Setup Instructions

1. LAMP Setup

The grading system application runs on Linux environment. Here Ubuntu 11.10 is used as the server system. Thus, the first step for setting up is to get the server, and install it with Ubuntu. Ubuntu is a free and open-source operating system, and you can obtain one copy from its official website (<http://www.ubuntu.com/download>).

LAMP is a software bundle, which refers to Linux (Operating System), Apache HTTP Server, MySQL (database System), PHP. These are the principal components to build a viable general purpose web server; and here they are the running container for Grading System.

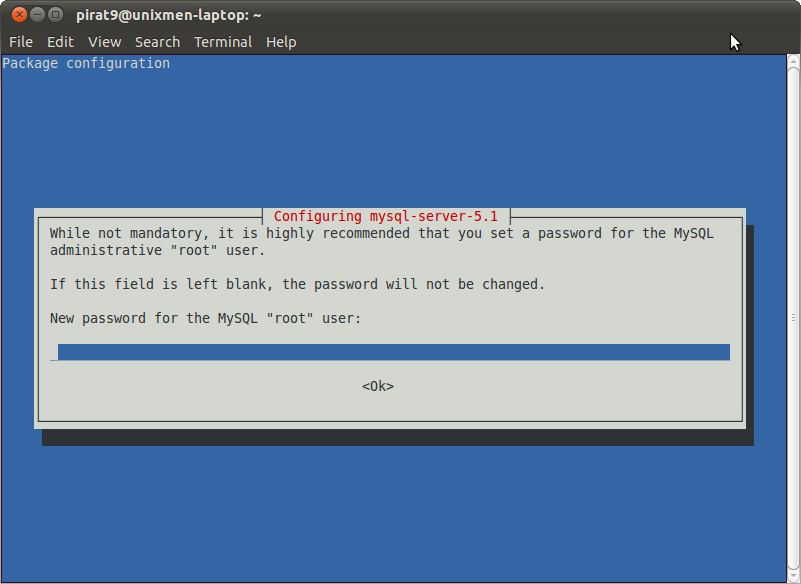
Setting up steps:

1. Open the terminal on the Ubuntu server by each click the shell icon, or just press Alt+Ctrl+T;
2. Type the following command in the shell, and press Enter.

sudo apt-get install lamp-server^

When a password is required, type in.

1. During the installation, you will be asked to insert the mysql root password. Type in your preferred password, and remember it.

[](http://i671.photobucket.com/albums/vv77/ZINOVSKY/pirat9unixmen-laptop_002.png)

1. Check if php is working :

Type the following command in shell:

sudo gedit /var/www/info.php

and add the following text in the appearing editor

<?php

phpinfo();

?>

save the file and exit.

1. Restart apache2 with this command

sudo /etc/init.d/apache2 restart

Now open browser and type :

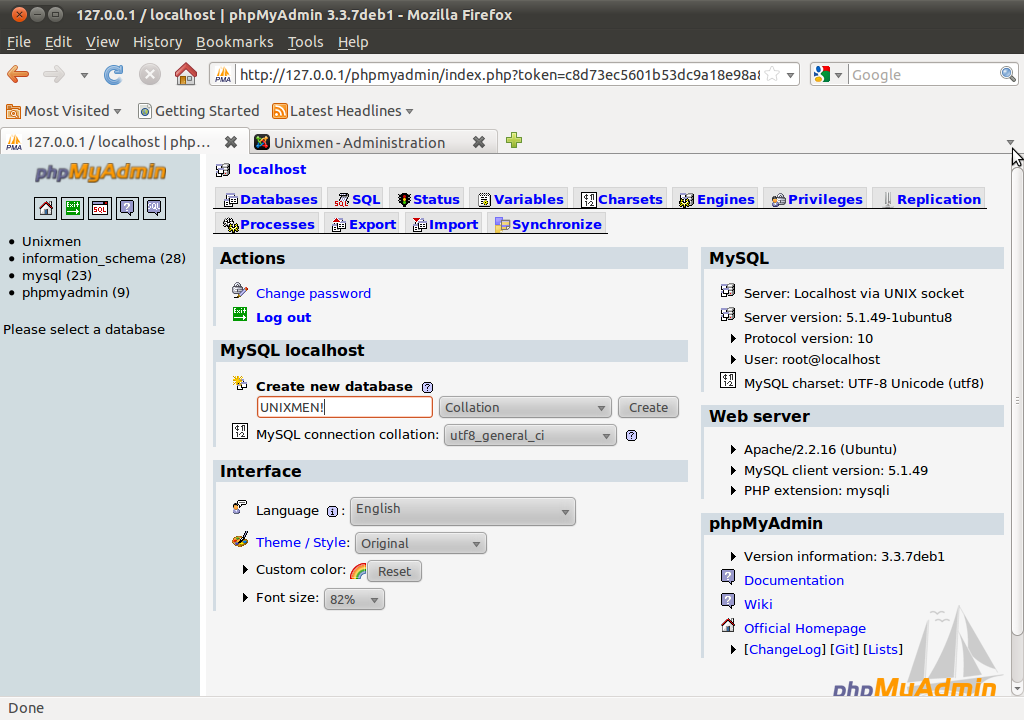
<http://localhost/info.php>

If you see something like the following figure, then PHP is installed successfully.



1. It is recommended that you install PHPMyAdmin also, for accessing and manipulating the database easier. It can be installed by running the following command: sudo apt-get install phpmyadmin

To login to PHPMyAdmin, open browser and type<http://localhost/phpmyadmin>



By now, LAMP server is set up successfully. The default working directory for the web server is /var/www, where the web application files are put in.

1. Tomcat setup

Apache has officially launched version 7.0 of the servlet container for Java applications, Tomcat. Major changes in this version, you can highlight support for Servlet 3.0 and JavaServer Pages 2.2.

2.1 Install JDK 6

First we must download the package from the java website, select your platform, in our case Ubuntu:  
  
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>  
  
Here we go down the file "jdk-6u21-linux-i586.bin" to any folder, then leave where appropriate.  
  
Now we have to give execute permissions:  
sudo chmod +x jdk-6u23-linux-i586.bin  
  
and install:  
sudo ./jdk-6u23-linux-i586.bin  
  
Now move the generated folder to a more appropriate directory:  
sudo mv jdk1.6.0\_23/ /usr/local  
  
We set the new Java as one of the alternatives "java"  
sudo update-alternatives --install "/usr/bin/java" "java" "/usr/local/jdk1.6.0\_23/bin/java" 1  
  
Now we set the "new alternative" as real Java. This step makes the sun is the version used by default:  
sudo update-alternatives --set java /usr/local/jdk1.6.0\_23/bin/java  
  
Now we do the same steps above for javac:  
  
sudo update-alternatives --install "/usr/bin/javac" "javac" "/usr/local/jdk1.6.0\_23/bin/javac" 1

sudo update-alternatives --set javac /usr/local/jdk1.6.0\_23/bin/javac  
  
  
Now verify that everything works properly. Open the console and type:  
java -version  
  
If all is well, you should return the following:  
  
java version "1.6.0\_23"  
Java (TM) SE Runtime Environment (build 1.6.0\_23-B06)  
Java HotSpot (TM) Client VM (build 17.0-b16, mixed mode, sharing)  
  
For javac:  
javac -version  
  
If all is well back:  
javac 1.6.0\_23  
  
If you have other installations of java / javac can be configured using the following commands:  
sudo update-alternatives --config java  
sudo update-alternatives --config javac  
  
Also if you want setear JRE\_HOME JAVA\_HOME or as environment variables, we must go to:  
sudo gedit /etc/environment  
  
Here we record the routes where we have installed Java, in our case is as follows:  
JAVA\_HOME = "/usr/local/jdk1.6.0\_23/bin/" (add)  
JRE\_HOME = "/usr/local/jdk1.6.0\_23/jre" (add)  
PATH ="...(other routes):$JAVA\_HOME:$JRE\_HOME (edit)   
  
2.2 Installation of Tomcat 7  
  
(For this part, it refers to the online blog by Diego Benna <http://diegobenna.blogspot.com/2011/01/install-tomcat-7-in-ubuntu-1010.html>)

The first thing to do is download the package "apache-tomcat-7.0.6.tar.gz" from the NEXT link

<http://tomcat.apache.org/download-70.cgi> [tar.gz]

Now unpack it with the following command:

tar xvzf apache-tomcat-7.0.8.tar.gz

Then we let in a more appropriate directory, in our case in / usr/share/tomcat7, but can be in any directory. We do this with the command:

sudo mv apache-tomcat-7.0.8/ /usr/share/tomcat7

Now we define the environment variables JAVA\_HOME and JRE\_HOME. This file is in the "environment" in / etc. Command to edit the file:

sudo gedit /etc/environment

Here we record the routes where we have installed Java in my case this is as follows:

JAVA\_HOME="/usr/local/jdk1.6.0\_23"

JRE\_HOME="/usr/local/jdk1.6.0\_23/jre"

PATH="...(other path):$JAVA\_HOME:$JRE\_HOME"

**IMPORTANT**: Verify the routes where they have installed Java.  
  
Define the file paths inside "catalina.sh" located in tomcat7/bin. To modify this file use the command:

sudo gedit /usr/share/tomcat7/bin/catalina.sh

Now just insert the JAVA\_HOME and JRE\_HOME after the first line, so the file is as follows:

#!/bin/sh  
JAVA\_HOME="/usr/local/jdk1.6.0\_23"  
JRE\_HOME="/usr/local/jdk1.6.0\_23/jre"  
# Licensed to the Apache Software Foundation (ASF)...  
#...  
#...  
....

Now let's configure Tomcat users, this is done in the file "tomcat-users.xml"directory tomcat7/conf. Command to edit the file:

sudo gedit /usr/share/tomcat7/conf/tomcat-users.xml

Unlike previous versions where the administrator should own role "manager", now it should be "manager-gui"to operate on the web administration tomcat7. The file would be as follows:

<?xml version='1.0' encoding='utf-8'?>  
  
<tomcat-users>  
<role rolename="manager-gui"/>  
<role rolename="manager-script"/>  
<role rolename="manager"/>  
<role rolename="admin-gui"/>  
<role rolename="admin-script"/>  
<role rolename="admin"/>  
  
<user username="usuario" password="contrasena" roles="manager-gui,admin-gui,manager,admin,manager-script,admin-script"/>  
</tomcat-users>

Now you should be all ready to try tomcat7.  
  
First we must lift the server with the following command:

sudo /usr/share/tomcat7/bin/startup.sh

With this we get the following output on console:

Using CATALINA\_BASE: /usr/share/tomcat7  
Using CATALINA\_HOME: /usr/share/tomcat7  
Using JRE\_HOME: /usr/local/jdk1.6.0\_20/jre  
Using CLASSPATH: /usr/share/tomcat7/bin/bootstrap.jar:/usr/share/tomcat7/bin/tomcat-juli.jar

Verify that the JRE\_HOME is where we define.  
  
Now open your web browser and type the following url:

<http://127.0.0.1:8080/>

So we get the following page:  
  
If we enter the administration Tomcat Manager we click on the menu or directly at URL:

<http://127.0.0.1:8080/manager/html>

Here we ask the user data from previous record in mind tomcat-users.xml.  
  
I recommend testing the sample to make sure everything works ok, they are in the section "Miscellaneous" from the side menu or at the URL:

<http://127.0.0.1:8080/examples/>

Commands  
  
Start server:

sudo /usr/share/tomcat7/bin/startup.sh

Stop server:

sudo /usr/share/tomcat7/bin/shutdown.sh

Automatic Starting  
  
To make tomcat automatically start when we boot up the computer, you can add a script to make it auto-start and shutdown.

sudo gedit /etc/init.d/tomcat7

Now paste in the following:

# Tomcat auto-start  
#  
# description: Auto-starts tomcat  
# processname: tomcat  
# pidfile: /var/run/tomcat.pid  
  
case $1 in  
start)  
sh /usr/share/tomcat7/bin/startup.sh  
;;  
stop)   
sh /usr/share/tomcat7/bin/shutdown.sh  
;;  
restart)  
sh /usr/share/tomcat7/bin/shutdown.sh  
sh /usr/share/tomcat7/bin/startup.sh  
;;  
esac   
exit 0

You’ll need to make the script executable by running the chmod command:

sudo chmod 755 /etc/init.d/tomcat7

The last step is actually linking this script to the startup folders with a symbolic link. Execute these two commands and we should be on our way.

sudo ln -s /etc/init.d/tomcat7 /etc/rc1.d/K99tomcat  
sudo ln -s /etc/init.d/tomcat7 /etc/rc2.d/S99tomcat

Tomcat should now be fully installed and operational. Enjoy!  
  
sudo /etc/init.d/tomcat7 restart

1. Folder Layout and Contents
   1. /var/PlagiarismDetection/

Plagiarism detection program developed by Zhu Wu using Attribute Counting Algorithm. It is a Java NetBeans console application, which is connected to the local MySQL server. It takes p\_id as input. The program is called by PHP and the generated output is directly displayed on web browser. When deploying it elsewhere, it is required to include the ANTLR library into the project manually. The ANTLR library is located at /var/PlagiarismDetection/antlr-3.4/antlr-3.4/lib/antlr-3.4-complete.jar.

The source code of JavaParser.java and JavaLexer.java is automatically generated by ANTLR by passing the Java.g file which can be found in the \data folder of this DVD.

* 1. /var/www/

All the PHP, JavaScript, CSS files are inside this folder.

Images are located at /var/www/images/.

PHP Mailer is used for SMTP connection and Email sending. It is located at /var/www/PHPMailer\_v5.1/. For more information, please refer to PHP Mailer website <http://sourceforge.net/projects/phpmailer/files/phpmailer%20for%20php5_6/PHPMailer%20v5.1/>. The email server connection setup in this project is located at resetPassword.php.

Syntax Highlighter is used for highlighting source code submitted by students. It consists of three folders, /var/www/Styles/, /var/www/Uncompressed/ and /var/www/Scripts. For more information, please refer to Syntax Highlighter website <http://alexgorbatchev.com/SyntaxHighlighter/>.

* 1. /var/gradingsystem/

/var/gradingsystem/gspolicy:

/var/gradingsystem/WebConfig.xml: this xml file is used for web configuration settings.

/var/gradingsystem/uploads: this folder is used to keep all the students’ submissions. For a specific submission, it is stored at the following location: /var/gradingsystem/uploads/{course\_code}/{p\_name}/{username}/{filename}.

1. Usernames and Passwords

|  |  |  |
| --- | --- | --- |
|  | Username | Password |
| Linux OS | fyp2011 | ntu2011 |
| MySQL Root Account | root | fyp2011 |
| MySQL Admin Account | gsadmin | ntu2011 |
| 163 Mail account | gradingsystem@163.com | ntufyp2011 |
| Default GradingSystem Admin Account | admin | admin |