is FREE.	
	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:

eload Catalog		Search:
nin]Name ▼ Ant Ant Ant Ant Ant CVS Database Editing Files GWT4NB Hibernate Support Hibernate Web IDE Platform Java Java Debugger Java Debugger Java Debugger Local History Mercurial NetBeans 6.5 Platform Spring Beans Struts Subversion Task List Tomcat Web Applications Web Client Tools XML Tools lava Ext	Category A Java Tools Base IDE Base IDE Base IDE Web Java Web & Jav Base IDE Java Java Java Java Base IDE Base IDE	Ant Deactivate Version: 1.2.3 Source: NetBeans IDE 6.5.1 (Build 200903060201) Plugin Description For the list of included fixed bugs please check http://wiki.netbeans.org/NetBeans6.5PatchesInfo. Provides basic integration for the Apache Ant build tool in the IDE. Includes support for editing Ant scripts and running targets. Provides infrastructure for free-form Ant-based projects, and some special tasks used by Ant-based Java projects of several kinds.

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.

0	Checkout
Steps	CVS Root
 CVS Root Module to Checkout 	Specify location of CVS repository defined by CVS root. CVS <u>Root</u> : <u>rext:aartdevries@oscarmcmaster.cvs.sourceforge.net:/cvsroot/oscarmcmaster</u>
	 Use Internal SSH Password: ****** Proxy Configuration Use External Shell
	< Back Next > Finish Cancel Help

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 comence the checkout. It might take several minutes for the checkout to complete.

	Checkout	×	
Steps	Module to Checkout		
1. CVS Root	Specify the CVS module and branch to checkout from CVS repository	<i>.</i>	
2. Module to Checkout	Module: oscar_mcmaster	Browse	
	(empty means all modules)		
	Branch:	Browse	
	Specify location of local folder to checkout module into.		
	Local Folder: /home/oscar/NetBeansProjects	Browse	
	(local CVS working directory)		
	< <u>Back</u> Next > Finish Cance	el <u>H</u> elp	

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".

	New Project	×
Steps	Choose Project	
1. Choose Project	Categories:	Projects:
2	🗂 java	🛞 Web Application
	🗂 Java Web	Web Application with Existing Sources
	▶ 🖻 Samples	3 Web Free-Form Application
	Description:	
	Imports an existing Web appl standard project uses an IDE-gen	ication into a standard web project. A erated build script to build, run, and
	<	Back Next > Finish Cancel Help

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

New Web Project with Existing Sources			
Steps	Name and Location		
 Choose Project Name and Location 	Select the folder that contains all the sources for the web application.		
3. Server and Settings	Location: /home/oscar/NetBeansProjects/oscar_mcmaster Browse		
4. Existing Sources and Libraries	Specify a name and location for the new project.		
	Project Name: oscar_mcmaster		
	Project <u>F</u> older: /home/oscar/NetBeansProjects/oscar_mcmaster_comp Brows <u>e</u>		
	Use Dedicated Folder for Storing Libraries		
	Libraries Folder: Browse		
	☑ <u>S</u> et as Main Project		
	< Back Next > Einish Cancel Help		

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

New Web Project with Existing Sources				
Steps	Existing Sources and Libraries			
1. Choose Project 2. Name and Location	Add to Enterprise Application: <pre> </pre> <pre> </pre>			
 Server and Settings Existing Sources and Libraries 	Server: Tomcat 5.5 ✓ Add □ Use dedicated library folder for server JAR files			
	Java EE Version: J2EE 1.4 V Recommendation: Source Level 1.4 should be used in J2EE 1.4 projects.			
	Set Source Level to 1.4			
	Context Path: /oscar_mcmaster			
	< Back Next > Finish Cancel Help			

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".

New Web Project with Existing Sources			
Steps	Existing Sources and Libraries		
 Choose Project Name and Location Server and Settings 	Specify the existing folders containing the web pages, libraries, source packages, and JUnit test packages.		
4. Existing Sources and Libraries	Web Pages Folder: /home/oscar/NetBeansProjects/oscar_mcmaster/web Browse		
	WEB-INF Content: /home/oscar/NetBeansProjects/oscar_mcmaster/web/WEB-INF Browse		
	Libraries Folder: //home/oscar/NetBeansProjects/oscar_mcmaster/web/WEB-INF/lib Browse		
	Sources Package Folders:		
	/home/oscar/NetBeansProjects/oscar_mcmaster/web/WEB-INF/classes/src		
	Remove		
	Test Package Folders:		
	Add Folder		
	Remove		
	< <u>Back</u> Next > <u>Finish</u> Cancel <u>H</u> elp		

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"

Categories:						
 Sources 	Project <u>F</u> older:	/home/oscar/NetBeansProjects/oscar_mcmaster_comp	i			
 Frameworks Spring Framework Libraries Ruild 	Web Pages Folder: WEB-INF Folder:	/oscar_mcmaster/web /oscar_mcmaster/web/WEB-INF		Browse Browse		
 Compiling Packaging 	Source Package Fol	Source Package Folders:				
 Documenting 	Package Folder		Label	Add Folder		
 Run Debug Formatting 	/home/oscar/NetBe	eansProjects/oscar_mcmaster/web/WEB-INF/classes/src	Source Packages	Remove		
		m	>	Move Up Move Down		
	Test Package Folder	Label		Add F <u>o</u> lder		
				Remove		
				Move Up		
	Source/Binary Form	iat: JDK 5	▼ Inclu	des/Excludes.		

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

Project	Properties - oscar_m	cmaster 🛛 🗙
Categories:		
 Sources 	Used Frameworks:	
 Frameworks 	Struts 1.2.9	Add
 Spring Framework 		
Libraries Ruild		
Compiling		
Packaging		
 Documenting 		
◎ Run		
Debug Decomposition		
Formatting		
	Struts 1.2.9 Configurat	ion
	Action <u>S</u> ervlet Name:	action
	Action URL <u>P</u> attern:	*.do
	Application <u>R</u> esource:	oscarResources
		OK Cancel <u>H</u> elp

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

Project Properties - oscar_mcmaster		
Categories:		
Sources Secondary	Server:	Tomcat 5.5
 Frameworks Spring Framework Libraries Build Compiling Packaging Documenting 	Java EE Version:	J2EE 1.4
	Context Path:	/oscar_mcmaster
	☑ Display <u>B</u> rowser on Run	
	Specify the URL	relative to the context path to run:
 Run 	Relative URL:	
 Debug Formatting 		(e.g. /admin/login.jsp)
	🗹 Deploy on Sav	/e
	If selected, files them.	are compiled and deployed when you save
	This option save application in th	es you time when you run or debug your ne IDE.
	<u>∨</u> M Options:	
		OK Cancel Help

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">



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

- Make sure your DrugRef postgress 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 excelent "Oscar Installation Guide" on <u>http://indivica.com/support/oscarinstall/</u>

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:

