

Laboratory Journal

On

Server Installation (AAKASH-II)

Submitted by:

Jadhav S.D.

(Assistant Professor),

Department of Computer Engineering,

SB Patil College of Engineering,

Indpaur, Pune.

(Remote Centre: 1113)

Nov 5, 2012.

Forewords

While installing server for AAKASH-II i.e Ubuntu server installation & required packages, we noticed A-View chat box from which it seems that few users are naïve and have lack of hands-on practice of Ubuntu. IIT-Teacher has well done the job of helping these remote centers.

We are trying this small and humble effort to compile and generate a complete Lab Journal for every remote centre that will help them to understand the basic steps of installation as we provided the snapshot of respective steps of installation. We also tried to provide alternative methods of few installation steps where one step is not found to be efficient then other will help them equivalently.

We are working under the guidance of our Principal Prof. (Dr.) Nemade P.D. Thanks for his valuable guidance & support. I am thankful to the keen efforts taken by my technical team members:

- | | |
|----------------------|----------------------|
| 1) Padwal Rakesh | System Administrator |
| 2) Gound Usha | Lecturer |
| 3) Gaikwad Tejasvi | Lecturer |
| 4) Chandankar Sachin | Technical Support |
| 5) Jagtap Deepak | System Administrator |

I hope every remote centre will find this Lab Journal helpful & will help to improve Research & Development activities between IITB-&-Remote centre & in-between remote-centre's as well.

Thanking you.

Prof. Jadhav S.D.

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Chapter 1

Ubuntu 10.04 step-by-step installation procedure

This chapter explains Ubuntu 10.04 OS installation with detailed screenshots. Below are the minimum hardware requirements to install Ubuntu on your system with configuration:

- 700 MHz processor (Intel Celeron or better)
- 512 MB RAM (system memory) • 5 GB of hard-drive space (or USB stick, memory card or external drive but see LiveCD for an alternative approach)
- Either a CD/DVD drive or a USB port for the installer media Start the system and press F10 for boot options menu (this is different for every system) and select CD/DVD drive and put your Ubuntu CD into the CD tray and boot it. The operating system boots from the CD and the screen below will be displayed.

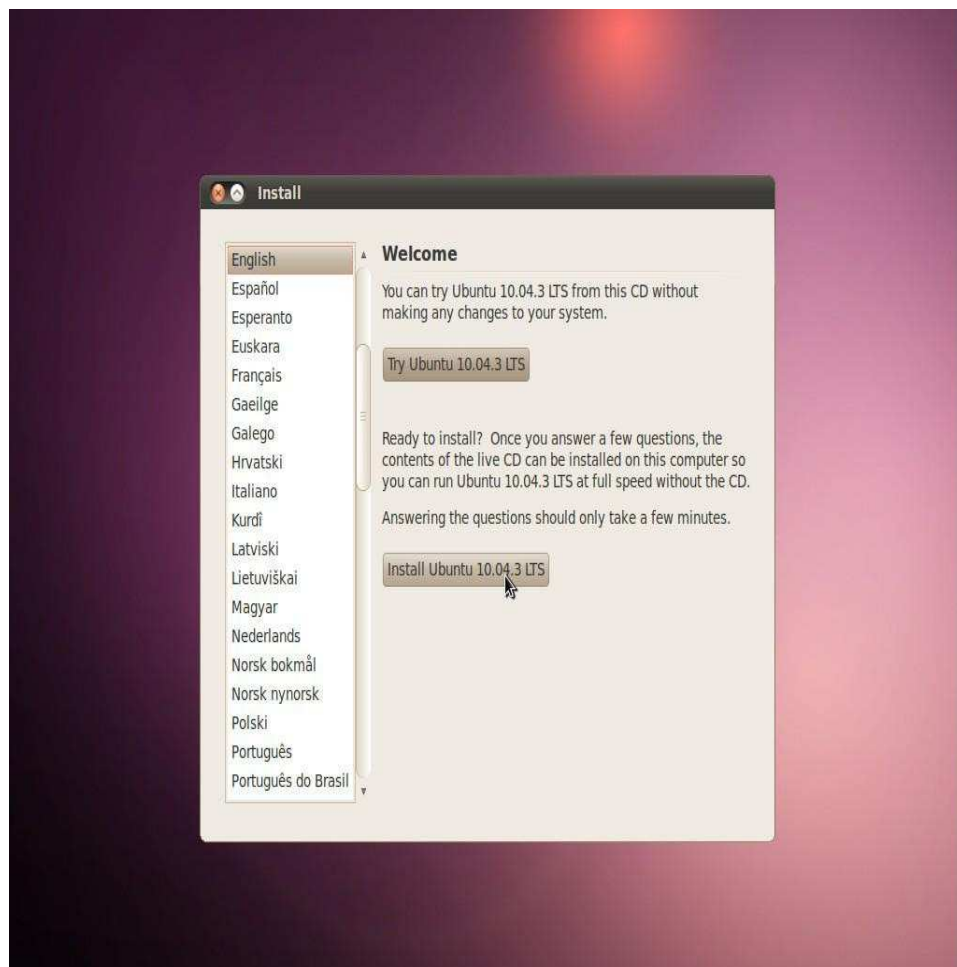


Fig 1: Welcome Screen For Ubuntu

Next option is to select the time zone. You can select region from the left drop down list and select your zone from the right drop down list. Or can simply select country from the map. Once selected, click “Forward”.

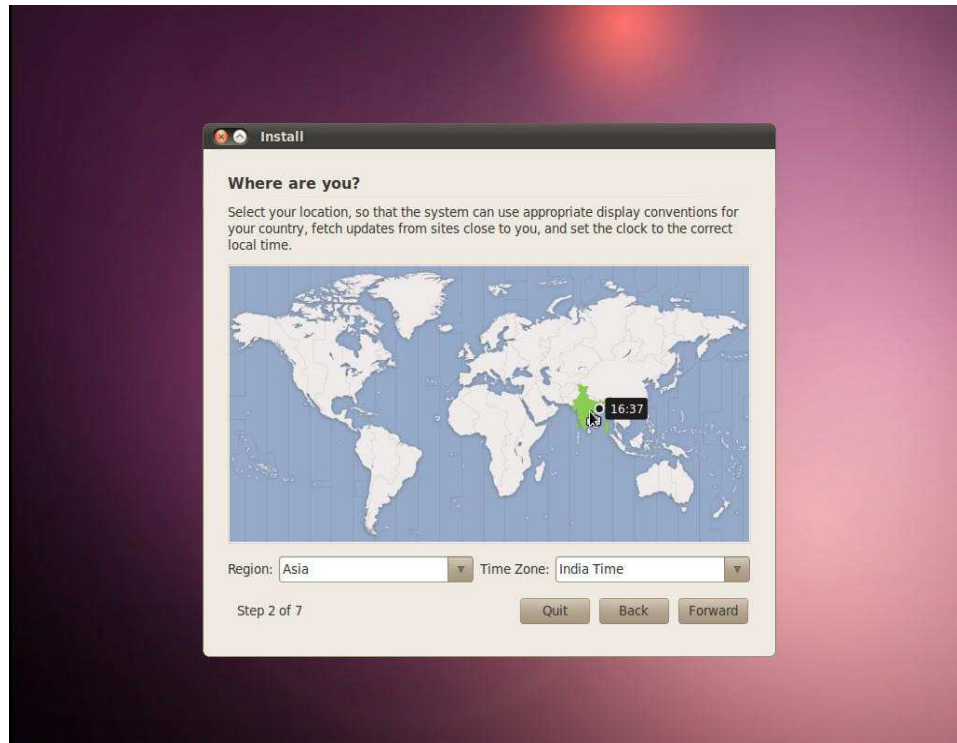


Fig 2: Time Zone Selection Screen

Then select your keyboard layout. Default is USA layout keyboard, which is the keyboard layout we use in India. Leave the default option selected and click “Forward”.



Fig 3: Keyboard Layout Screen

Later, Select “Specify partitions manually (advanced)” option and click Forward.

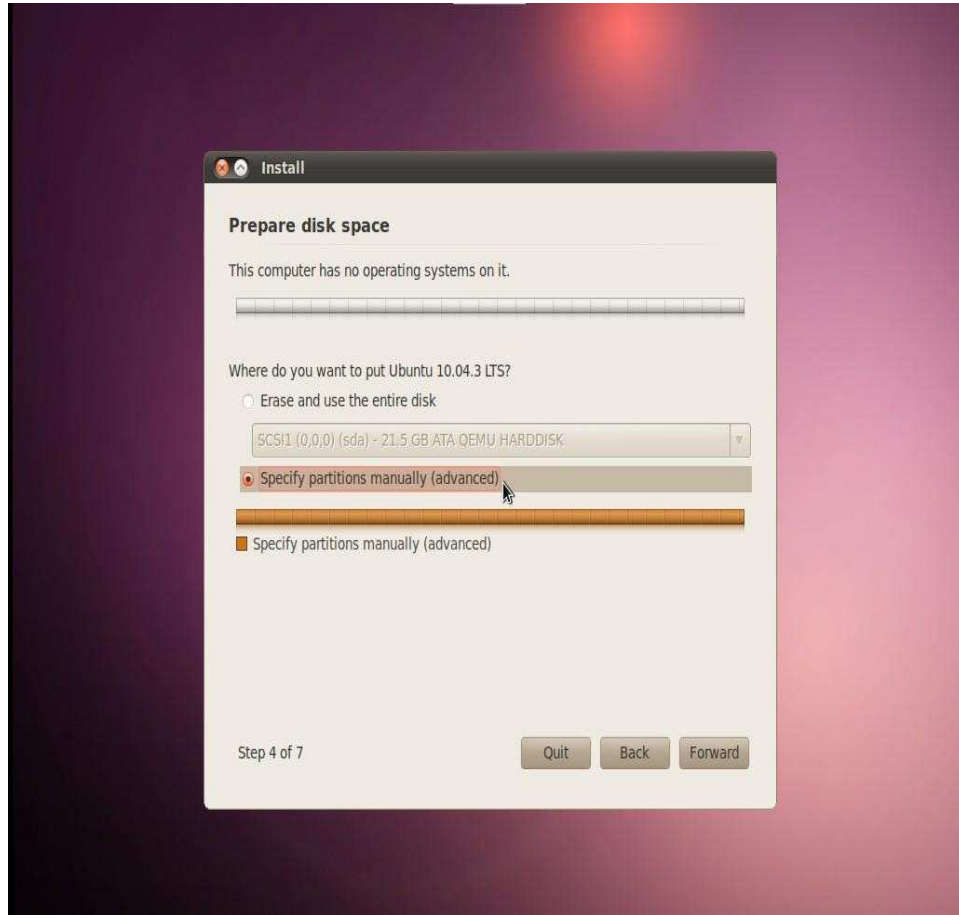


Fig 4: Option Screen to Prepare Disk Space.

Here we have to create a new partition table if it is not created already. Click on “New Partition Table” and click “Forward”.

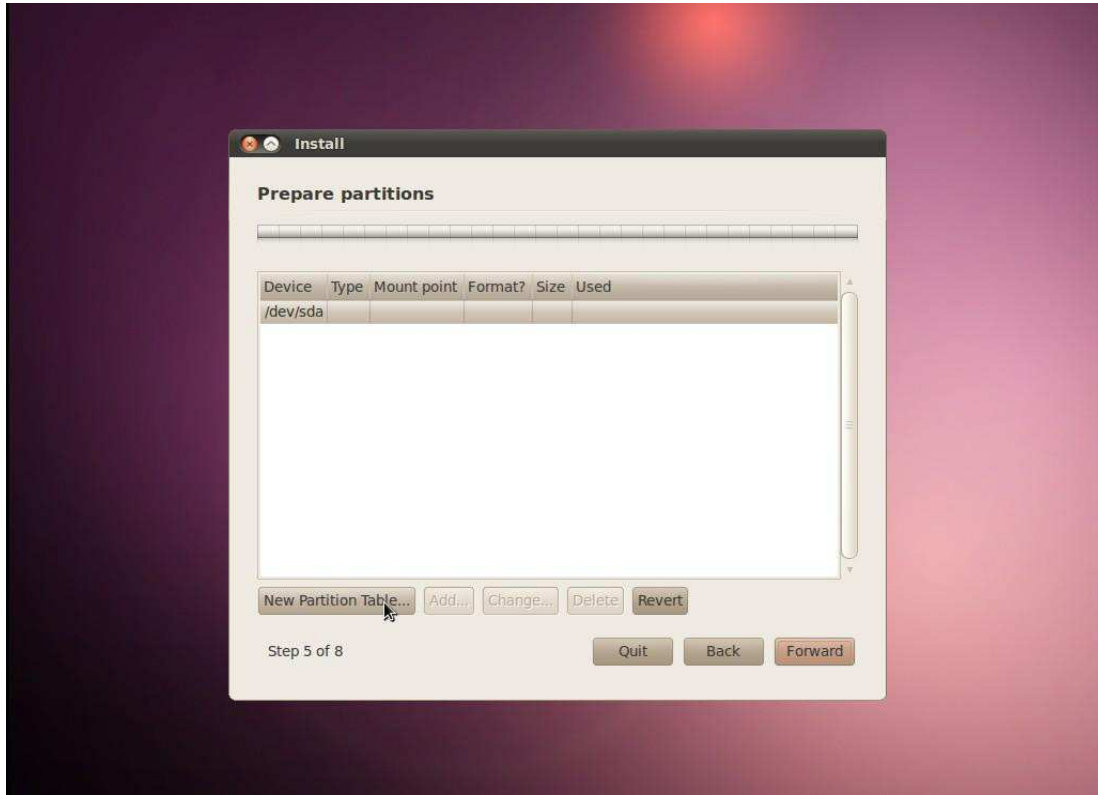


Fig 5: Manual Partition Screen.

In this screen we are able to see the available free space on our system. Click on “free space” in order to 'Add' /to create a partition.

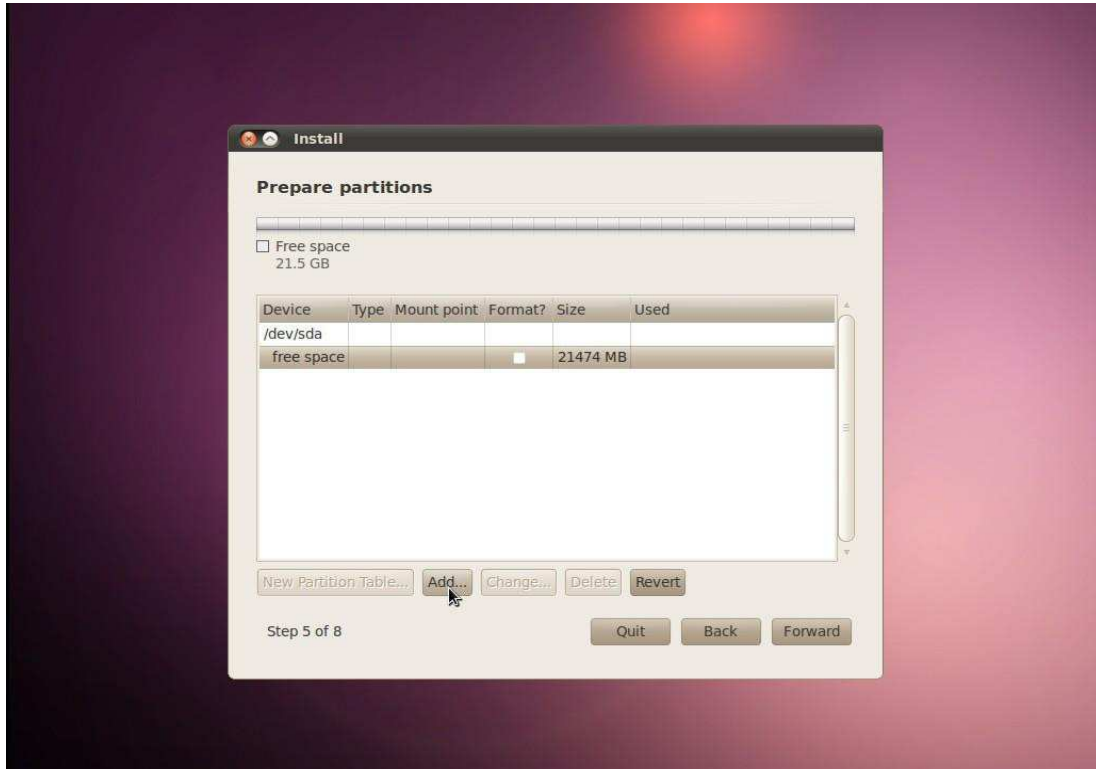


Fig 6: Snapshot to “Add New Partition”.

We recommend 500 MB for “/boot” partition. Enter the size in the appropriate section, “Use as” section should be configured for “Ext4 journaling file system”. Select “/boot” as the option from the “Mount Point” dropdown menu and click ok.

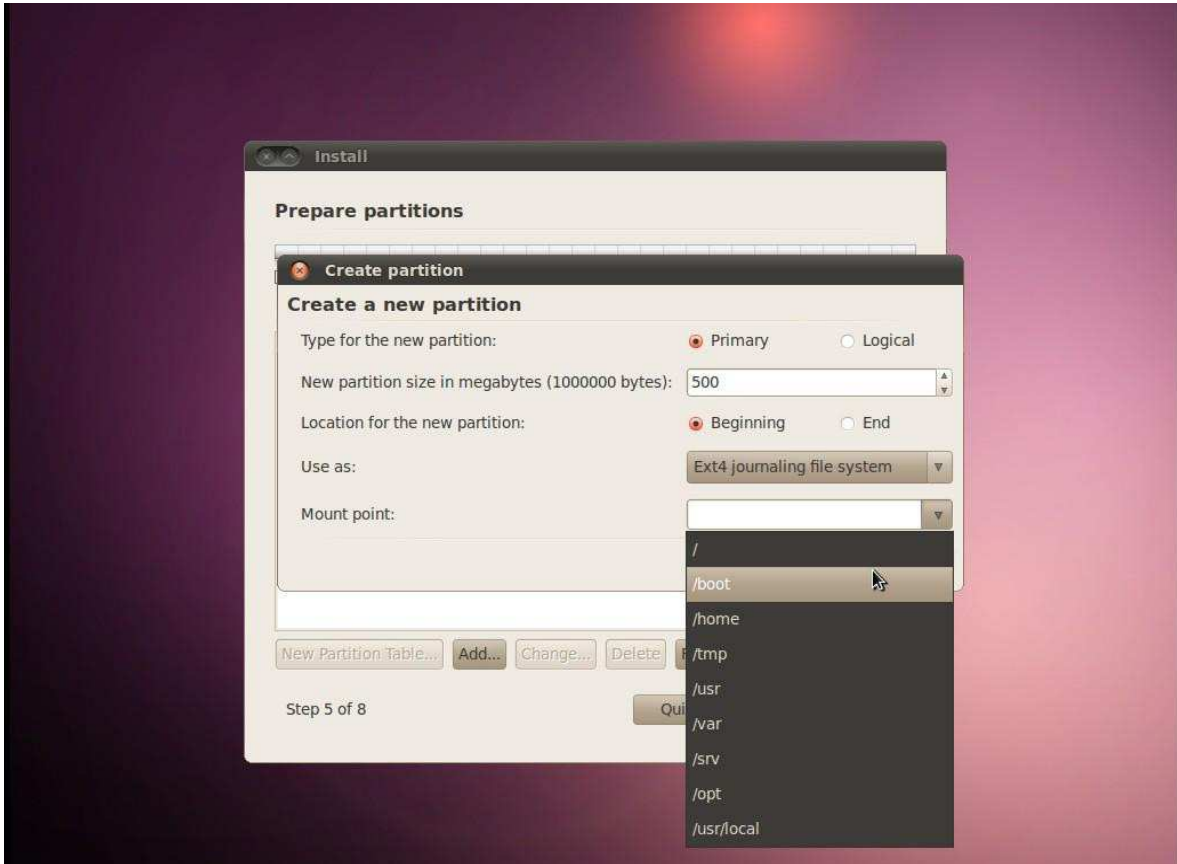


Fig 7: Create Boot Partition.

This creates the **/boot partition**.

Select free space again and click “Add” to create the swap partition.

(Swap area is used by the operating system as a virtual memory).

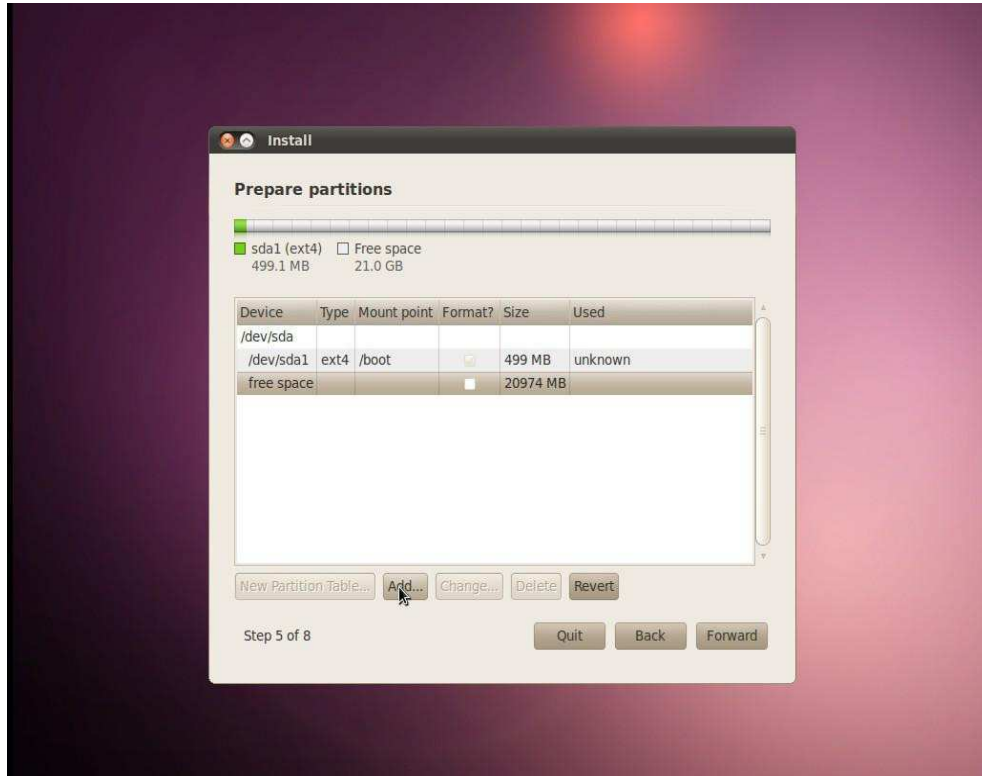


Fig: Boot Partition Created.

Recommended size for swap area is double the size of RAM, (so we choose 4 GB as the system memory size is 2 GB). From "Use as" drop down menu choose "swap area" as the option and click ok.

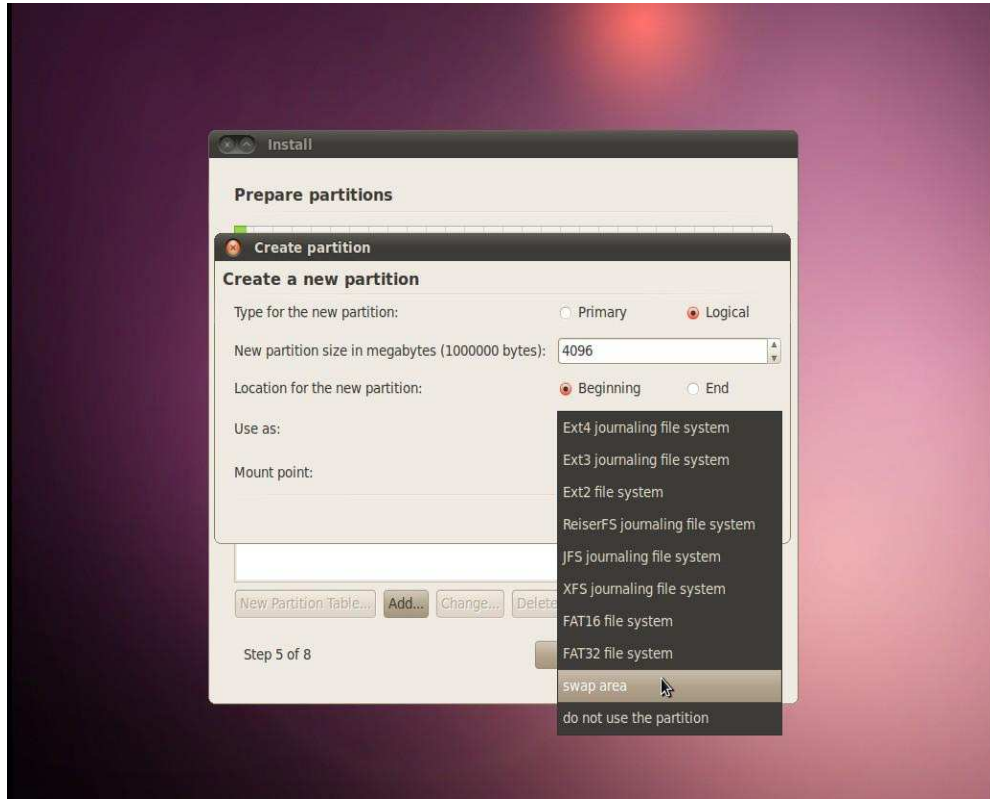


Fig: Create Swap Partition.

Similarly select the “free space” again to configure around 50 to 100 GB(depending on availability) for “/” partition and the rest of it can be configured for “/home” partition. Once all the partitions are created, they will displayed as shown below:

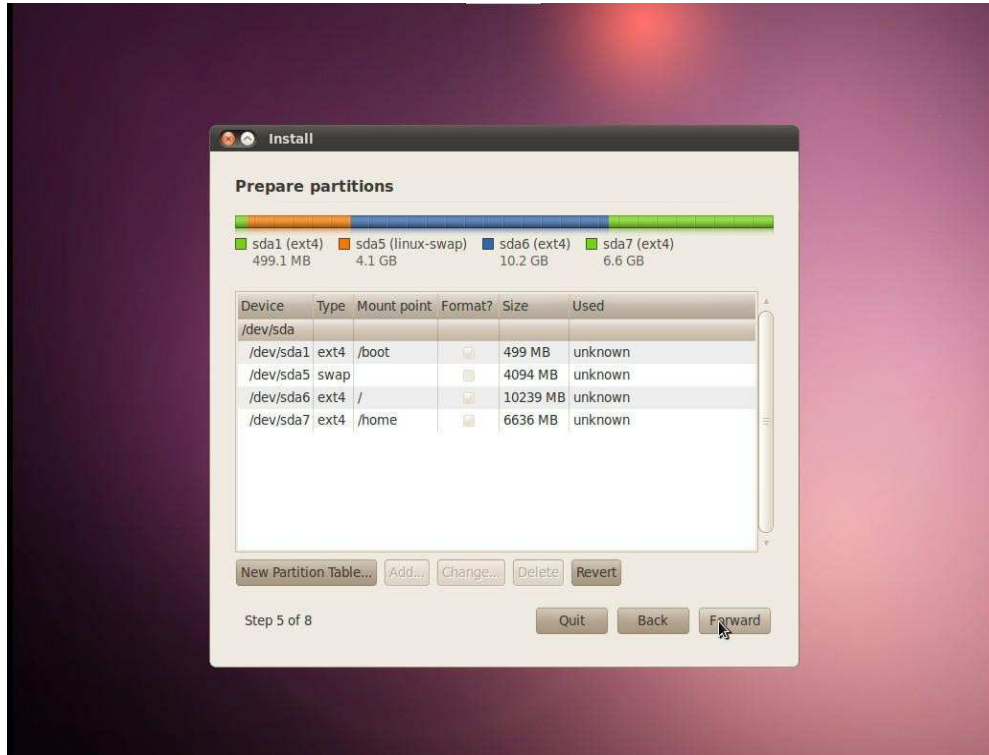


Fig: Shows all Created Partition

The step allows you to configure a user account, system name and the password for the account. Configure all the details as below and click “Forward”

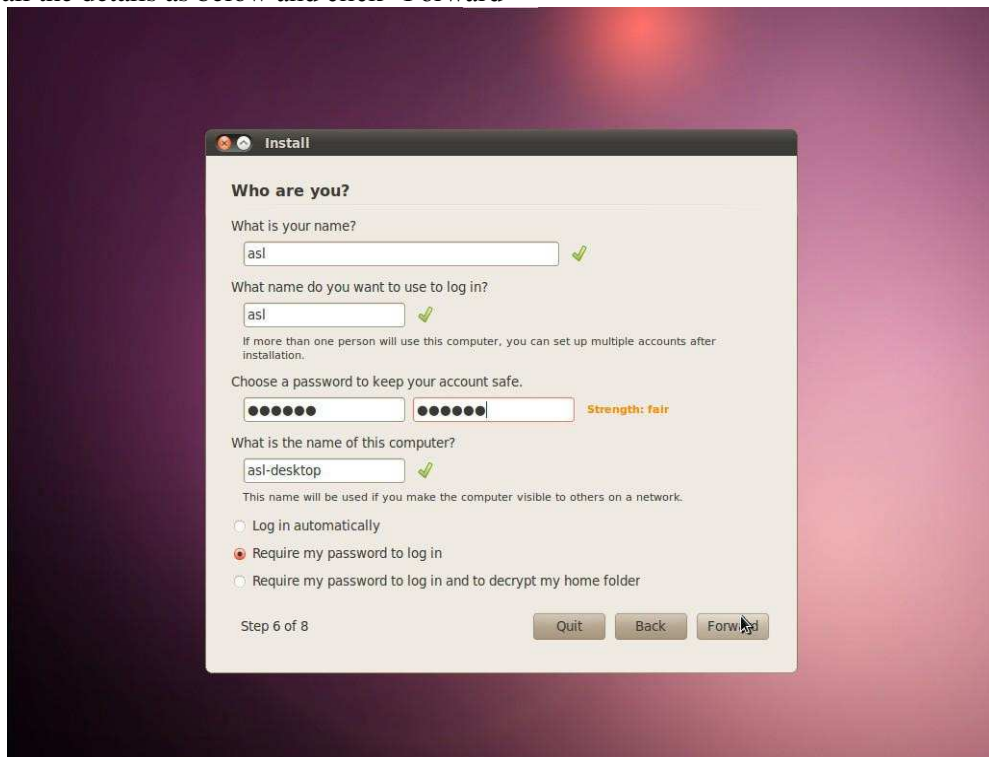


Fig: Configure User Account.

This completes the configuration part and the system is ready to be installed. The screen summarizes the options selected. Click “Install” to continue with the installation.



Fig: Configuration Completed.

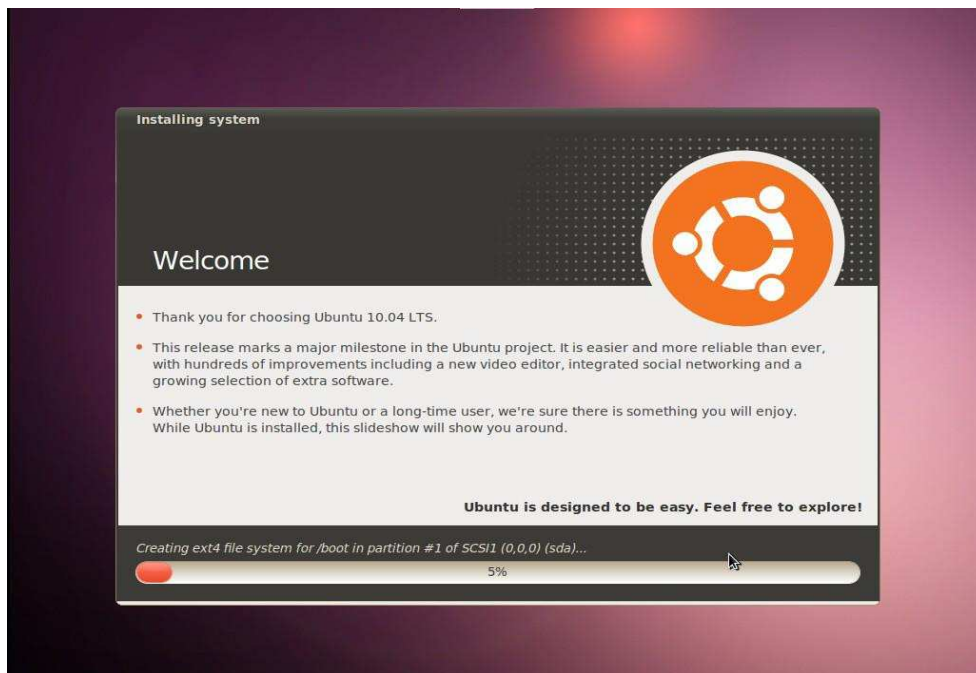


Fig. Installation of Ubuntu System Starts.

Once the installation is complete click “Restart Now” so the system can boot to the installed OS on the hard drive.

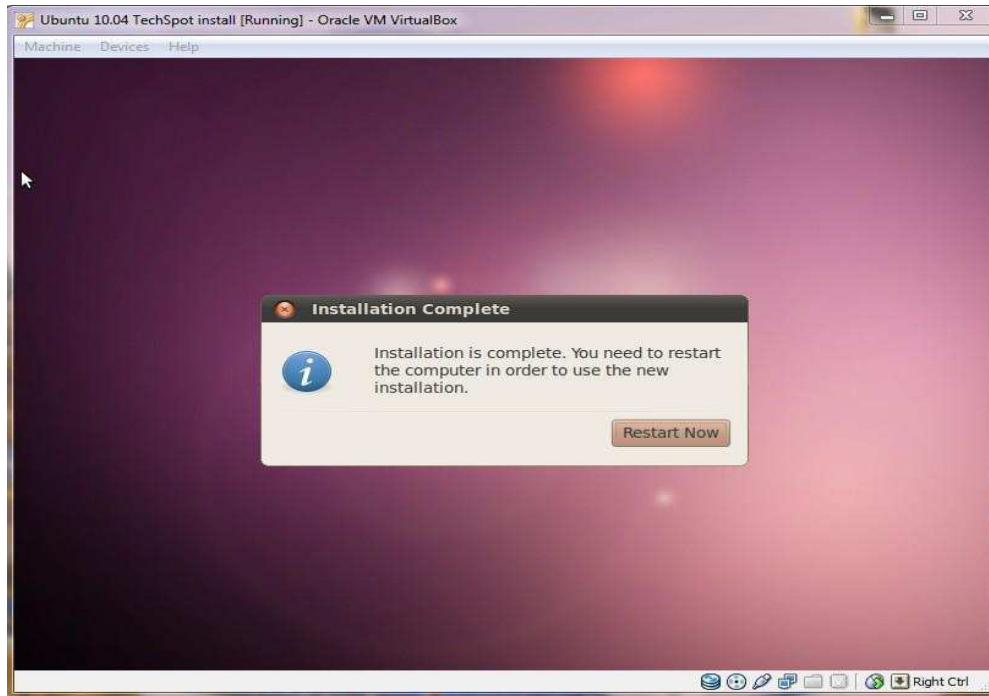


Fig. Restart The System.

Chapter 2

How to Change the Root Password in Ubuntu 10.04 Lucid Lynx

This brief tutorial will show you how to enable the root account in Ubuntu 10.10 if it's not already enabled. By default, Ubuntu will not allow you to login as the root user or administrator because the smallest mistakes will probably cripple your computer. If you don't mind logging in as the root user, and promise to be careful, then this tutorial is for you.

To get started, go to Applications → Accessories → Terminal, then run the command below to create a new password for the root account. Use below Command:

\$ sudo passwd root

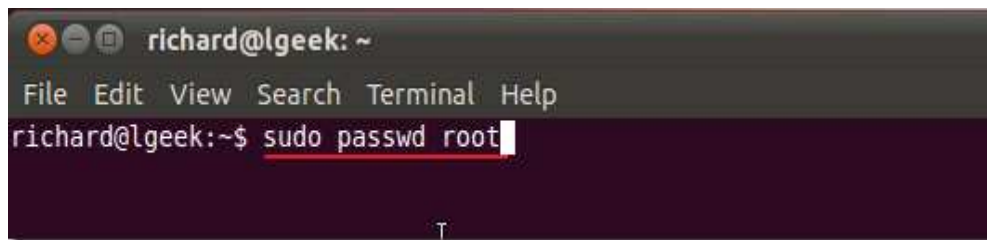
A terminal window titled 'richard@lgeek: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The command 'sudo passwd root' is entered at the prompt and is underlined in red. A cursor is at the end of the command.

Fig: Command Execution.

Next: type the below command to unlock the root or administration account.

\$ sudo passwd -u root

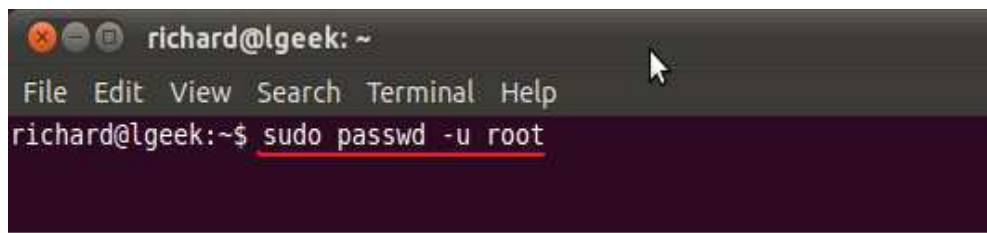
A terminal window titled 'richard@lgeek: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The command 'sudo passwd -u root' is entered at the prompt and is underlined in red. A mouse cursor is visible over the terminal window.

Fig: Command Execution.

In order to make the system functional there is need to “Log Out”:



Fig: Command Execution.

On the Login Screen, select the option “**other**” and type the **root** in the space provided for ‘username’ and type the ‘password’ you created for login.



Fig: Command Execution.

Chapter 3

Required Software (Tomcat6, Apache2 & Mysql-server) Installation and Configuration Process

We can install required software by two ways:

1. By suing 'aptoncd' CD &
2. By using terminal commands

3.1 Through AptOnCD application CD:

After Ubuntu installation put AptOnCD in your CD Drive.



Fig: AptOnCD Detection Screen.

Click on Start package manager. It will open Synaptic package manager.

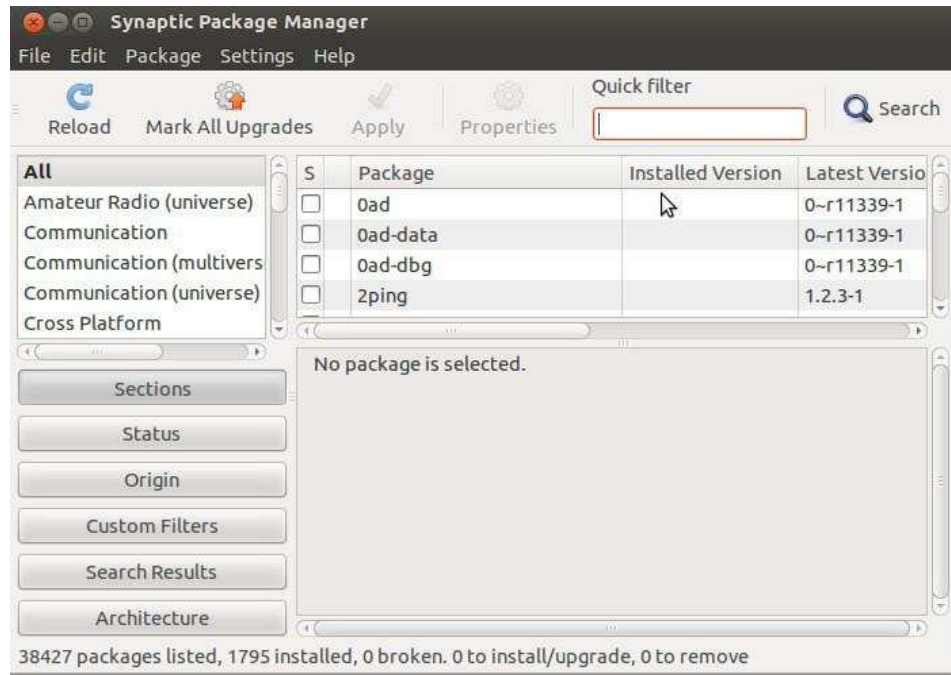


Fig: Search Screen for Synaptic package manager.

Type application name in Quick search text box. For example if you want to install Mysql server, type Mysql in the text box and hit enter, it will list all Mysql application. Then select Mysql-server application from the list, right click on it, then click on Mark for installation. It will display all the dependency packages. Select Mark.

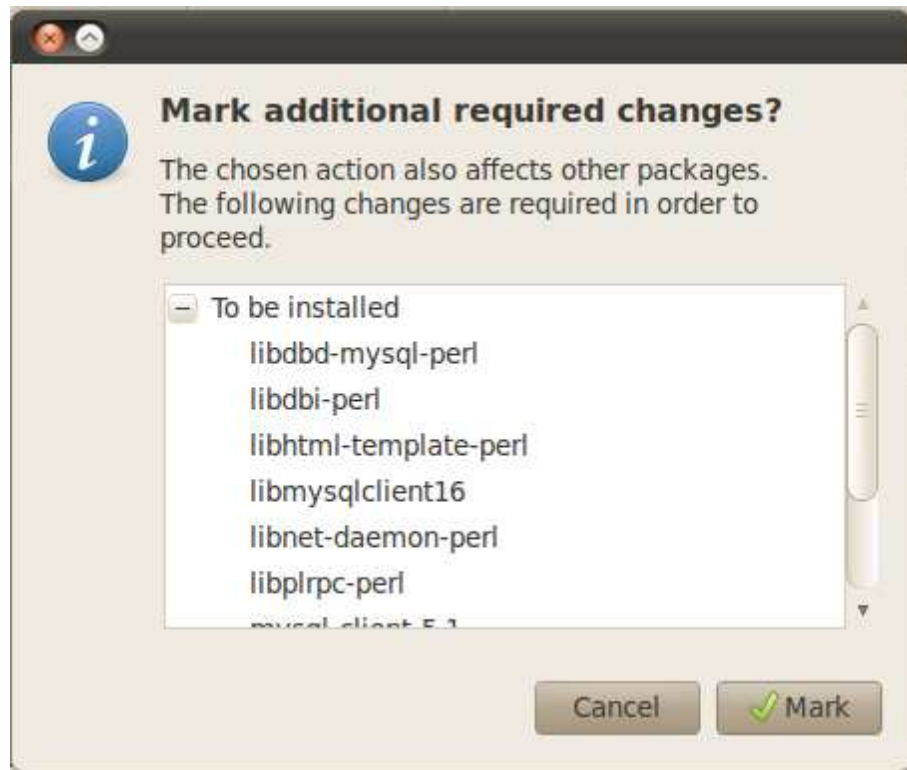


Fig: Screen showing Additional Packages.

After selecting all the application to be install, then finally click on Apply button.

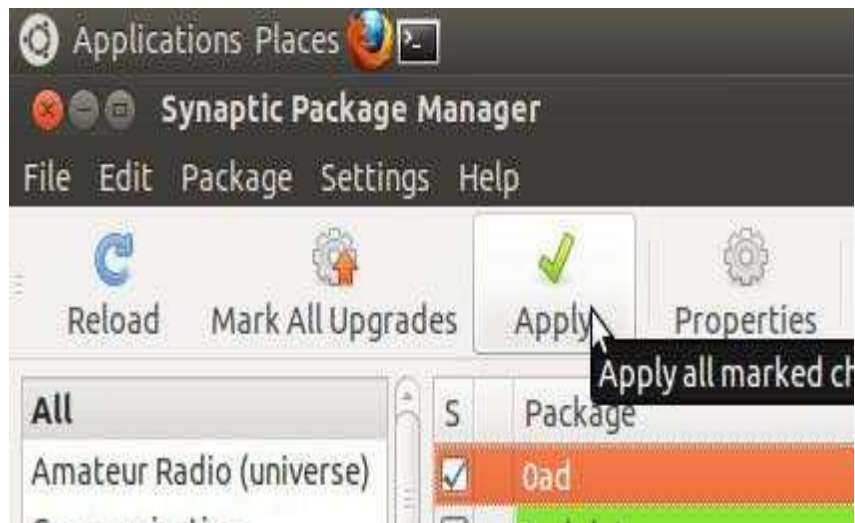


Fig: Apply the Additional Package Screen.

3.2 Using terminal commands:

(Please ensure that your machine should be connected to internet. Type below mentioned commands sequentially)

■ To install tomcat6:

```
$ sudo apt-get install tomcat6
```

■ To install apache2:

```
$ sudo apt-get install apache2
```

■ To install Mysql-server:

```
$ sudo apt-get install Mysql-server
```

Incase download & installation doesn't works by the above commands then you need to modify the "sources.list" file with below contents:

Location of sources.list file: **/etc/apt/sources.list**

To edit sources.list file:

```
$ sudo gedit /etc/apt/sources.list
```

Copy the following contents and paste it to sources.list file present in /etc/apt/sources.list with root permissions

```
deb cdrom:[APTonCD for ubuntu lucid - i386 (2012-10-13 21:34) CD1]/ /
deb http://in.archive.ubuntu.com/ubuntu/ lucid main restricted universe multiverse
deb-src http://in.archive.ubuntu.com/ubuntu/ lucid main restricted universe multiverse
deb http://in.archive.ubuntu.com/ubuntu/ lucid-security main restricted universe multiverse
deb http://in.archive.ubuntu.com/ubuntu/ lucid-updates main restricted universe multiverse
deb http://in.archive.ubuntu.com/ubuntu/ lucid-proposed main restricted universe multiverse
deb http://in.archive.ubuntu.com/ubuntu/ lucid-backports main restricted universe multiverse
deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-security main restricted universe multiverse
deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-updates main restricted universe multiverse
deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-proposed main restricted universe multiverse
deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-backports main restricted universe multiverse
deb http://archive.canonical.com/ubuntu lucid partner
deb-src http://archive.canonical.com/ubuntu lucid partner
```

Also you can refer the website:

<http://repogen.simplylinux.ch/>

The page as follows will open:

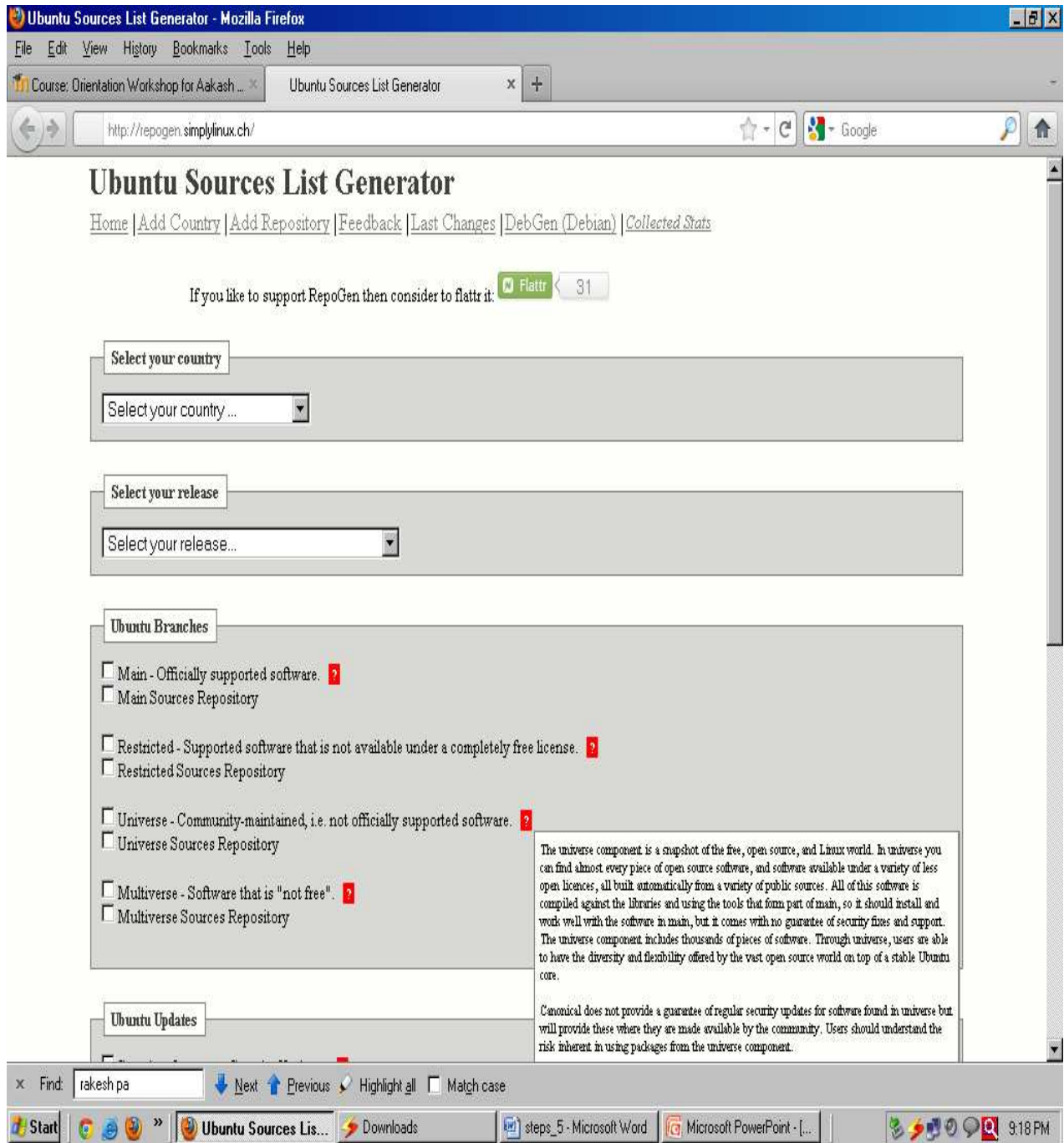


Fig: Homepage of Sources List Generator.

Select your country and your release.

After that select the **branches and updates** as well the options whichever you feel important.

And click on **generate source list**. It will generate source list as we provide you above. Copy paste it and follow the previous steps.

 ##### OFFICIAL UBUNTU REPOS #####
 #####

Ubuntu Main Repos
 deb http://in.archive.ubuntu.com/ubuntu/ lucid main restricted universe multiverse
 deb-src http://in.archive.ubuntu.com/ubuntu/ lucid main restricted universe multiverse

Ubuntu Update Repos
 deb http://in.archive.ubuntu.com/ubuntu/ lucid-security main restricted universe multiverse
 deb http://in.archive.ubuntu.com/ubuntu/ lucid-updates main restricted universe multiverse
 deb http://in.archive.ubuntu.com/ubuntu/ lucid-proposed main restricted universe multiverse
 deb http://in.archive.ubuntu.com/ubuntu/ lucid-backports main restricted universe multiverse
 deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-security main restricted universe multiverse
 deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-updates main restricted universe multiverse
 deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-proposed main restricted universe multiverse
 deb-src http://in.archive.ubuntu.com/ubuntu/ lucid-backports main restricted universe multiverse

Fig: Generated Source List Screen.

After modification of sources.list file please logout and login again to system then try the following commands:

```
$ sudo apt-get install tomcat6
$ sudo apt-get install apache2
$ sudo apt-get install Mysql-server
$ sudo apt-get install php5
$ sudo apt-get install libapache2-mod-php5
$ sudo apt-get install php5-mysql
```

This will help you to install all the above mentioned packages.

Chapter 4

Application testing with sample examples

Java Development Kit & Tomcat

Install JDK and tomcat in Ubuntu

1. Put the AptOnCd in your CD Drive, Start Package Manger.
2. In quick search text box, type openjdk6jdk then press enter . It will list openjdk6jdk.
3. Right click on it, select Mark for installation. Then, Select Mark. Finally click Apply button.
4. Again type tomcat6 in quick search box. Right click on tomcat6

tomcat6admin
tomcat6common
tomcat6user
tomcat6docs
tomcat6examples,

Select mark for installation. Select Mark. Finally click on Apply button.

6. Start tomcat

Open your terminal as Application Accessories Terminal → and type as follows.

```
$ sudo /etc/init.d/tomcat6 start
```

7. Now, you can use your browser to navigate this address:

```
http://localhost:8080
```

And you will see the tomcat It works! Page. Usually, HTTP server works with the port 80, but the default port for tomcat is 8080, thus we need specify 8080 after your ip address.

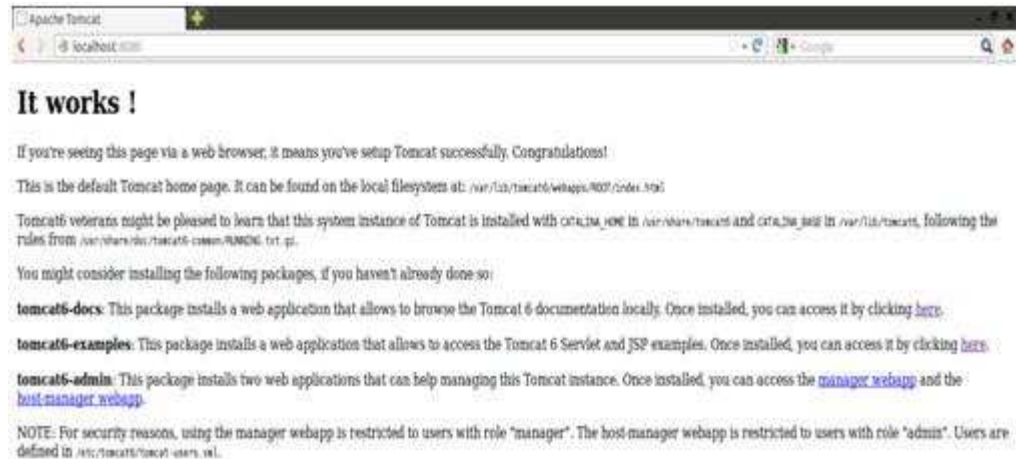


Fig: Tomcat6 default webpage.

8. To run Java web site in Tomcat Copy your java Application to tomcat6 root folder using commands as follows:

```
$ Sudo cp your_app_path / /var/lib/tomcat6/webapps/
```

9. Restart tomcat:

```
$ Sudo /etc/init.d/tomcat6 restart
```

10. Now, you can use your browser to navigate to your site:

```
http://localhost:8080/your_app_path
```

Installing Apache 2

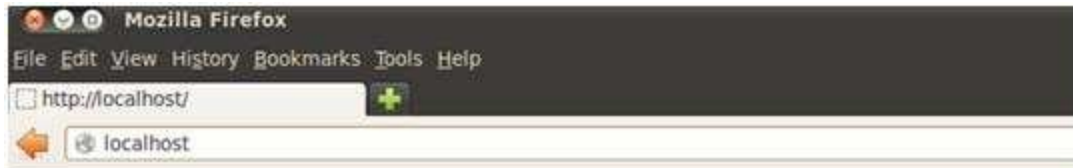
To only install the apache2 webserver, use the AptOnCD to install apache2. Put the AptOnCD in your CD Drive and Start Package Manger. In quick search text box of Package manager, Search for “apache2” package then Select the package, right click on it, and select Mark for installation. It will show dependancy list, just click on Mark. After selecting all the packages click on Apply button to install.

It requires a restart for it to work. To Open your terminal go to application → Accessories → Terminal then type as follows.

```
sudo /etc/init.d/apache2 restart
```

Checking Apache 2 installation

Using web browser, go to the URL <http://localhost> : if you read "It works!", which is the Content of the file /var/www/index.html, this proves Apache works.



It works!

This is the default web page for this server.

The web server software is running but no content has been added, yet.

Fig: Apache2 default webpage.

Installing PHP5

To only install the php5, use the AptOnCD to install. Put the AptOnCd in your CD Drive and Start Package Manger. In quick search text box of Package manager, Search for “php5” and “libapache2modphp5” packages then Select the package, right click on it, and select Mark for installation. It will show dependency list, just click on Mark. After selecting all the packages click on Apply button to install. It requires a restart for it to work.

To Open your terminal go to application → Accessories →Terminal then type as follows.

```
$ sudo /etc/init.d/apache2 restart
```

Checking PHP 5 installation

In /var/www , create a text file called "test.php", grant the world permission (sudo chmod -R 777 /var/www) to read it, write in it. In the test.php test file write the following line and save:

```
<?php phpinfo(); ?>
```

then, with your web browser, go to the URI "http://localhost/test.php": if you can see a description of PHP5 configuration, it proves PHP 5 works with Apache.

Installing MYSQL with PHP 5

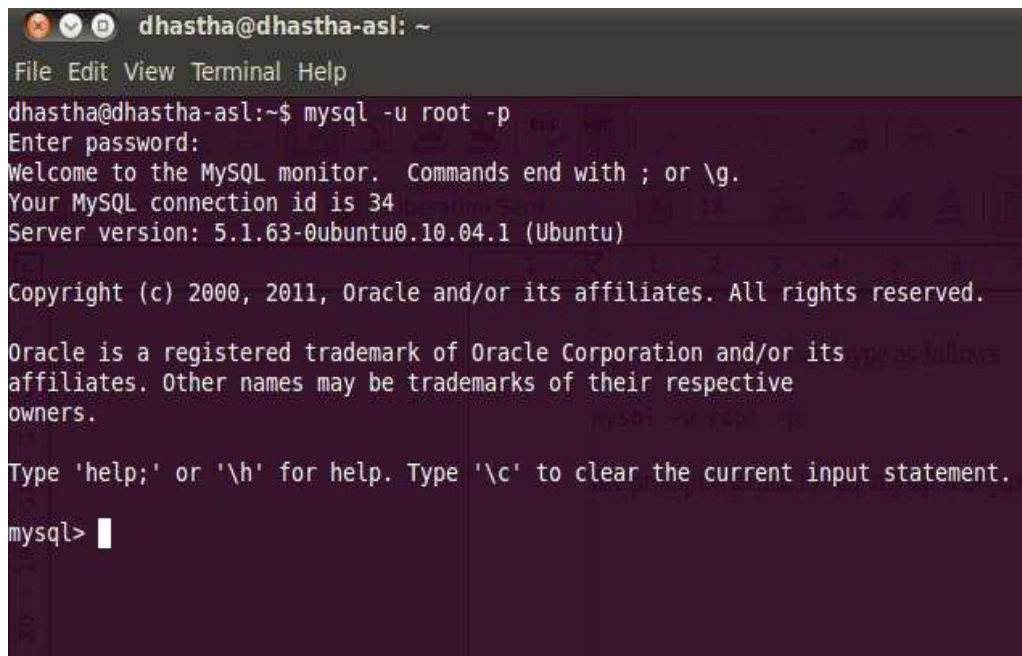
Install the following packages using APTonCD
mysql-server libapache2-mod-auth-mysql php5-mysql
You will be asked to provide a password for the MySQL root user.

Checking MySQL installation

Open your terminal and type as follows

mysql -u root -p

the prompt will ask for the mysql root password. Issue th password it will go to the mysql prompt.



```
dhastha@dhastha-asl: ~
File Edit View Terminal Help
dhastha@dhastha-asl:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 34
Server version: 5.1.63-0ubuntu0.10.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Fig: MYSQL Command prompt.

Create a mysql user

In your mysql prompt type as follows,

mysql>CREATE USER 'username'@'localhost' IDENTIFIED BY 'password';

For ex: CREATE USER 'tester'@'localhost' IDENTIFIED BY 'test123';

Create a Database

In your mysql prompt type as follows,

```
mysql>CREATE DATABASE database_name;
```

For ex: CREATE DATABASE employee;

Give privileges to the user to a particular Database

To grant particular privileges , type as follows

```
mysql>GRANT SELECT,INSERT,UPDATE,DELETE,CREATE,DROP ON  
database_name.* TO 'username'@'localhost';
```

For Ex: GRANT ALL ON employee.* TO 'tester'@'localhost'; (this gives all permission to tester user to the employee database)

Exit mysql prompt type \q to quit the terminal.

Login as New user

In terminal type as

```
mysql -u tester -p
```

Use the Database:

After login to the mysql prompt type as follows to use a particular database

```
mysql>use database_name;
```

For Ex: mysql>use employee;

Create table in Database

To create a table called addressbook with 5 field.

```
mysql>CREATE TABLE addressbook(id int not null primary key auto_increment, name  
varchar(30), address text, mobileno varchar(13), email varchar(50));
```

id - a unique number assigned to each entry. The field hold an integer value that is automatically

incremented each time an entry is added.

name - a 30 character field holding the name.

address - a text field holding a text.

mobileno - a 13 character field holding the mobile number.

email - a 50 character field holding the email.

To see table description, use

```
mysql>desc tablename;
```

For e.g.: desc addressbook;

```
mysql> desc addressbook;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| id    | int(11)   | NO   | PRI | NULL    | auto_increment |
| name  | varchar(30) | YES  |     | NULL    |                |
| address | text      | YES  |     | NULL    |                |
| mobileno | varchar(13) | YES  |     | NULL    |                |
| email | varchar(50) | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> █
```

Fig: MYSQL DEC command.

Inserting data into table

To insert some values in addressbook table.

```
insert into addressbook(id,name,address,mobileno,email) values (NULL, 'Arulalan',
'Pillaiyarpalayam, Kanchipuram-631502', '+917827990988', 'arulalant@gmail.com');
```

Mysql Database Backup and Restore

Use following command line for taking backup of your MySQL database using mysqldump utility.

Open your terminal and type as follows

```
mysqldump -u username -p database_name > dumpfilename.sql
```

For ex:

```
mysqldump -u tester -p employee > employee-dump.sql
```

It will create employee dump file.

To restore dumb file, type as follows

```
mysql -u username -p database_name < dumpfilepath
```

For ex:

```
mysql -u tester -p employee < employee-dump.sql
```

Chapter 5

Clicker Software Installation

Configuration of Remote Aakash Clicker

Download the Clicker folder from moodle and save it Desktop

Clicker Folder Consist of 3 files

- 1.RemoteAakashClicker.war
- 2.remoteaakashclicker.sql
- 3.Remote Clicker.php

Open the Terminal by clicking: **Application->Accessories->Terminal**
or
by using the shortcut key: **Ctrl+Alt+t**

go to Desktop by the following Command : **cd Desktop**

A screenshot of a Linux terminal window. The title bar shows 'gobi@gobi-desktop: ~/Desktop'. The terminal has a menu bar with 'File Edit View Terminal Help'. The prompt is 'gobi@gobi-desktop:~\$'. The command 'cd Desktop' has been entered and executed, resulting in a new prompt 'gobi@gobi-desktop:~/Desktop\$' with a cursor. A mouse cursor is visible on the right side of the terminal window.

Fig: Terminal screen

Type this command to list out the files in Desktop

\$ ls

After you type this command press enter, the screen look like as:



```
gobi@gobi-desktop: ~/Desktop
File Edit View Terminal Help
gobi@gobi-desktop:~$ cd Desktop
gobi@gobi-desktop:~/Desktop$ ls
clicker Desktop
gobi@gobi-desktop:~/Desktop$
```

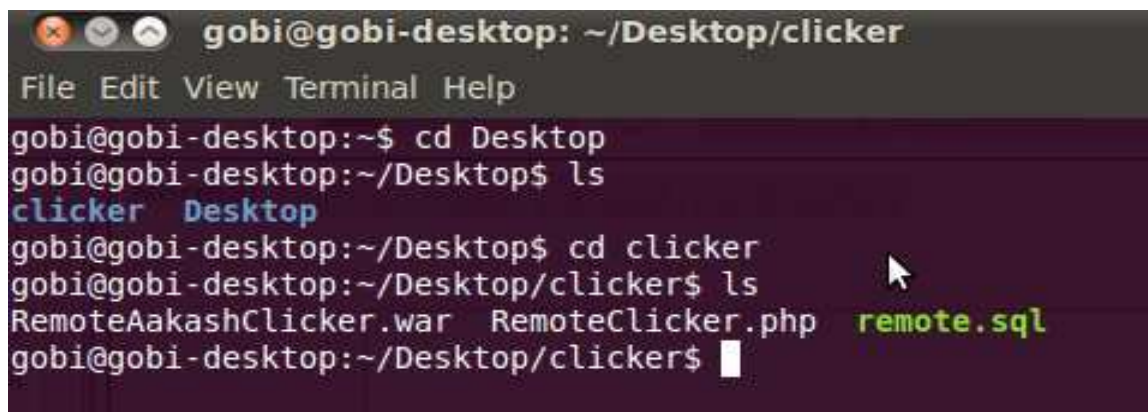
Fig: Terminal screen

Go to the clicker folder and see the file list by the following command

\$ cd clicker

press enter and type the command to list out the files in the clicker folder

\$ ls



```
gobi@gobi-desktop: ~/Desktop/clicker
File Edit View Terminal Help
gobi@gobi-desktop:~$ cd Desktop
gobi@gobi-desktop:~/Desktop$ ls
clicker Desktop
gobi@gobi-desktop:~/Desktop$ cd clicker
gobi@gobi-desktop:~/Desktop/clicker$ ls
RemoteAakashClicker.war RemoteClicker.php remote.sql
gobi@gobi-desktop:~/Desktop/clicker$
```

Fig: Terminal screen

Once you open this folder in terminal do the following steps:

Step 1

- Put the RemoteAakashClicker.war into webapps folder in tomcat6. Command to put the war file into the folder is:

\$ sudo cp RemoteAakashClicker.war /var/lib/tomcat6/webapps/

- It will ask password enter the root password



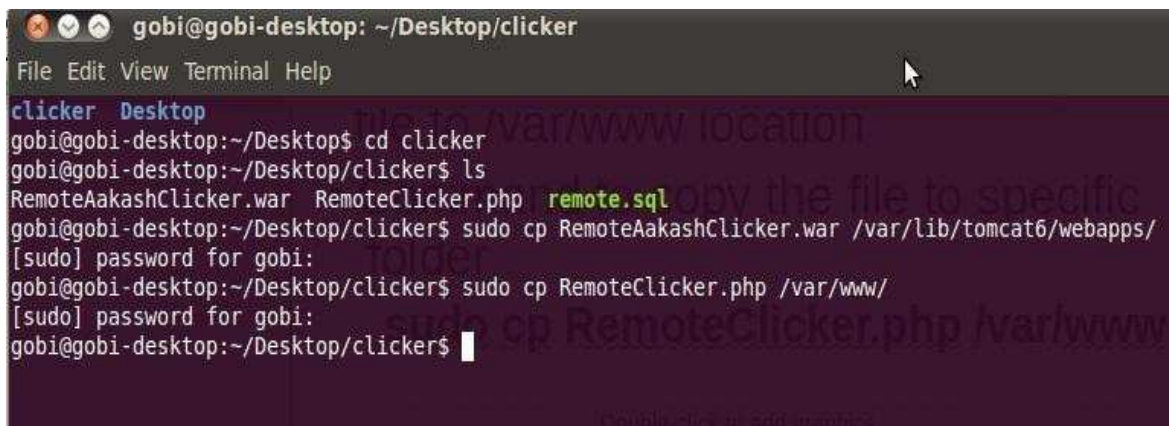
```
gobi@gobi-desktop: ~/Desktop/clicker
File Edit View Terminal Help
clicker Desktop
gobi@gobi-desktop:~/Desktop$ cd clicker
gobi@gobi-desktop:~/Desktop/clicker$ ls
RemoteAakashClicker.war RemoteClicker.php remote.sql
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteAakashClicker.war /var/lib/tomcat6/webapps/
[sudo] password for gobi:
gobi@gobi-desktop:~/Desktop/clicker$
```

Fig: Terminal screen

Step 2

- We have to copy RemoteClicker.php file to **/var/www location**. Command to copy the file to specific folder:

\$ sudo cp RemoteClicker.php /var/www



```
gobi@gobi-desktop: ~/Desktop/clicker
File Edit View Terminal Help
clicker Desktop
gobi@gobi-desktop:~/Desktop$ cd clicker
gobi@gobi-desktop:~/Desktop/clicker$ ls
RemoteAakashClicker.war RemoteClicker.php remote.sql
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteAakashClicker.war /var/lib/tomcat6/webapps/
[sudo] password for gobi:
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteClicker.php /var/www/
[sudo] password for gobi:
gobi@gobi-desktop:~/Desktop/clicker$
```

Fig: Terminal screen

Step 3

- Rrestore the remote.sql dump file in mysql. Command to restore the dump file is:

\$ mysql -u root -p <remoteaakashclicker.sql

- It will ask for mysql root password (please note it is not system root password it is mysql Password)

```
gobi@gobi-desktop: ~/Desktop/clicker
File Edit View Terminal Help
gobi@gobi-desktop:~$ cd Desktop
gobi@gobi-desktop:~/Desktop$ ls
clicker Desktop
gobi@gobi-desktop:~/Desktop$ cd clicker
gobi@gobi-desktop:~/Desktop/clicker$ ls
RemoteAakashClicker.war RemoteClicker.php remote.sql
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteAakashClicker.war /var/lib/tomcat6/webapps/
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteClicker.php /var/www/
gobi@gobi-desktop:~/Desktop/clicker$ mysql -u root -p <remote.sql
Enter password:
gobi@gobi-desktop:~/Desktop/clicker$
```

Fig: Terminal screen

Step 4

- Create user in mysql and if we want to give all privileges to that user then go to mysql using:

```
$ mysql -u root -p
```

- It will ask mysql root password give the mysql root password and press enter :

```
gobi@gobi-desktop: ~/Desktop/clicker
File Edit View Terminal Help
gobi@gobi-desktop:~/Desktop$ cd clicker
gobi@gobi-desktop:~/Desktop/clicker$ ls
RemoteAakashClicker.war RemoteClicker.php remote.sql
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteAakashClicker.war /var/lib/tomcat6/webapps/
gobi@gobi-desktop:~/Desktop/clicker$ sudo cp RemoteClicker.php /var/www/
gobi@gobi-desktop:~/Desktop/clicker$ mysql -u root -p <remote.sql
Enter password:
gobi@gobi-desktop:~/Desktop/clicker$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 193
Server version: 5.1.63-0ubuntu0.10.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Fig: Terminal screen

- We want to create the mysql user with name clicker_ui and pass word clicker_ui.Command to create mysql user is

```
Mysql> CREATE USER 'clicker_ui'@'localhost' IDENTIFIED BY 'clicker_ui';
```

- We want to give privileges for clicker_ui user the command to give privileges is

```
Mysql> GRANT ALL PRIVILEGES ON *.* TO 'clicker_ui'@'localhost';
```

- Close the mysql command prompt:

```
Mysql> exit
```

- Once you exit open the my.cnf in this location **/etc/mysql/my.cnf**

- Use this command to open the file it will ask for system root password

```
$ sudo gedit /etc/mysql/my.cnf
```

- This my.cnf file will open in gedit separate window

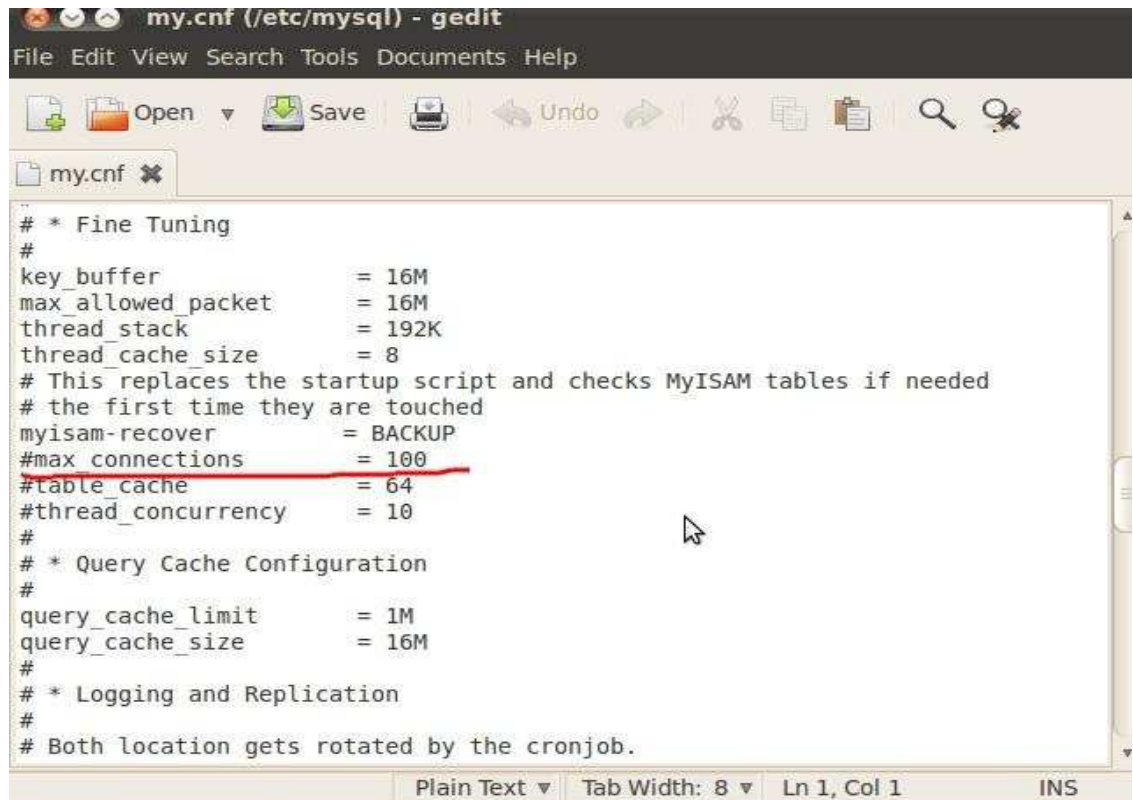
- Find this line

```
#max_connections = 100
```

- Remove this # symbol and change 100 to 1000

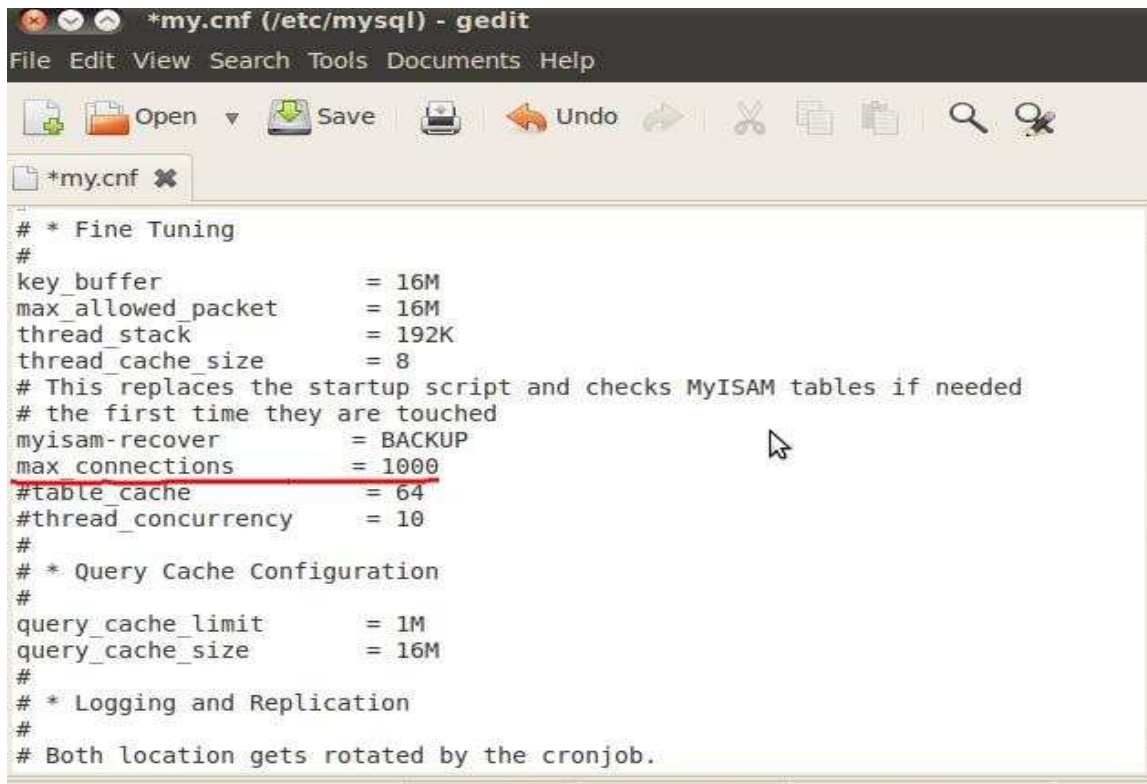
```
max_connections = 1000
```

- Once you made change save it by press save button or file -> save



```
my.cnf (/etc/mysql) - gedit
File Edit View Search Tools Documents Help
Open Save Undo
my.cnf
# * Fine Tuning
#
key_buffer          = 16M
max_allowed_packet  = 16M
thread_stack        = 192K
thread_cache_size   = 8
# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched
mysam-recover       = BACKUP
#max connections    = 100
#table cache        = 64
#thread_concurrency = 10
#
# * Query Cache Configuration
#
query_cache_limit    = 1M
query_cache_size     = 16M
#
# * Logging and Replication
#
# Both location gets rotated by the cronjob.
Plain Text Tab Width: 8 Ln 1, Col 1 INS
```

Fig: Modify my.cnf file.



```
*my.cnf (/etc/mysql) - gedit
File Edit View Search Tools Documents Help
Open Save Undo
*my.cnf
# * Fine Tuning
#
key_buffer          = 16M
max_allowed_packet  = 16M
thread_stack        = 192K
thread_cache_size   = 8
# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched
mysam-recover       = BACKUP
#max connections    = 1000
#table cache        = 64
#thread_concurrency = 10
#
# * Query Cache Configuration
#
query_cache_limit    = 1M
query_cache_size     = 16M
#
# * Logging and Replication
#
# Both location gets rotated by the cronjob.
```

Fig: Modify my.cnf file

Step 5 (final Step)

■ After completing above steps you need to restart the Mysql and Tomcat Service

■ The command to restart this service is as follow

For **tomcat**: **\$ sudo service tomcat6 restart**

For **mysql**: **\$ sudo /etc/init.d/mysql restart**

Chapter 6

Remote Center registration Process

Note that, Process of remote center registration is one time only. Follow the IITB-teachers instruction's which are shown below:

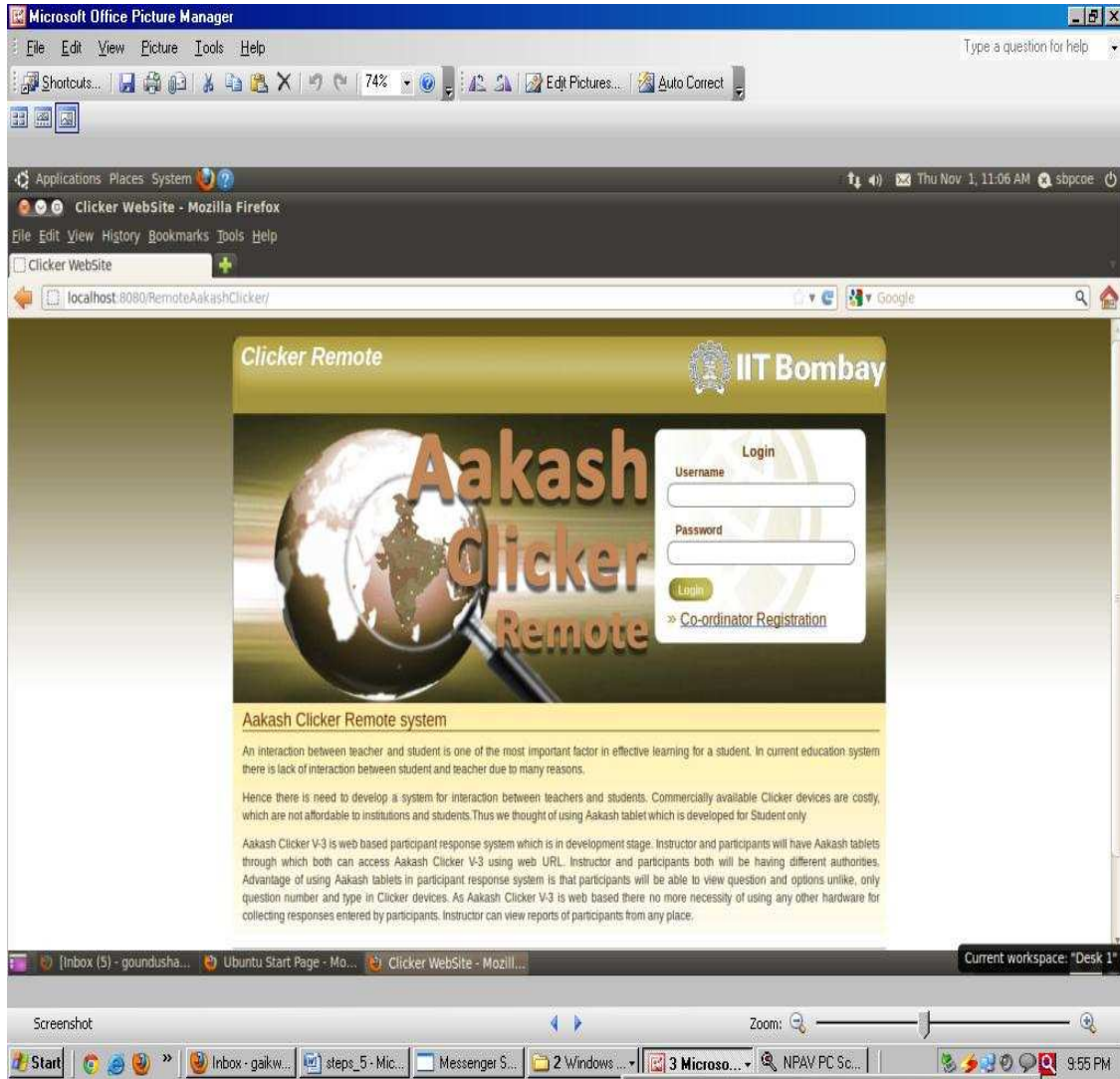


Fig 1: Registration Page.

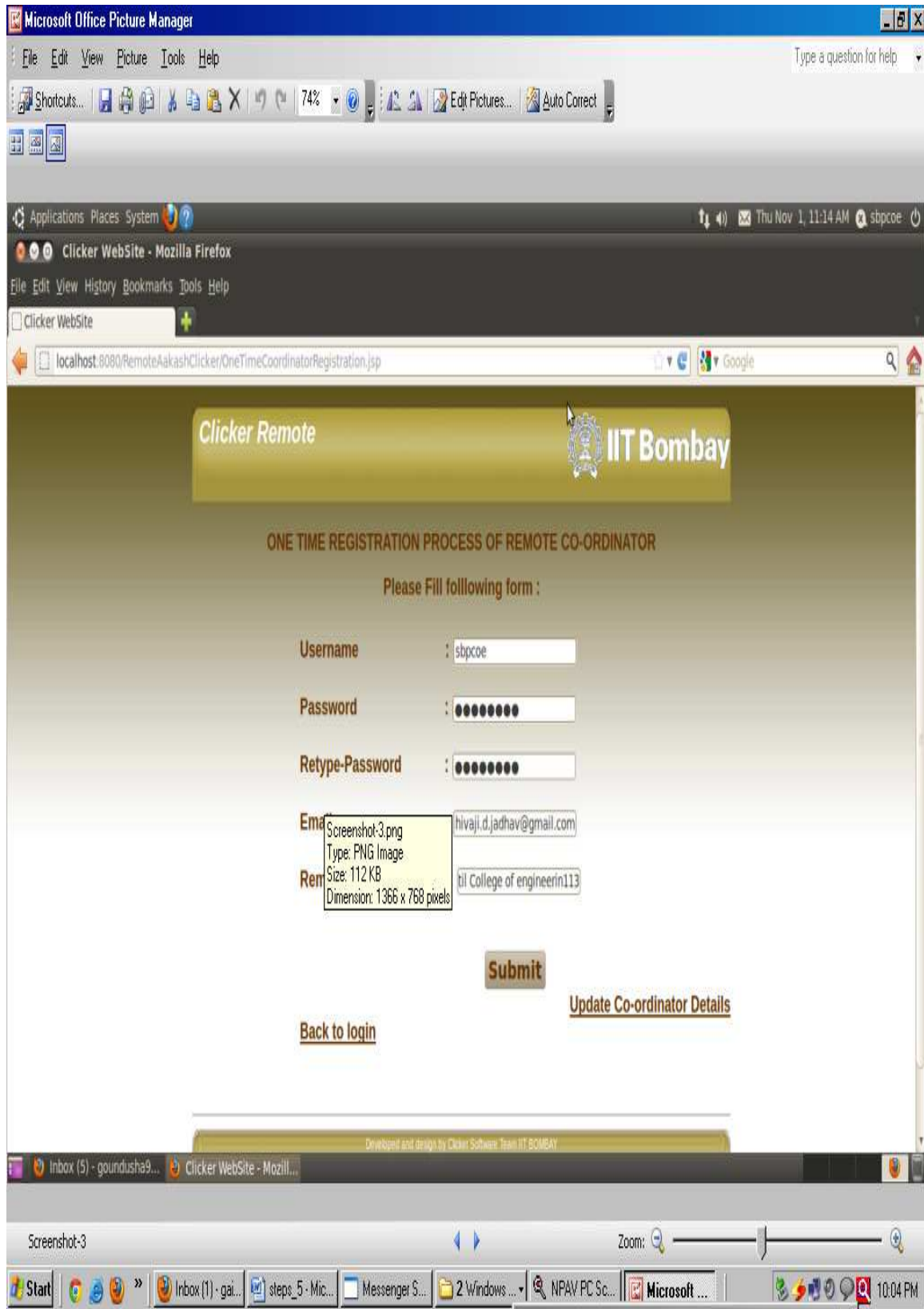


Fig 2: Co-coordinators Registration Window

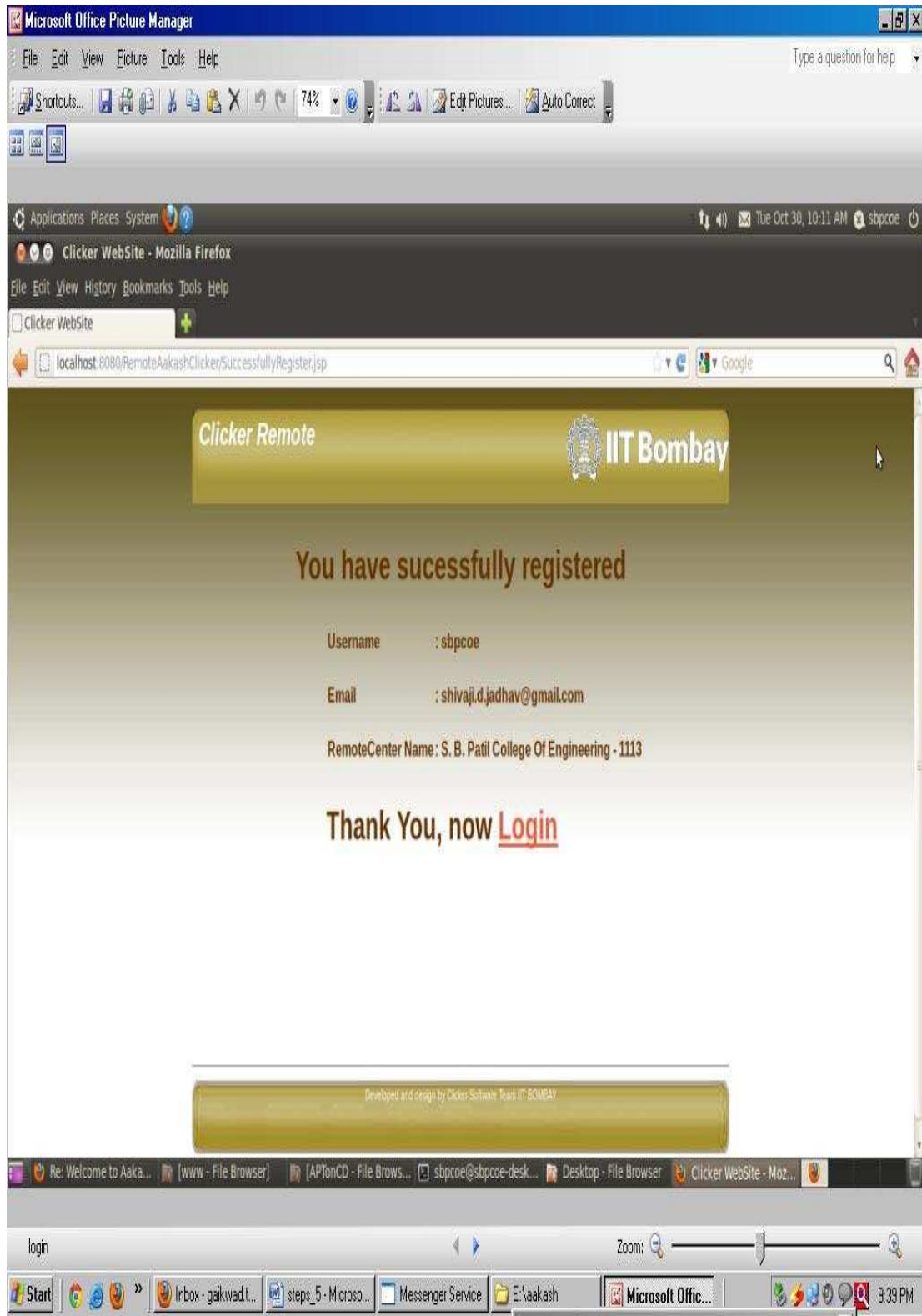


Fig 3: Login Confirmation Window

Login to Clicker software



Fig 4: Login Again

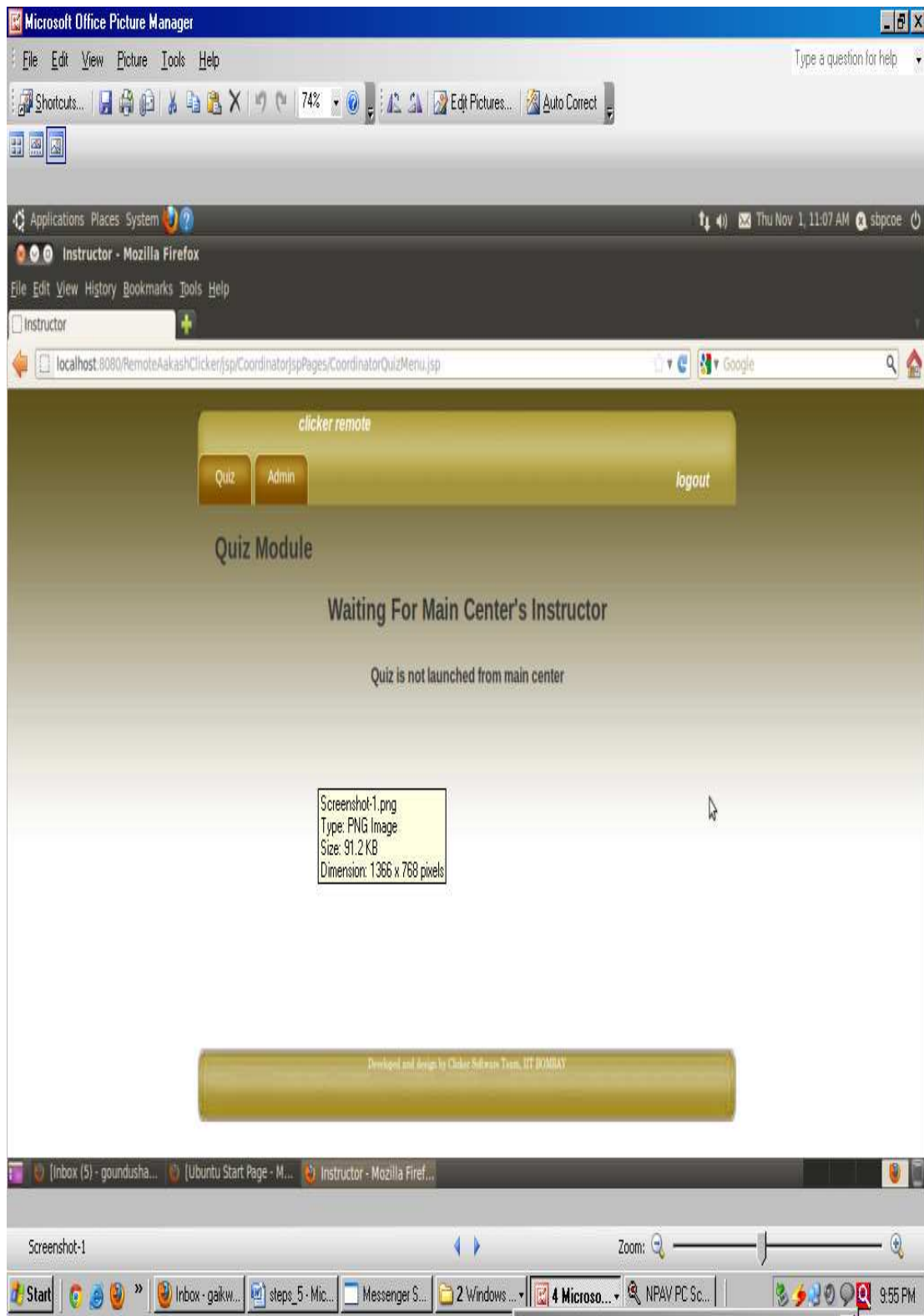


Fig 5: Window after Co-Ordinator Login