ଓଡ଼ିଶା ରାଜ୍ୟ ମୁକ୍ତ ବିଶ୍ୱବିଦ୍ୟାଳୟ, ସମ୍ବଲପୁର, ଓଡ଼ିଶା

Odisha State Open University, Sambalpur, Odisha

Established by an Act of Government of Odisha.

DIPLOMA IN CYBER SECURITY

(DCS)

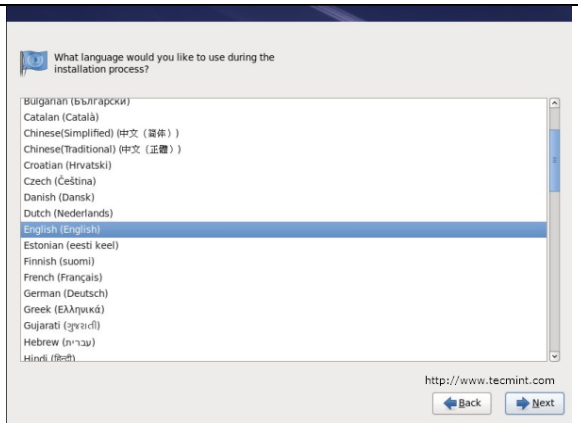
SESSION: 2016-2017

DCS01: OPERATING SYSTEMS BASICS

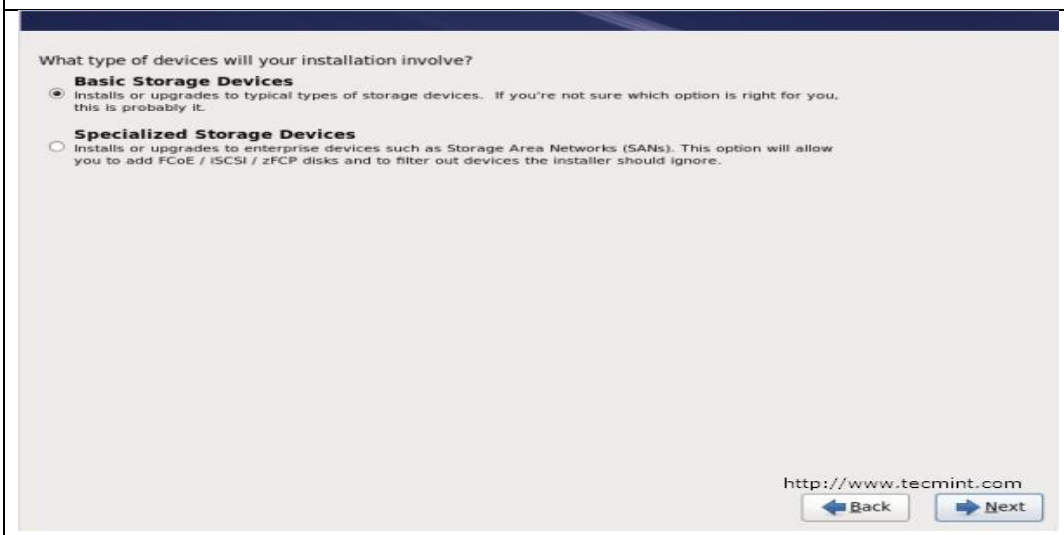
LINUX LAB MANUAL

Table of Contents

1. Red Hat Linux Installation

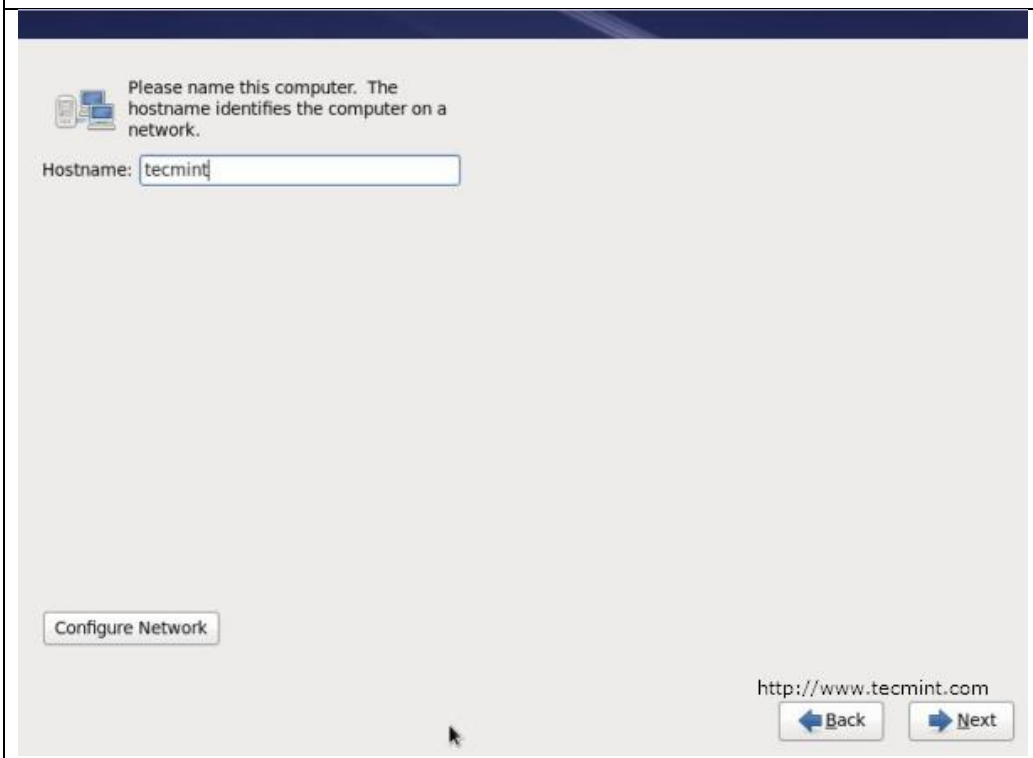
Step -1	Step-2
	
Place the Linux 6 DVD in the DVD drive	Select Language.
Step-3	Step-4
	
Select keyboard type	Choose skip media test below

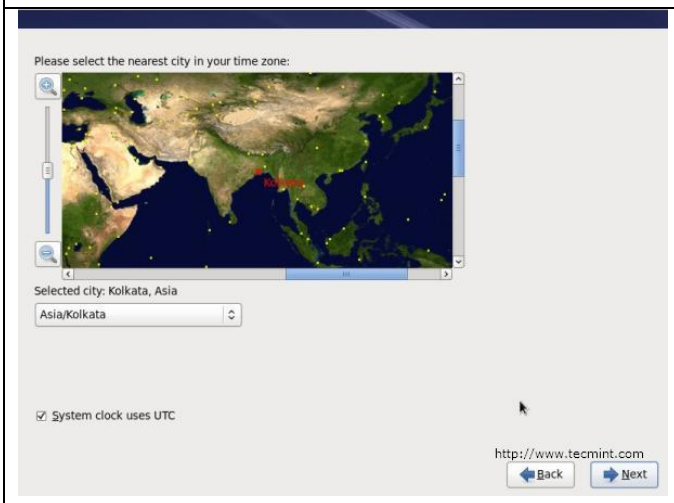
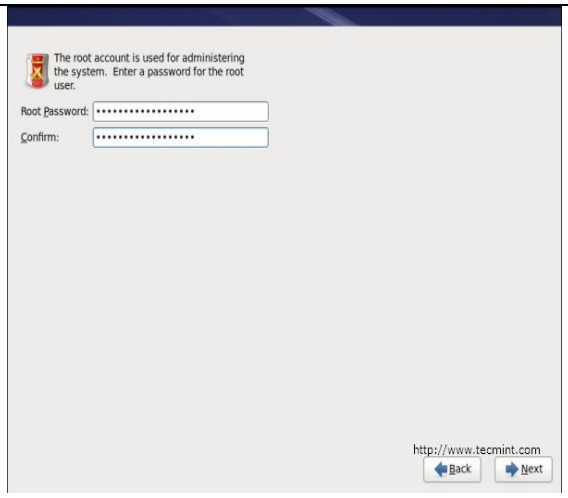
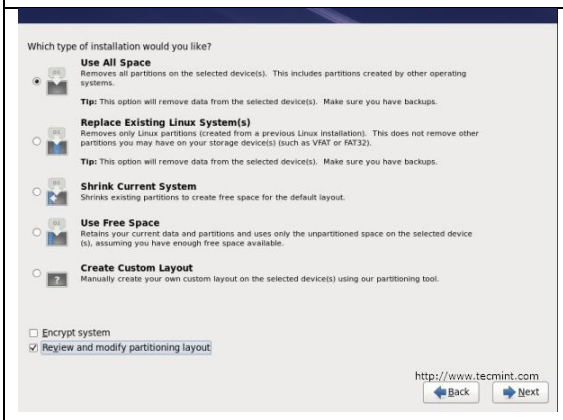
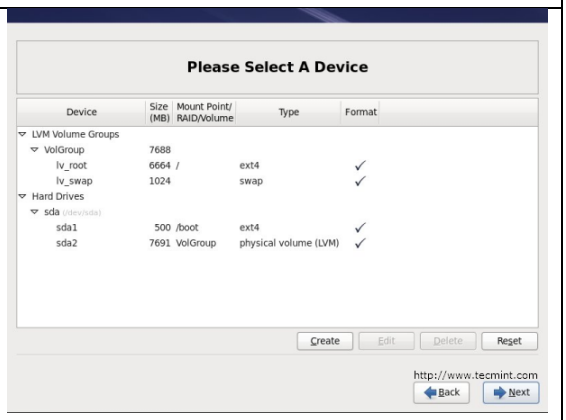
Step-5

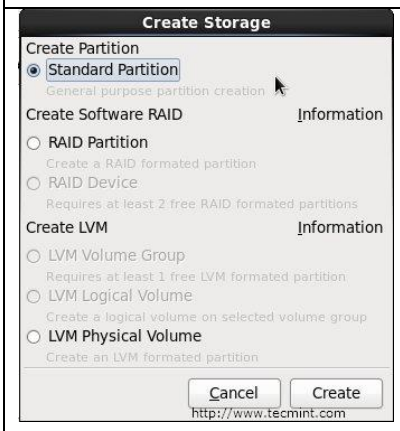
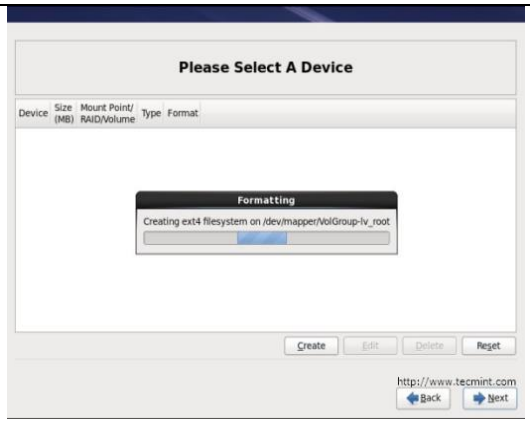
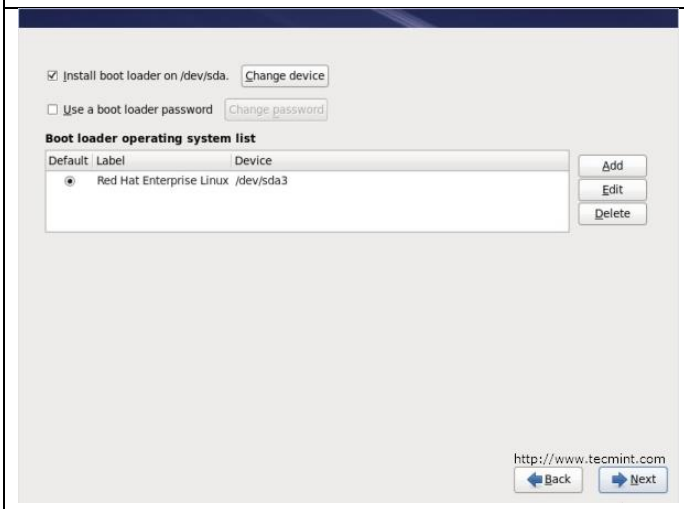
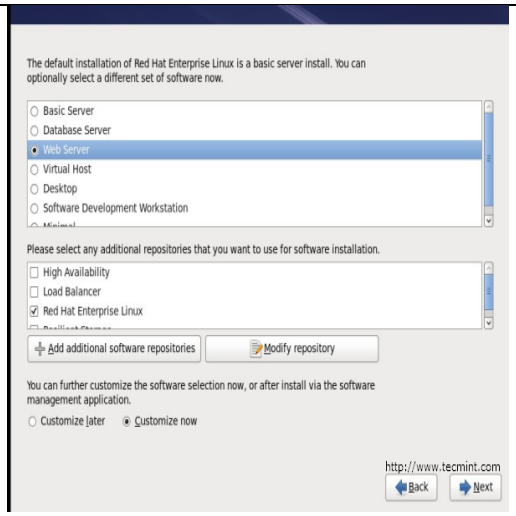


Select storage device

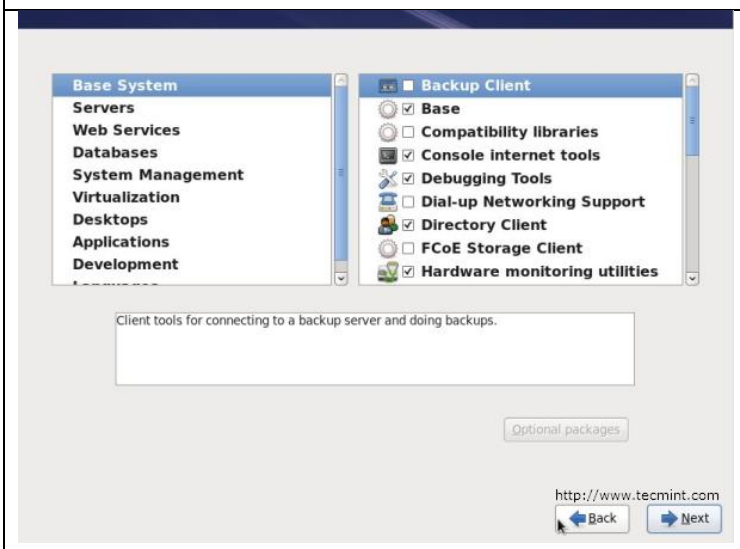
Step-6



Please enter the name of the computer	
Step-7	Step-8
	
Set the time zone and location	Enter root user password
Step-9	Step-10
	

Select the type of installation	Select the device
Step-11	Step-12
	
Click on the next button as shown above and select standard partition	Create partition and formatting file systems
tep-13	Step-14
	
Configuring boot loader options, also can give boot loader password for security reason	Select applications to install and select customize now

Step-15



copy packaged selection

Step-16 :- Installation

2. Linux Installation using Ubuntu

Install Ubuntu 16.04 LTS

1. Using a DVD?

It's easy to install Ubuntu from a DVD. Here's what you need to do:

Put the Ubuntu DVD into the DVD-drive

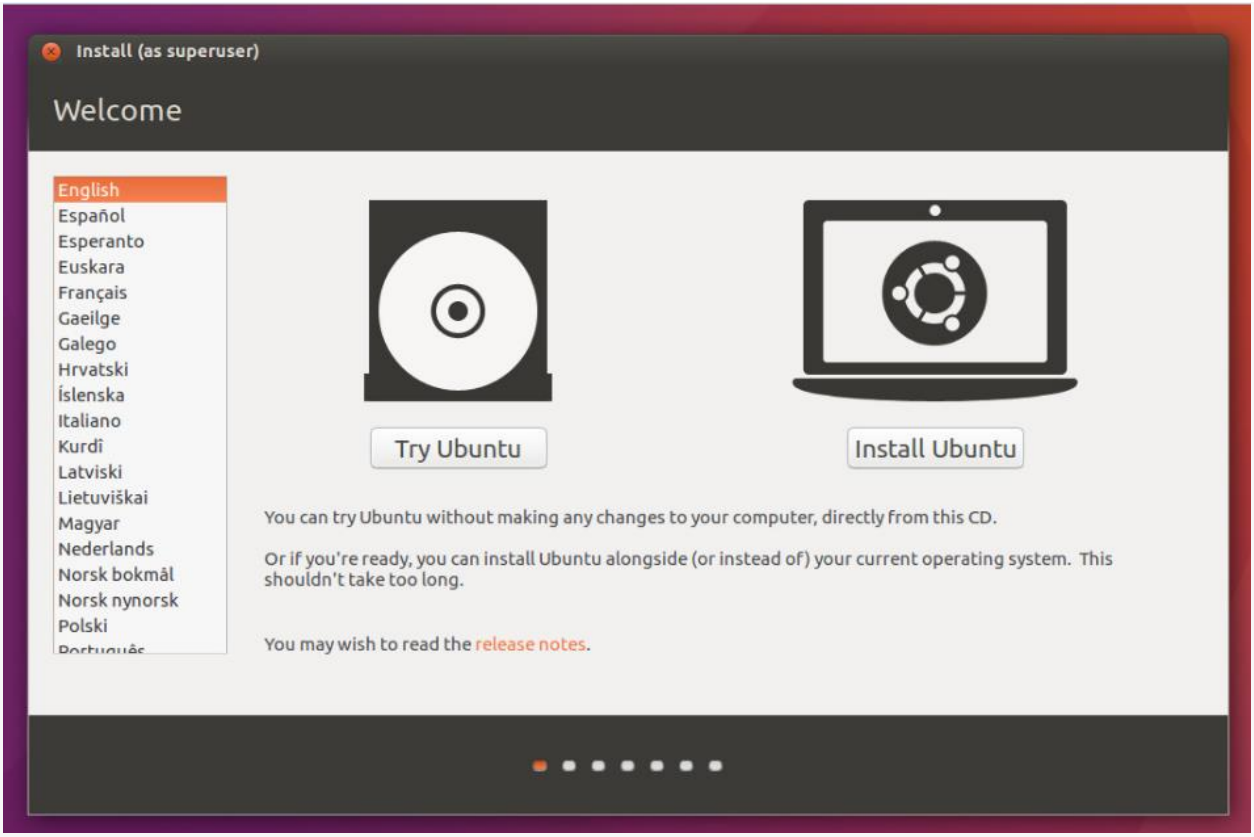
Restart your computer. You should see a welcome screen prompting you to choose your language and giving you the option to install Ubuntu or try it from the DVD.

If you don't get this menu, read the booting from the DVD guide for more information.

Using a USB drive?

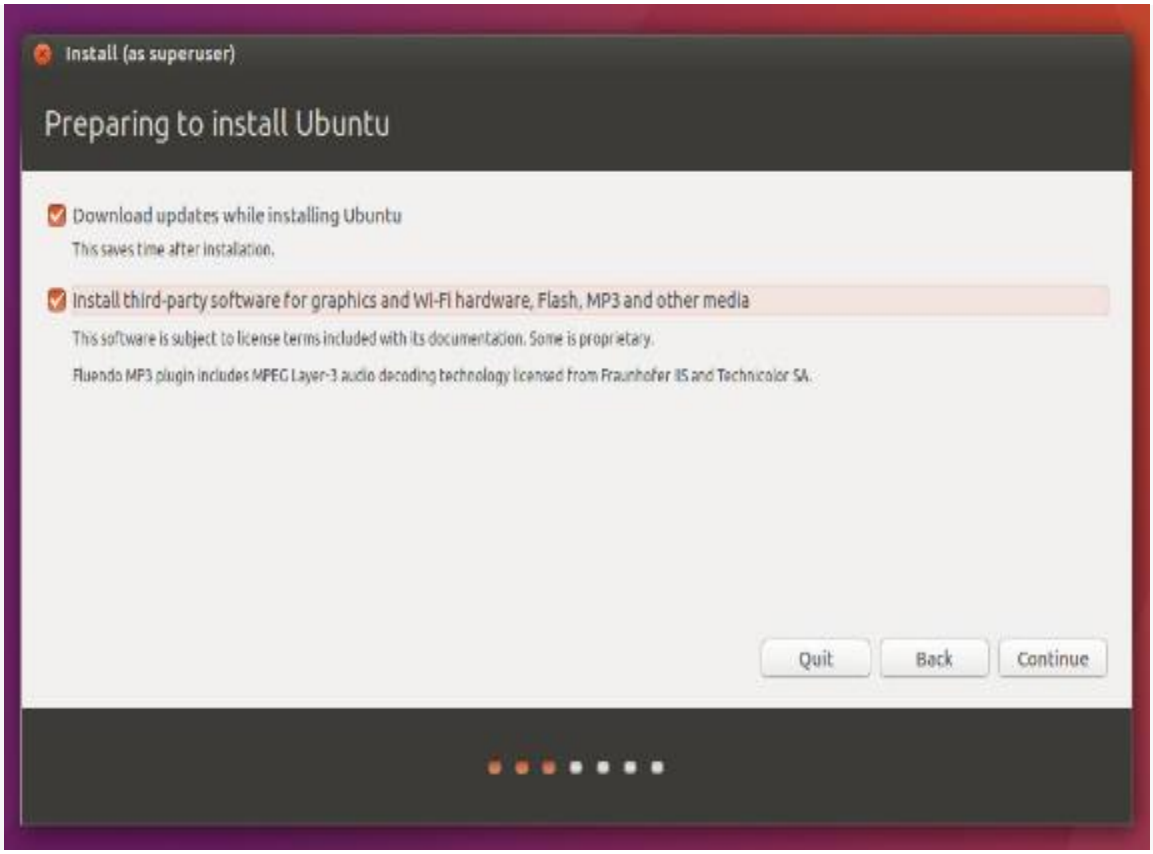
Most newer computers can boot from USB. You should see a welcome screen prompting you to choose your language and giving you the option to install Ubuntu or try it from the USB.

If your computer doesn't automatically do so, you might need to press the F12 key to bring up the boot menu, but be careful not to hold it down - that can cause an error message.



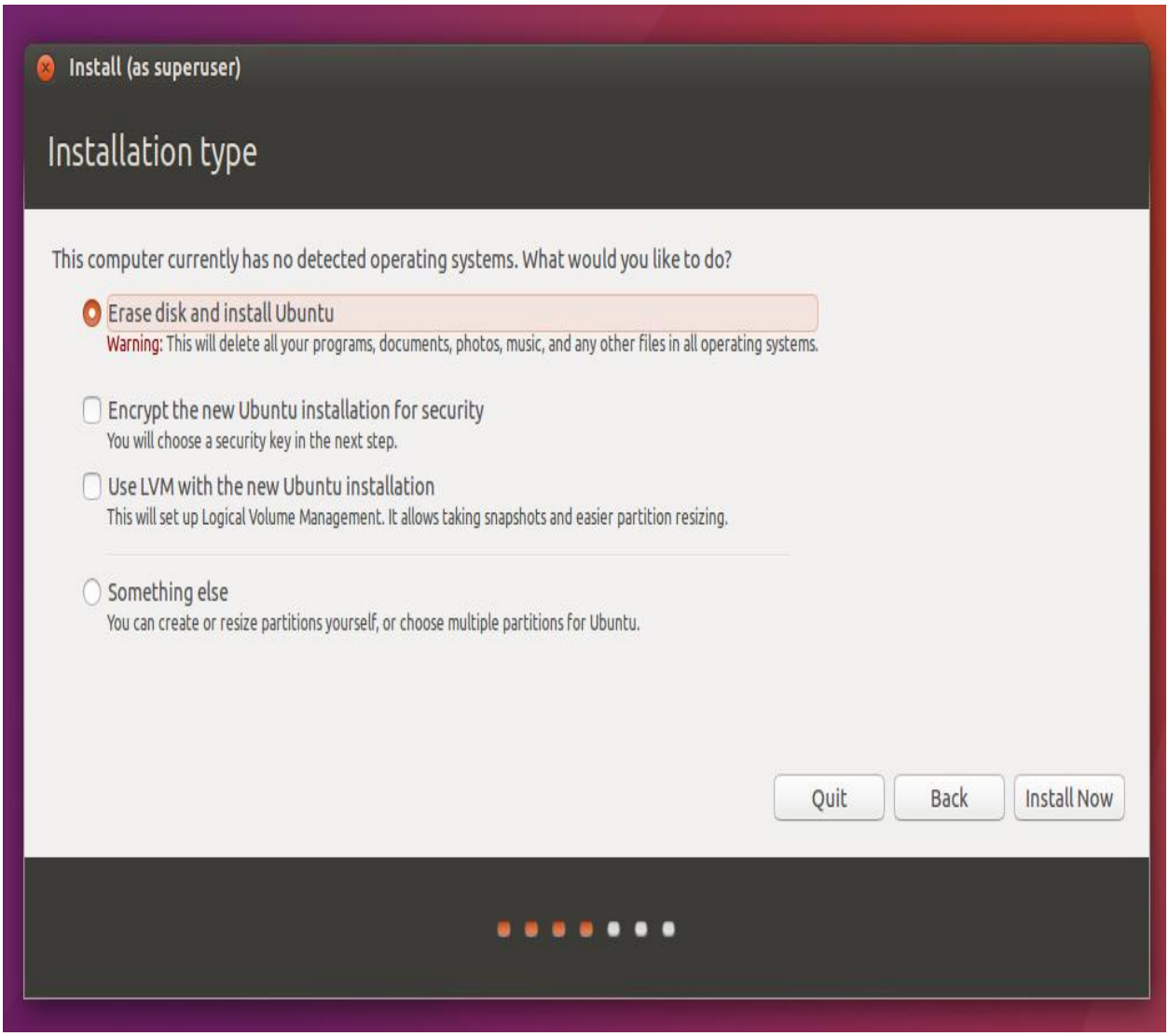
2. Prepare to install Ubuntu

- We recommend you plug your computer into a power source
- You should also make sure you have enough space on your computer to install Ubuntu
- We advise you to select Download updates while installing and Install this third-party software now
- You should also stay connected to the internet so you can get the latest updates while you install Ubuntu
- If you are not connected to the internet, you will be asked to select a wireless network, if available. We advise you to connect during the installation so we can ensure your machine is up to date.



3. Allocate Drive Space

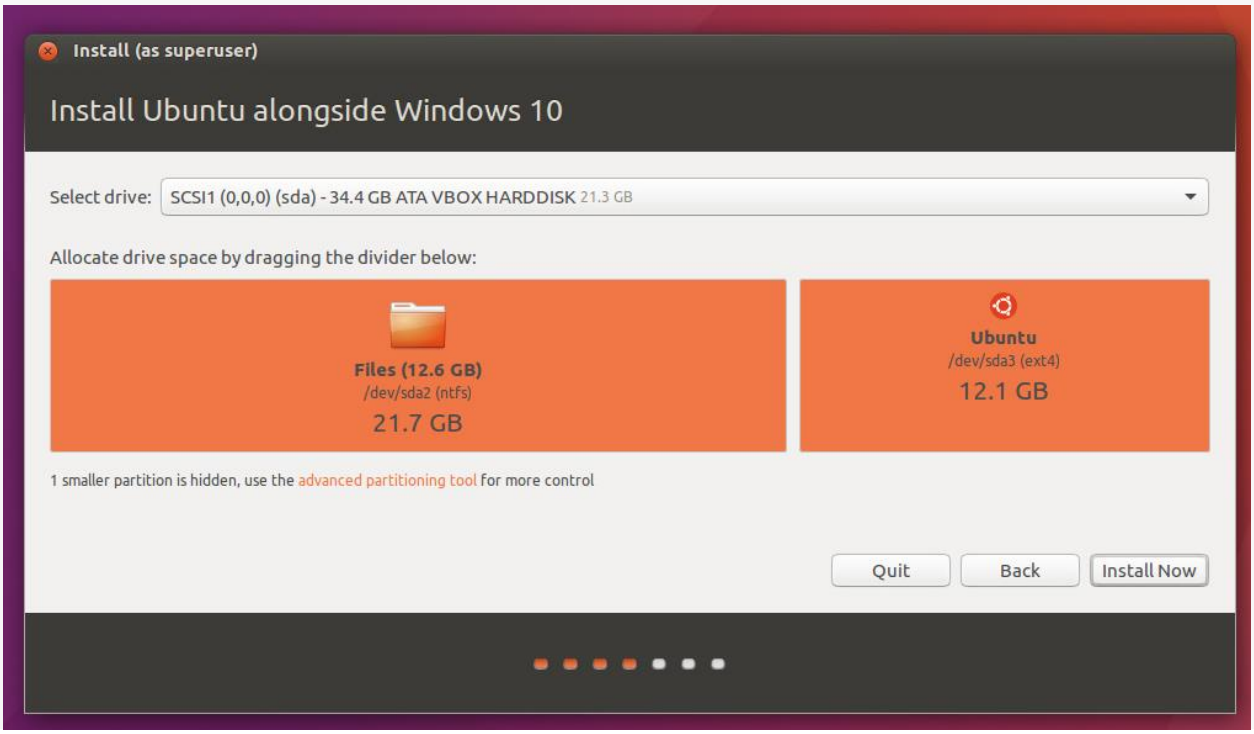
Use the checkboxes to choose whether you'd like to Install Ubuntu alongside another operating system, delete your existing operating system and replace it with Ubuntu, or — if you're an advanced user — choose the 'Something else'option as shown below.



4. Begin the installation

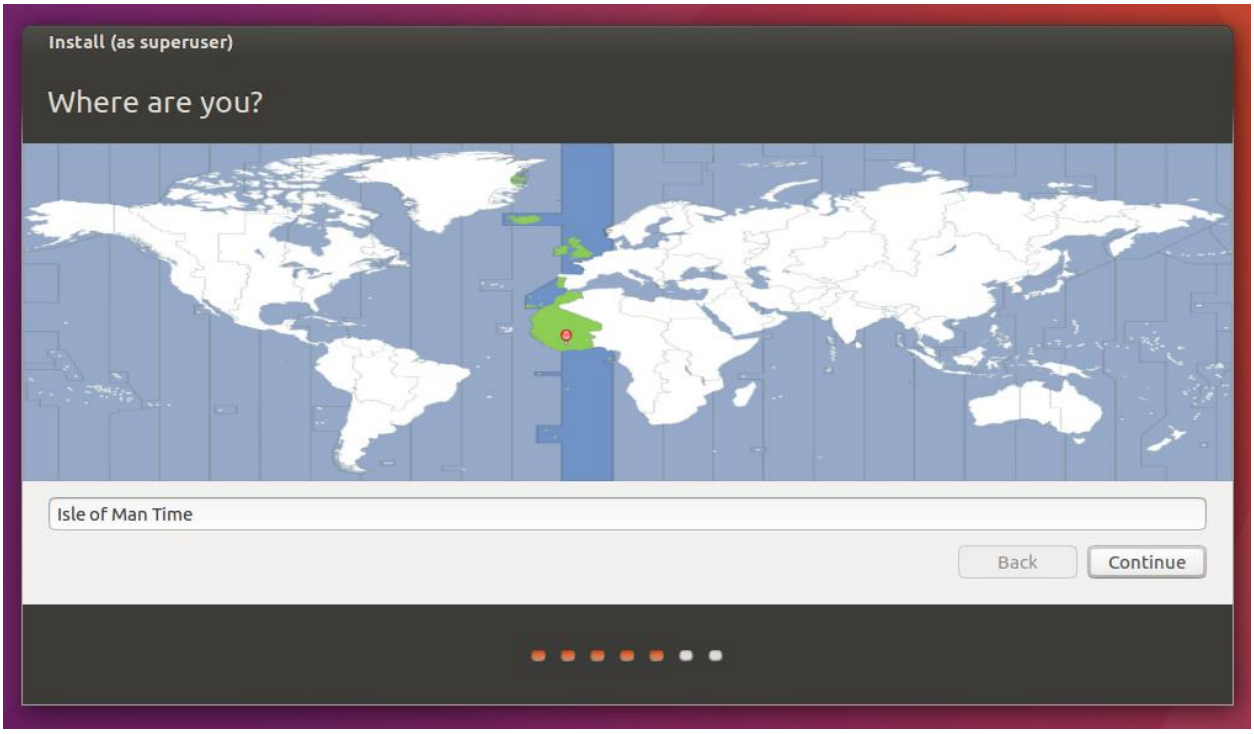
Depending on your previous selections, you can now verify that you have chosen the way in which you would like to install Ubuntu. The installation process will begin when you click the Install Now button.

Ubuntu needs about 4.5 GB to install, so add a few extra GB to allow for your files.



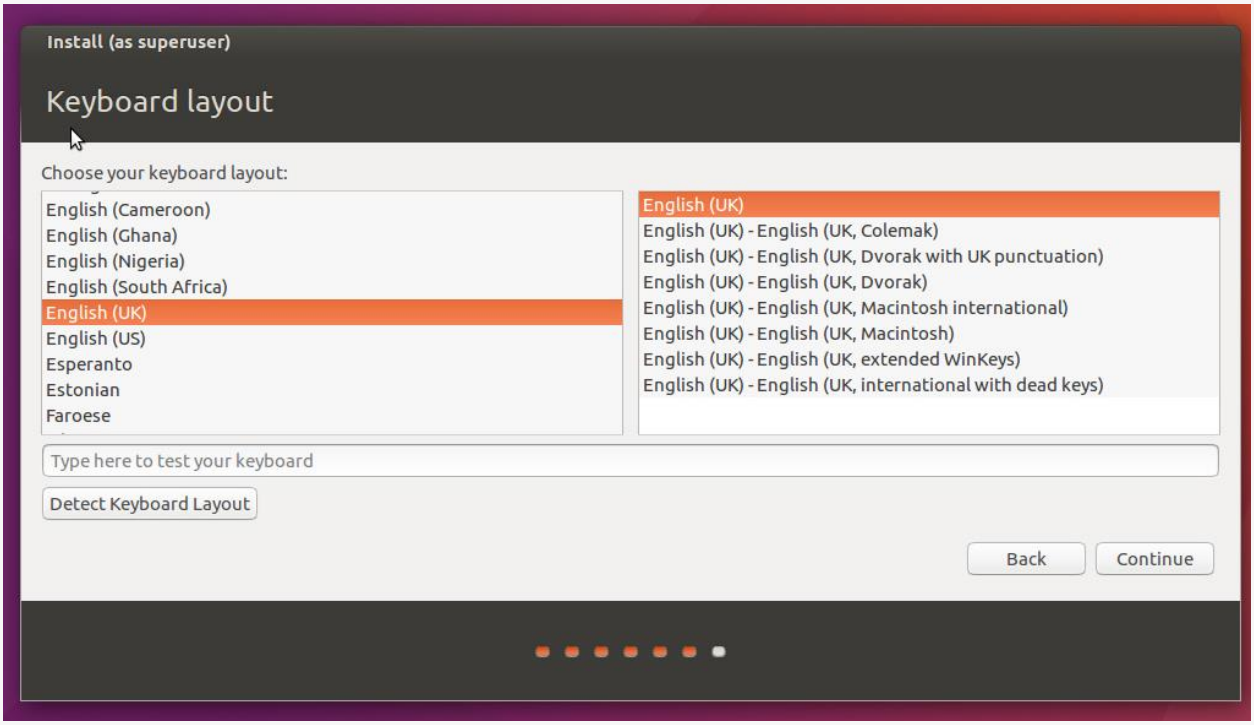
5.Select your location

If you are connected to the internet, this should be done automatically. Check your location is correct and click 'Forward' to proceed. If you're unsure of your time zone, type the name of the town you're in or click on the map and we'll help you find it.

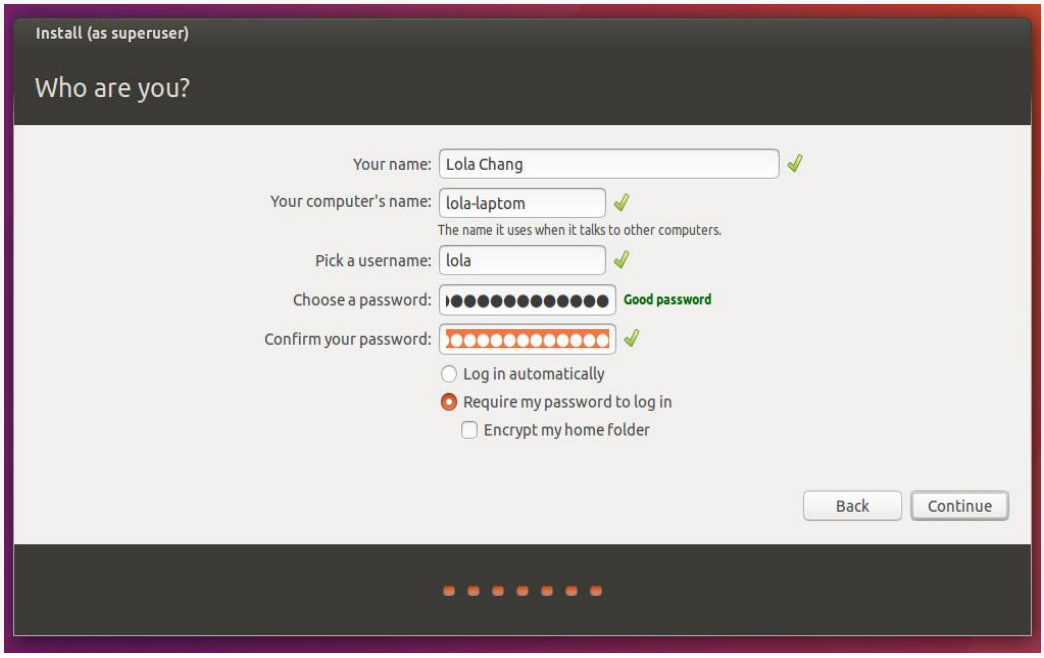


6. Select your preferred keyboard layout

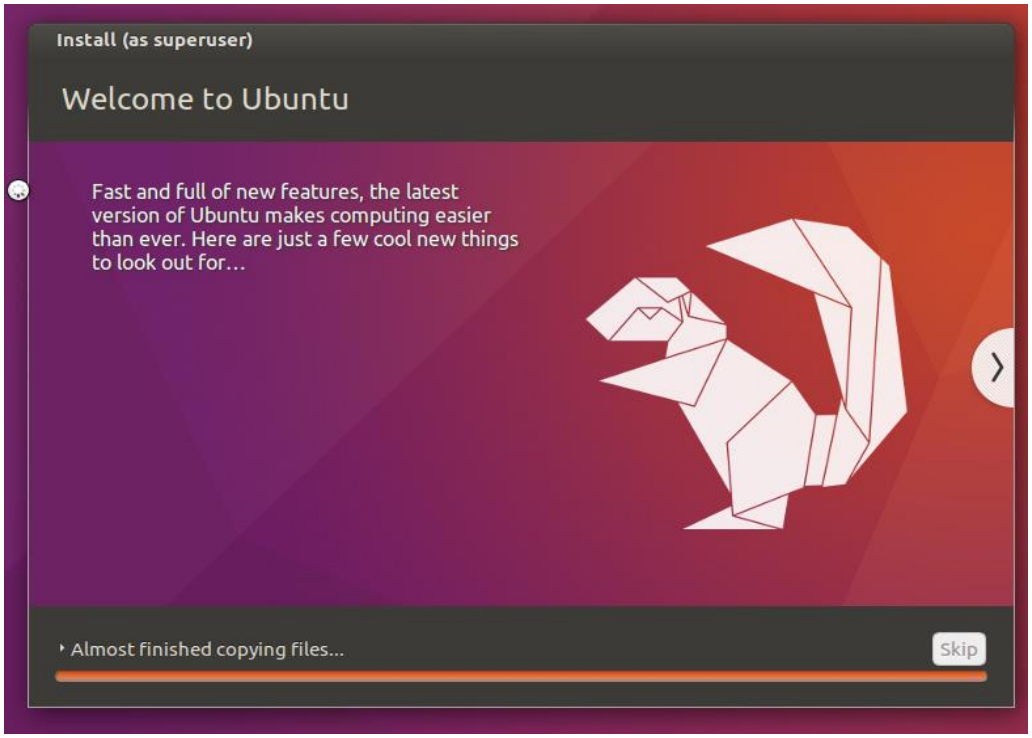
Click on the language option you need. If you're not sure, click the 'Detect Keyboard Layout' button for help.



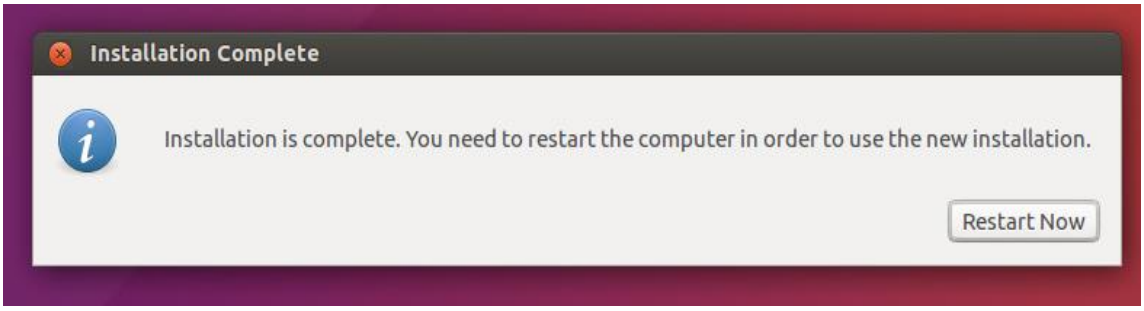
7. Enter your login and password details



8.Learn more about Ubuntu while the system installs…



9. Installation Complete



3. Linux Installation using Open Suse

This is just a brief description of openSUSE installation. For more thorough help see the official documentation.

Before Installation

Before starting there are a few things you should be aware of.

System Minimum Requirements

- CPU: AMD64 or Intel64 processor
- RAM: 1 GB physical RAM (2 GB recommended)
- Disk Space: 5,0 GB for a normal installation (more recommended)
- Sound and Graphics Card: Most modern cards are supported

Burning the ISOs to a DVD

When you burn the downloaded ISO files to a DVD it's important to remember to burn them as ISOs/images with your CD/DVD writer software, or the media won't be bootable.

BIOS Setup

If your computer won't boot from the DVD or USB media, check that the computer BIOS is configured to boot from CD/DVD or USB.

Dual Boot (openSUSE and MS Windows on the same computer)

Having openSUSE and MS Windows installed on the same computer is usually fairly simple if MS Windows was installed first. During installation openSUSE will detect MS Windows and the bootloader will display a menu on each startup letting you choose whether to boot openSUSE or MS Windows.

openSUSE needs to be installed on a separate partition/disk. It's recommended to free up space beforehand using a partitioning tool that you're familiar with. But you can also let the openSUSE installer resize your MS Windows partitions - it's strongly recommended to defragment the MS Windows partition before doing so.

Connect Network Cable and Turn on Peripherals

If you connect your network cable and turn on your printer and other peripherals before commencing the installation, there's a good chance of them being auto detected and configured.

The Installation Process

When you're ready, insert the DVD or USB stick and (re)start the computer.
This describes the installation of the 4.7 GB DVD ISO, as mentioned in the previous chapter there's also a live medium available that is not as well-tested, that installation is not described here, but it's quite similar.

Welcome

The first thing you'll see is this welcome screen.

Start Installation

Then you're presented with a menu.

Here you can select your desired language and a few other options, afterwards begin installation.

Language, Keyboard and Licence

The licence agreement is only to inform you of your rights. It doesn't require your acceptance, since it doesn't limit your use.

Check that language and keyboard layout are as desired.

Installation Options

Here you choose to add online repositories or include add-on products, usually will just click "Next". Online repositories can be added in the installed system later.

Partitioning

By default openSUSE will propose to create three new partitions / (root) for system files, /home/ for personal files of users and swap which is used as a supplement for RAM, similar to the page file in MS Windows.

Don't worry about all the subvolumes created, these are just technicalities of the Btrfs filesystem, and not "real" partitions, that normal users should need to worry about.

If you're performing a dual boot installation, pay extra attention, to make sure everything is as desired.

Note that Linux labels disks/partitions using the following scheme - *sda1* is first partition on the first disk, *sdb3* is the third

partition on the second disk, and so forth. Partitions that will be formatted are written in red text.

Clock and Time Zone

Set the timezone here.

If you have only GNU/Linux it's recommended to set the hardware clock to UTC, if you dual boot with MS Windows set it to local time.

Desktop Selection

Various different graphical user interfaces (desktop environments) exist for GNU/Linux. KDE is preselected and is preferred by about 70% of openSUSE users and is also the focus of this guide.

Under "Other" you can select LXDE, Xfce, minimal graphical environment (IceWM) and even a text based system which is useful for servers.

Create New User

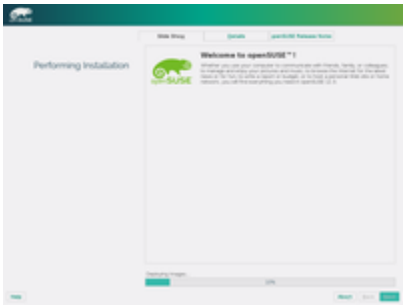
Now it's time to create your user. Note that by default the root user (administrator) password will be the same as the password for the normal user.

If you want the added security of a separate root password, consider unchecking that checkbox. You may also want to consider disabling autologin to prevent people from easily accessing your system and data.

Installation Settings

Double check that everything is as desired - this is the point of no return!

Actual Installation

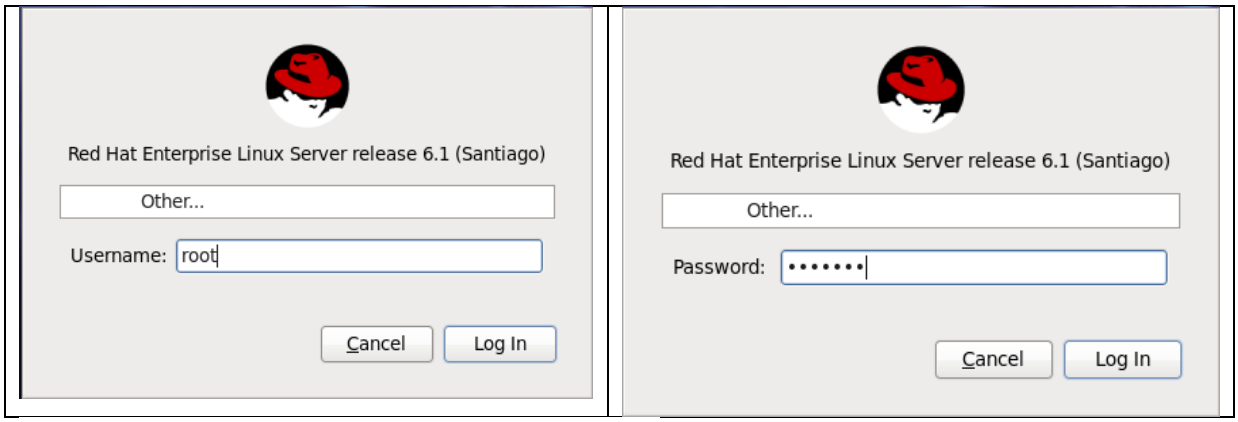


Now the actual installation is performed. When it's done the system will reboot and be ready to use.

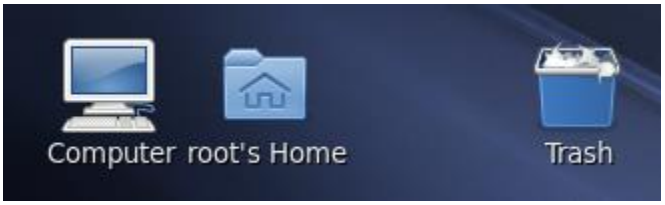
Have a lot of fun with openSUSE!

4. Working with Linux Graphical User Interface

<u>Step-1 </u>We enters the super user name and password as below and click login.



Step-2:- We come across 3 icons as shown below.



For the moment we take a note that

1. Roots Home :- All file and folders that we create we shall do it here.
2. Computer :- To browse the files and folders and create files and folders. We shall be storing files and folders in the roots home directory.
3. Trash :- Files and folders that we delete will be in the trash. These can be restored from trash.

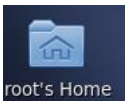
We shall be learning how to

1. Create files and delete them from root's Home directory
2. Creating folders and delete them root's home directory
3. Creating files in folders under root home directory.
4. Copying files from one folder to the other under root home directory.
5. Cut and paste files from one folder to the other under root home directory
6. Restore deleted files from the trash

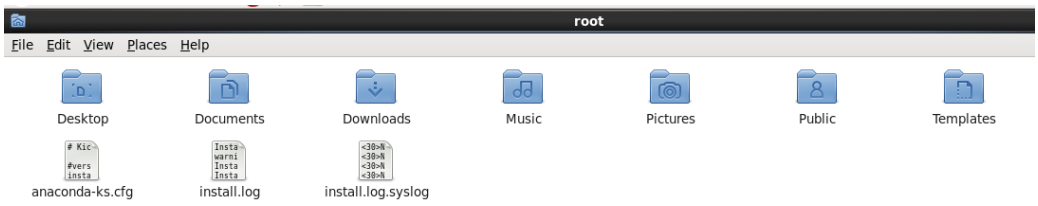
4.1 Creating a new file

Step-1

Double click on the root home directory



Step-2



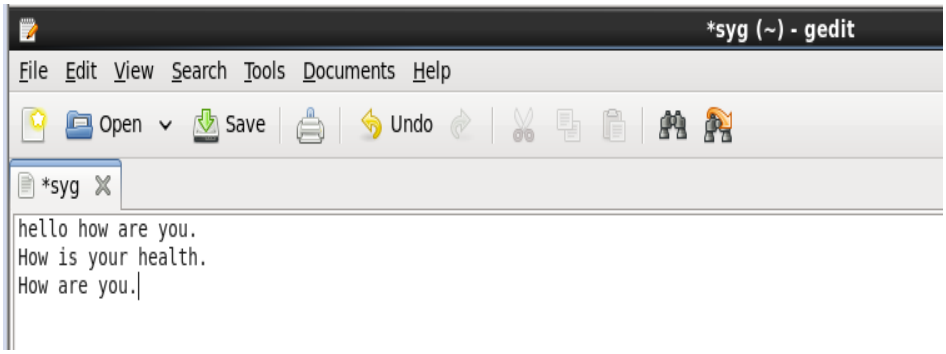
Step-3

Click on File -> Create Document -> Empty File

Step-4

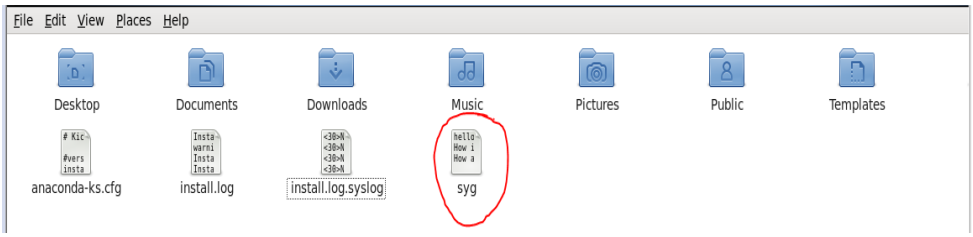
Step-5:- Give it a name as shown

Step-6 :- Double click and enter the contents of the file as shown below



Step-7 :- Click on the save button in green color as shown below.

Go to File ->Close . Go to File -> Quit.



4.2 Working with files in Root Home directory

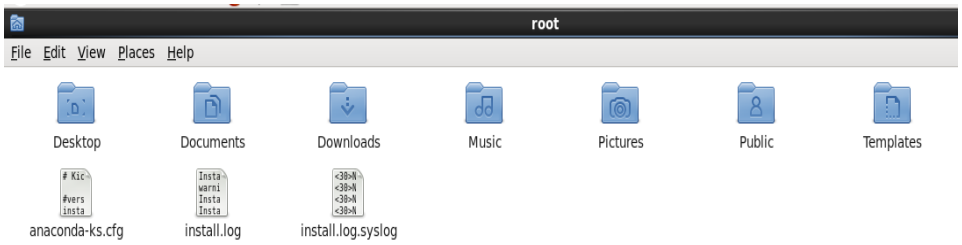
- Double click the file to open the file.
- Right click the file and
  - Click rename to rename the file.
  - Click cut to cut the file and paste it elsewhere.
  - Click move to trash to delete the file and move it to trash.
  - Click send to to send the file to external hard disk /dvd or pen drive.
  - Click properties
    - to find the size of the file.
    - And set permissions to read only to make the File read only
    - Open with to open with another application
- Click file ->create folder to create folder.

4.3 Working with folders in Root Home directory

Step-1

Double click on the root home directory

Step-2



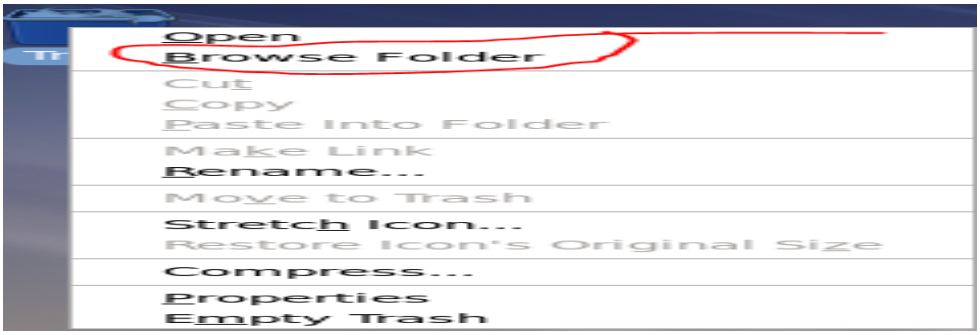
Step-3

- Click on File -> Create Folder to create a folder
- Double click the folder to open the folder.
- Right click the folder and
  - Click rename to rename the folder.
  - Click cut to cut the folder and paste it elsewhere.
  - Click move to trash to delete the folder and move it to trash.
  - Click send to to send the folder to external hard disk /dvd or pen drive.
  - Click properties
    - To find the size of the folder.
    - Set permissions to read only to make the Folder read only
    - Open with to open with another application
- Click file ->create folder to create folder.

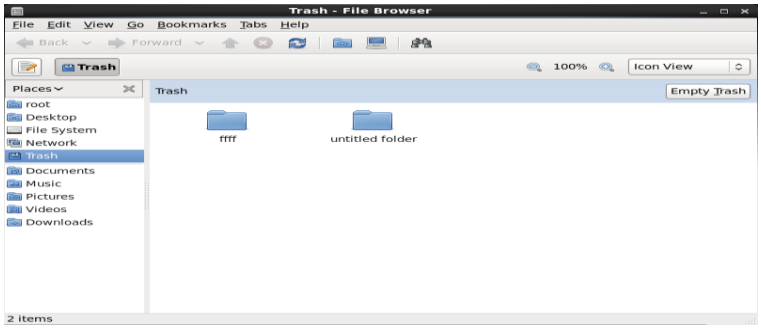
4.4 Working with trash

To restore the files and folders from the trash double click trash and click restore to restore deleted files.

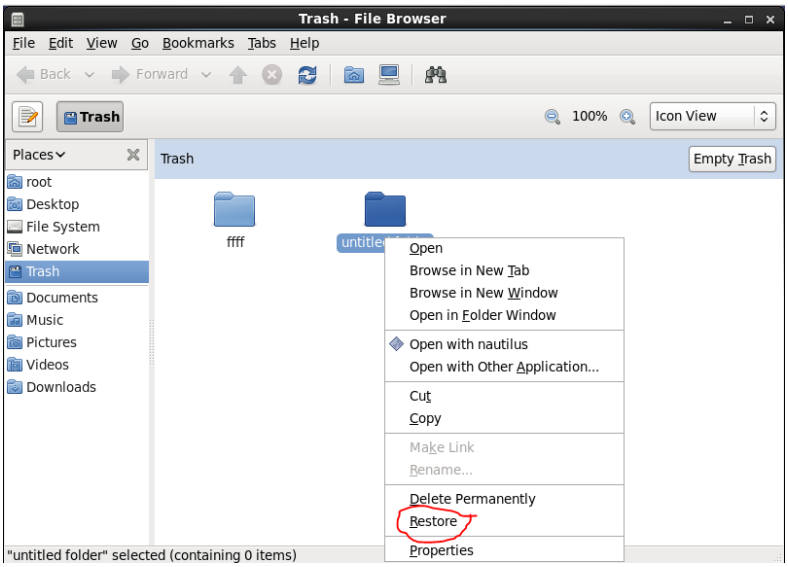
Step-1 :- Right click on the Trash



Step-2

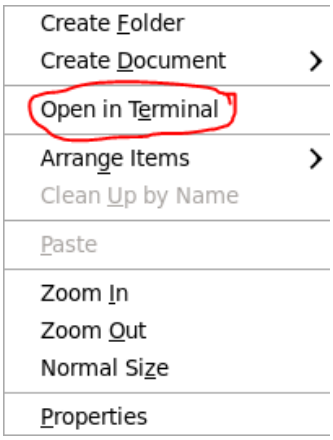


Step-3 : - Click on the restore button to restore the folder from where it was deleted. If delete permanently is clicked then the file is deleted forever.

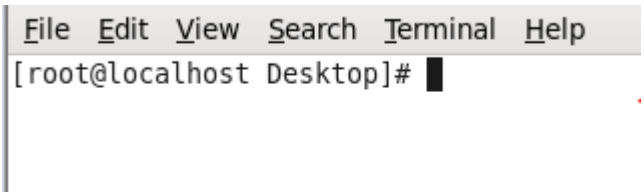


5. Working with terminal mode

To get into the terminal mode right click being in the graphical user interface



Click on open in terminal mode to open Linux in terminal mode as shown below.



6. Basic Linux commands used in terminal Mode

Basic Linux commands.

Ls	It will display the list contents in a folder
clear	It will clear the screen
mkdir	It creates a new directory
cat >	(new file name) It will create a new file , for saving the file you have to press ctrl + d
cat	(existing file name)It will display the contents of a file
Rm	(file name) It will delete a file
rm –rf	(dir name). It will delete a directory
mv	(old file name) (new file name).It will rename a file (old directory name) (new directory name).It will rename a directory
mv	(source file name)(target directory name).It will move the file from one location to the other.
touch	(new file name) It will create an empty file
date	It will display the current system date
man	(command) it will display the mnuals and syntax of the command.
halt	To shut down the Linux environment

6.1 Steps to create a file in root home folder using VIM

1. Steps to create a file in root home folder.

Step-1:

```
File  Edit  View  Search  Terminal  Help
[root@localhost Desktop]#
```

#	means super user
$	means normal user

Step-2:

Click cd /

This takes us to the root directory

The root directory is the top level directory .It is the parent directory of all the directories.

Step-3

Click cd ~ or cd /root go to root home directory

```
File  Edit  View  Search  Terminal  Help
[root@localhost /]# cd ~
[root@localhost ~]#
```

Step-4

To create a file type the following command

vim filename as shown below

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# vim shanu
```

Step-5

Step-6 :- Press the insert button

Step-7

Now it is time to save the file

Press esc key followed by :wq which means write and quit

Press the enter key.Now the file is written.

6.1.1 VIM commands

Cursor management in VIM	
H	Left arrow
L	Right arrow
K	Up arrow
J	Down arrow
Escape mode commands	
Esc +:w	To save changes
Esc +:q	To quit
Esc +:wq	To save and quit
Esc +:wq!	To save and quit forcefully
Esc +:w!	To save forcefully
Esc +:x	To save and quit

Step-8 :- To check whether the file exists or not press the ls command which is list files and folders. Below those in blue colour are folders. The one in red is a compressed file . those in black are files.

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# vim shanu
[root@localhost ~]# ls
anaconda-ks.cfg  Downloads          kjui   Pictures  syg      syg.tar.gz
Desktop          install.log        mmm    Public    syg~     Templates
Documents        install.log.syslog Music  shanu     syg (2)  Videos
[root@localhost ~]#
```

6.2 Checking the contents of a file

Step-9: to check the file contents of shanu type cat shanu

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# cat shanu
Ram is a good boy.He is very good in giving lectures.
and getting good marks.

[root@localhost ~]#
```

6.3 Create a new file using cat command

The cat command can also be used to create a new file

Step-1

The syntax is $cat > new filename

```
[root@localhost ~]# cat > sm
hello how are you and how is
your health.Its along time
we havent talked to each other.
```

To save the contents after using the cat command press ctrl +d

Step-2

To save the contents after using the cat command press ctrl +d

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# cat > sm
hello how are you and how is
your health.Its along time
we havent talked to each other.
[root@localhost ~]#
```

6.4 Delete a file
rm command

The rm command is used to remove or delete a file

Syntax rm filename

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# rm mmm
rm: remove regular file `mmm'? y
[root@localhost ~]#
```

6.5 Creating a folder /Directory
mkdir command

The mkdir command is used to create a directory.

<u>Syntax</u>

mkdir fish

```
[root@localhost ~]# mkdir fish
[root@localhost ~]# ls
anaconda-ks.cfg  fish                Music     shanu  syg (2)
Desktop          install.log         Pictures  sm     syg.tar.gz
Documents        install.log.syslog  Public    syg    Templates
Downloads        kjui                ram       syg~   Videos
[root@localhost ~]#
```

6.6 Delete a folder /directory

rm –rf command

The rm –rf command is used to delete a folder

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# rm -rf fish
[root@localhost ~]#
```

6.7 Rename a folder /directory

```
[root@localhost ~]# rm -rf fish
[root@localhost ~]# ls
anaconda-ks.cfg  Downloads           kjui      Public  sm    syg (2)     Videos
Desktop          install.log         Music     ram     syg   syg.tar.gz
Documents        install.log.syslog  Pictures  shanu   syg~  Templates
[root@localhost ~]#
```

mv command to rename a file.

The mv command is used to rename a file

Syntax mv old filename new filename

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# mv ram shyam
[root@localhost ~]# ls
anaconda-ks.cfg  Documents  install.log        kjui   Pictures  shanu  sm   syg~     syg.tar.gz  Videos
Desktop          Downloads  install.log.syslog Music  Public    shyam  syg  syg (2)  Templates
[root@localhost ~]#
```

6.8 Move a file to a folder /directory

mv command to move a file to a directory

```
[root@localhost ~]# cd ~
[root@localhost ~]# ls
anaconda-ks.cfg  Downloads           kjui      Public  sm    syg (2)     Videos
Desktop          install.log         Music     shanu   syg   syg.tar.gz
Documents        install.log.syslog  Pictures  shyam   syg~  Templates
[root@localhost ~]# mkdir fish
[root@localhost ~]# mv shyam fish
[root@localhost ~]# cd fish
[root@localhost fish]# ls
shyam
[root@localhost fish]#
```

6.9 Copy a file to a folder /directory
cp command to copy a file to a directory

```
File  Edit  View  Search  Terminal  Help
[root@localhost Desktop]# cd ..
[root@localhost ~]# cd ~
[root@localhost ~]# ls
anaconda-ks.cfg  fish                Music     sm        syg.tar.gz
Desktop          install.log         Pictures  syg       Templates
Documents        install.log.syslog  Public    syg~      Videos
Downloads        kjui                shanu     syg (2)
[root@localhost ~]# touch hh
[root@localhost ~]# cp hh fish
[root@localhost ~]# cd fish
[root@localhost fish]# ls
hh  mmmm  myself  shyam
[root@localhost fish]#
```

Above a file is copied to a folder/directory.

6.10 Copy a folder to a folder /directory
cp –r folder name ~/foldername

~ stands for root home folder

```
File  Edit  View  Search  Terminal  Help
[root@localhost ~]# ls
anaconda-ks.cfg  fish                kjui      rr     syg~        Videos
Desktop          hh                  Music     shanu  syg (2)
Documents        install.log         Pictures  sm     syg.tar.gz
Downloads        install.log.syslog  Public    syg    Templates
[root@localhost ~]# cp -r  rr  ~/fish
[root@localhost ~]# cd fish
[root@localhost fish]# ls
hh  mmmm  myself  rr  shyam
[root@localhost fish]#
```

6.11 Hide a file or a folder /directory

To hide a File rename the file to “.”+file name

To hide a Folder rename the Folder to “.” +Folder name

```
[root@localhost fish]# mv hh .hh
[root@localhost fish]# ls
mmmm  myself  rr  shyam
[root@localhost fish]#
```

Above the file hh is hidden

6.12 View hidden files or folders

```
[root@localhost fish]# mv hh .hh
[root@localhost fish]# ls -a
.  ..  .hh  mmmm  myself  rr  shyam
[root@localhost fish]#
```

Above shows the hidden file .hh

```
[root@localhost ~]# mv fish .fish
[root@localhost ~]# ls
anaconda-ks.cfg  hh                  Music     shanu  syg (2)
Desktop          install.log         Pictures  sm     syg.tar.gz
Documents        install.log.syslog  Public    syg    Templates
Downloads        kjui                rr        syg~   Videos
[root@localhost ~]# ls -a
.                Downloads        .ICEauthority        shanu
..               .esd_auth        install.log          sm
anaconda-ks.cfg  .fish            install.log.syslog   .spice-vdagent
.bash_history    .gconf           kjui                 .ssh
.bash_logout     .gconfd          .local               syg
.bash_profile    .gnome2          Music                syg~
.bashrc          .gnome2_private  .nautilus            syg (2)
.cache           .gnote           Pictures             syg.tar.gz
.config          .gnupg           Public               .tcshrc
.cshrc           .gstreamer-0.10  .pulse               Templates
.dbus            .gtk-bookmarks   .pulse-cookie        .thumbnails
Desktop          .gvfs            .recently-used.xbel  Videos
Documents        hh               rr                   .viminfo
[root@localhost ~]#
```

Above example shows the hidden folder .fish

6.13 Unhide hidden files or folders

To unhide the hidden file/folder rename the .file/.folder name to filename/foldername

```
[root@localhost ~]# mv .fish fish
[root@localhost ~]# ls
anaconda-ks.cfg  fish                 kjui      rr      syg~        Videos
Desktop          hh                   Music     shanu   syg (2)
Documents        install.log          Pictures  sm      syg.tar.gz
Downloads        install.log.syslog   Public    syg     Templates
[root@localhost ~]#
```

6.14 Creating blank files
touch command

The $touch command is used create a blank file.

Syntax touch filename

```
[root@localhost fish]# ls
shyam
[root@localhost fish]# touch myself
[root@localhost fish]# ls
myself  shyam
[root@localhost fish]#
```

6.15 Finding the current date

date command is used to find todays date

```
File  Edit  View  Search  Terminal  Help
[root@localhost fish]# date
Sun Jun 26 23:49:26 PDT 2016
[root@localhost fish]#
```

6.16 man command

$man command name

$man command is used to find the syntax of the command.

Syntax :- man ls

<u>Step-1</u>

man ls

Step-2

The output is as shown below

NAME

ls - list directory contents

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILEs (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort.

Mandatory arguments to long options are mandatory for short options too.

-a, --all

do not ignore entries starting with .

-A, --almost-all

do not list implied . and ..

--author

with -l, print the author of each file

-b, --escape

print octal escapes for nongraphic characters

--block-size=SIZE

use SIZE-byte blocks. See SIZE format below

-B, --ignore-backups

do not list implied entries ending with ~

-c with -lt: sort by, and show, ctime (time of last modification of file status information) with -l: show ctime and sort by name

otherwise: sort by ctime

-C list entries by columns

--color[=WHEN]

colorize the output. WHEN defaults to ‘always’ or can be ‘never’ or ‘auto’. More info below

:

[root@localhost Desktop]#

7. Creating a file using Nano

Nano is a small editor for creating files.

1. To create a new file or edit an existing file :- *nano filename*
   Note: you won't be able to save unless you have write permissions for that file.

2. To save the file
   F3 will let you save without exiting. Otherwise, Ctrl + X will prompt you if you've made changes. Press Y when it asks, and Enter to confirm the filename.
3. To quit the editor without saving the changes?
   Ctrl + X, then N when it asks if you want to save.

4. To navigate on the Nano screen use arrow keys, Page Up / Page Down and Home / End

8. Working with the su command

The su command helps to switch from one user to the other. Below using the su Sandy we login as Sandy

```
shan@localhost:~$ su Sandy
Password:
Sandy@localhost:/home/shan$exit
logout
shan@localhost:~$
```

To come out of the user type exit command as shown above.

When used with a hyphen (su -) it can be used to start a login shell. In this mode users can assume the user environment of the target user:

```
Shan@localhost:~$ su - Sandy
Password:
Sandy@localhost:~$
```

SU - change user ID or become superuser

9. Working with sudo

Used to do all the jobs of a super user being a normal user for 15 minutes such as package installation.

The command to run the sudo command is sudo apt –get install wine

Let me describe what we have written here

- Sudo :- this give the access to the root user access for 15 minutes
- apt –get install :- this command is used to install a software
- wine :- this is the name of the software that we want to install
- sudo su :- This command allows the normal user to be a super user.

10. User and group management

Listing the users :- To list the users the command is # cat /etc/passwd

Creating a new user :- # adduser username

Creating a password to the username created :- #passwd username

This command would ask the user to enter the new password as shown below
#new password
And confirm password as shown below
#confirm password

Changing the password of a user

#passwd username

```
[root@localhost Desktop]# passwd gopal
Changing password for user gopal.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost Desktop]#
```

Deleting A User

#userdel username

```
[root@localhost Desktop]# userdel ram
```

#userdel-r username

Locking A User

usermod –l username

Unlocking A User

usermod –u username

Rename A User

usermod –l newusername oldusername

Creating a group

#groupadd groupname

Example

#groupadd admin

Adding A Single User To A Group

#usermod –G groupname username

Removing A Single User To A Group

#gpasswd –a username group

Adding multiple users to a group

#gpasswd –M user1,user2,user3 groupname

Listing all users in a group

#grep groupname /etc/group

Removing Users From A Group

#gpasswd –d username1,username2,groupname

Renaming A Group

#groupmod –n newgroupname oldgroupname

Make a user as an administrator

#gpasswd – A username groupname

List which group the user belongs

groups username

Delete A Group

groupdel groupname

11. Working with Permissions

The permission is applied at 3 levels
1) Owner/user level
2) Group level
3) Other users

Reading -4
Writing – 2
Execute- 1
No permission – 0

Since we are working with a single user

Syntax :- chmod ugo filename

1) chmod 400 filename makes the file read only to the owner.

2) Making the file read and write only for the owner as

chmod 600 filename as 4 +2 =6

3) Making the file read, write and execute to the owner

chmod 700 filename as 4+2+1 =7

<u>Shut down the Linux</u>

To shut down the Linux system use the command halt

<u>Printing in Linux</u>

The printing command in Linux is

```
# cat thesis.txt > /dev/lp
```

12. Installing Software with Rpm

RPM stands for Red Hat Package Manager

1. RPM is free and released under GPL (General Public License).
2. RPM keeps the information of all the installed packages under /var/lib/rpm database.
3. RPM is the only way to install packages under Linux systems, if you've installed packages using source code, then rpm won't manage it.
4. RPM deals with .rpm files, which contains the actual information about the packages such as: what it is,from where it comes, dependencies info, version info etc.

RPM is used for 5 purposes

1. Install : It is used to install any RPM package.
2. Remove : It is used to erase, remove or un-install any RPM package.
3. Upgrade : It is used to update the existing RPM package.
4. Verify : It is used to query about different RPM packages.
5. Query : It is used for the verification of any RPM package.

Source : https://www.youtube.com/watch?v=72qV32isteQ

1. Install

Step-1

Insert the Linux dvd in the dvd rom drive

Step-2

cd /~ :- this command is to get into the root home directory

Step-3

[root@localhost ~]mkdir rhce :- this command is used to create a rhce directory in the root home folder.

Step-4

[root@localhost ~] mount /dev/dvd /rhce

/* The above command is used mound a dvd to the media directory */

Step-5

[root@localhost ~] cd /rhce

[root@ localhost rhce] cd /packages

Step-6

/# ls command to list all rpm packages

Step-7

[root@localhost Packages] rpm –ivh package name

i= install

v =verbose

h=hash

Uninstall an RPM package

[root@localhost Packages] rpm – e packagename

Upgrade an RPM package

[root@localhost Packages] rpm – U packagename

To query every rpm command installed in the system

rpm –qa

To query every file in an installed package

[root@localhost Packages] Rpm –ql packagename

Example :-

[root@localhost Packages] Rpm –ql BitTorrent

To verify an RPM package

[root@localhost Packages] # rpm – Vp packagename

Example :-

[root@localhost Packages] Rpm –Vp BitTorrent

To verify all RPM packages

13.Working with Yum

[root@localhost Packages] # rpm – Va

13.1 Yum configuration

Source :- https://www.youtube.com/watch?v=ainF0UqbdOQ

Step-1

Insert the Linux dvd in the dvd rom drive

Step-2

cd /~ :- this command is to get into the root home directory

step-3

[root@server1 ~]mkdir media :- this command is used to create a media directory in the root home folder.

step-4

[root@server1 ~] mount /dev/cdrom /media

/* The above command is used mound a dvd to the media directory */

Step-5

[root@server1 ~] cd /media/packages

/* The above command is used to get into the packages folder */

step-6

[root@server1 Packages] ls

The above command is used to list all the rpm packages in the package directory

Step-7

We have to install 3 RPM packages. These are

1. vsftpd*
2. deltarpm*
3. python-deltarpm*

<u>commands to install these 3 packages are</u>

[root@server1 Packages] rpm –ivh vsftpd*
[root@server1 Packages] rpm –ivh deltarpm*
[root@server1 Packages] rpm –ivh python-deltarpm*

Step-8

Once these three are done we can install the package createrepo

[root@server1 Packages] rpm –ivh createrepo*

This command is basically for creating repositories. Without this package we cannot create a repository

Step-9

Now get back to the root directory

[root@server1 Packages] cd /

Step-10

[root@server1 /]#

Here we will create a folder named Repo by using the mkdir command

[root@server1 /]# mkdir Repo

Step -11

Move back to the media folder where we have cd rom loaded

[root@server1 /]# cd /media

step-12

Now we have to get certain files from here

Step-13

[root@server1 media]# cp –rvf /Packages/RPM –GPG-KEY-redhat-release /Repo

Step-14

[root@server1 media]# createrepo –database /Repo/Packages/

Step-15

[root@server1 media]#   ls /Repo

/***** this option gives the keys **********/

Packages:RPM-GPG-KEY-redhat_release

Step-16

Go to the root and create a repository file

[root@server1 media]#   cd /

[root@server1 /]#

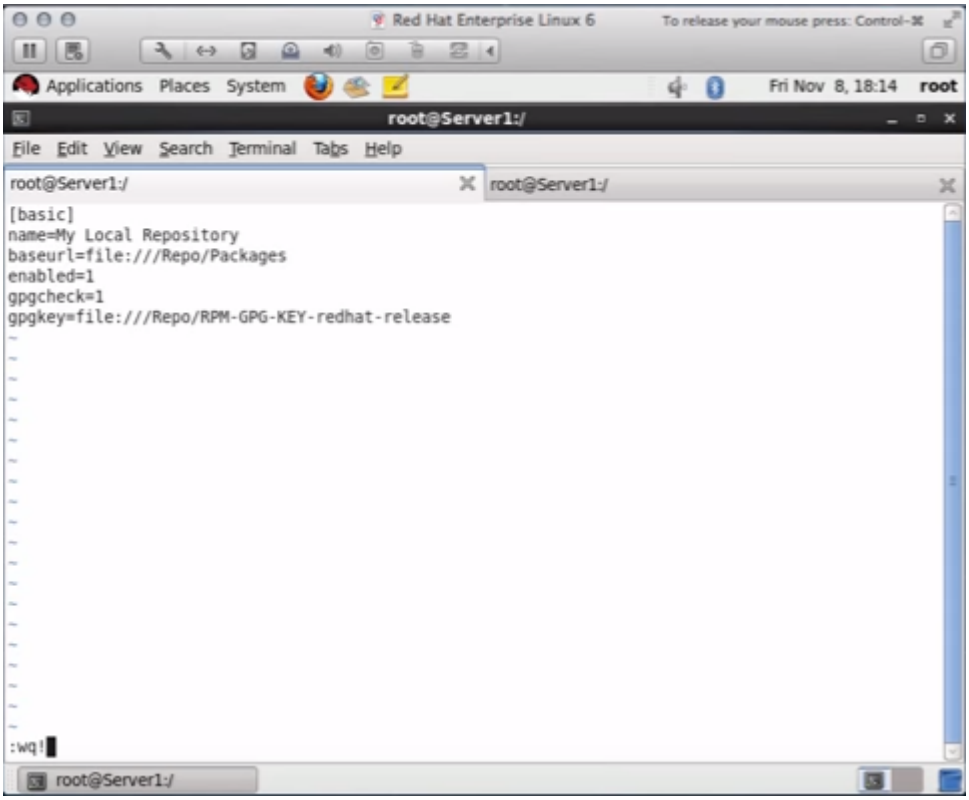
Step-17

Now we create a repository file as shown below

[root@server1 /]# vim etc/yum.repos.d/basic.repo

Step-18

Going to the insert mode of vim by pressing i



Step-19

/*********Now to check whether all the configurations are correctly done or not ******/

[root@server1 /]# yum repolist

13.2 Install a package using Yum

Step-1

/**********how to install a package using yum ******************/

[root@server1 /]# yum –y install kdebase*

/***/

13.3 Uninstall a package using Yum

Step-1

[root@server1 /]# yum remove kdebase

13.4 Update a package using Yum

Step-1

[root@server1 /]# yum update kdebase

13.5 Listing all packages using Yum

[root@server1 /]# yum list | less

13.6 List available group packages using yum

In Linux, number of packages are bundled to particular group. Instead of installing individual packages with yum, you can install particular group that will install all the related packages that belongs to the group. For example to list all the available groups, just issue following command. [root@server1 /]#

yum grouplist

13.7 Install a group package using YUM

To install a particular package group, we use option as groupinstall. For example, to install "MySQL Database", just execute the below command.

[root@server1 /]# yum groupinstall 'MySQL Database'

13.8 Update a group package using YUM

To update any existing installed group packages, just run the following command as shown below.

[root@server1 /]# yum groupupdate 'MySQL Database'

13.9 Remove a group package using YUM

To remove a group package

[root@server1 /]# yum groupremove 'MySQL Database'

13.10 List a package using YUM

[root@server1 /]# yum list packagename

[root@server1 /]# yum list openssh

13.11 Search for a package using YUM

[root@server1 /]# yum search packagename

[root@server1 /]# yum search vsftpd

13.12 Get information about a package using YUM

[root@server1 /]# yum info firefox

13.13 Check updates using YUM

[root@server1 /]# yum check-update

14 Yast

Yast is a graphical user interface to which can do the following jobs :

- Install and remove software
- Set up your printer
- Configure the firewall
- Enable and disable system services
- Configure network sharing (samba)
- Format and partition your drives
- Enable NTP daemon
- And much, much more...

But since we are confined to installation of software using Yast we shall be discussing about Yast installation.

Working with Yast

Step-1

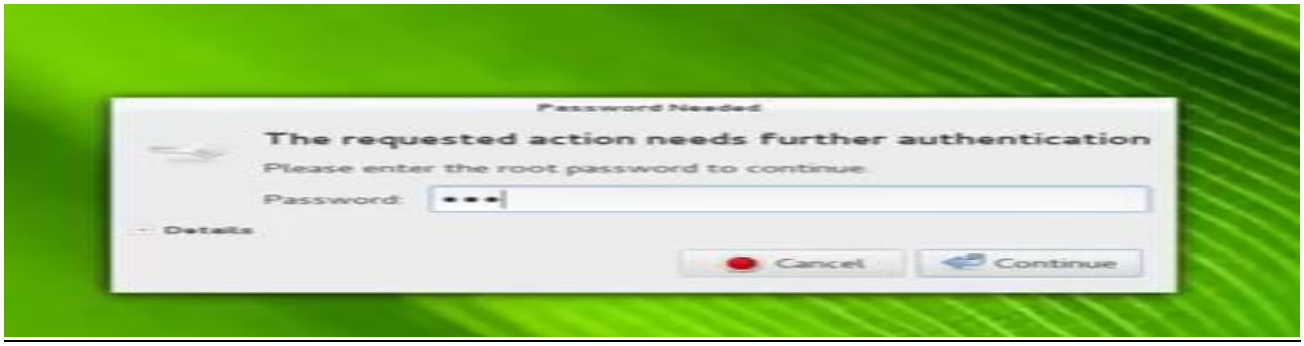
Step-2


Windows
Applications
Adobe Flash Play...
Advanced Settings
Artha
Banshee
BleachBit
BleachBit as Ad...
Bombono DVD
Brasero
ClamTk
Contacts
dconf Editor
Desktop Search
Desktop Sharing
Dictionary
Disks
Disk Usage Analy...
Documents
File Roller
All
Accessories
Games
Graphics
Internet
Office
Programming
Sound & Video
System Tools
Universal Access
Other

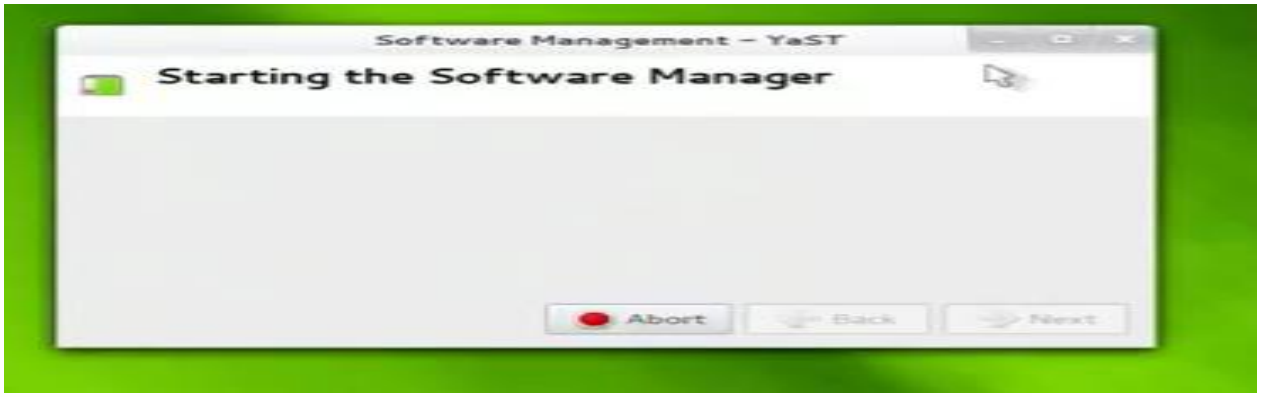
Step-3


Activities
Fri 15 Feb, 00:04
Mantis
Windows
Applications
inst
Install/Remove S...
Software Update
GNOME Characte...
American Mustac...
H.I. Hardware Inf...
Installing Apache...
How to Install a...
ICEfaces (Ajax F...
Instant Grammar...
Links to WEB Sit...
Wikipedia
Google

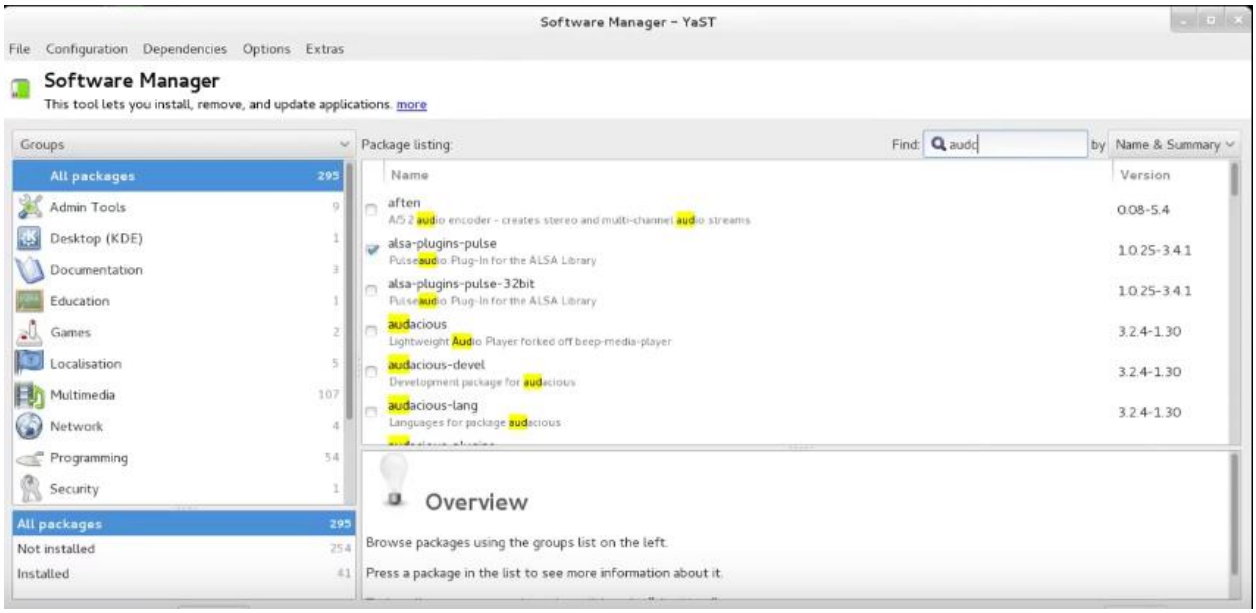
Step-4


Password Needed
The requested action needs further authentication
Please enter the root password to continue
Password:
Details
Cancel
Continue

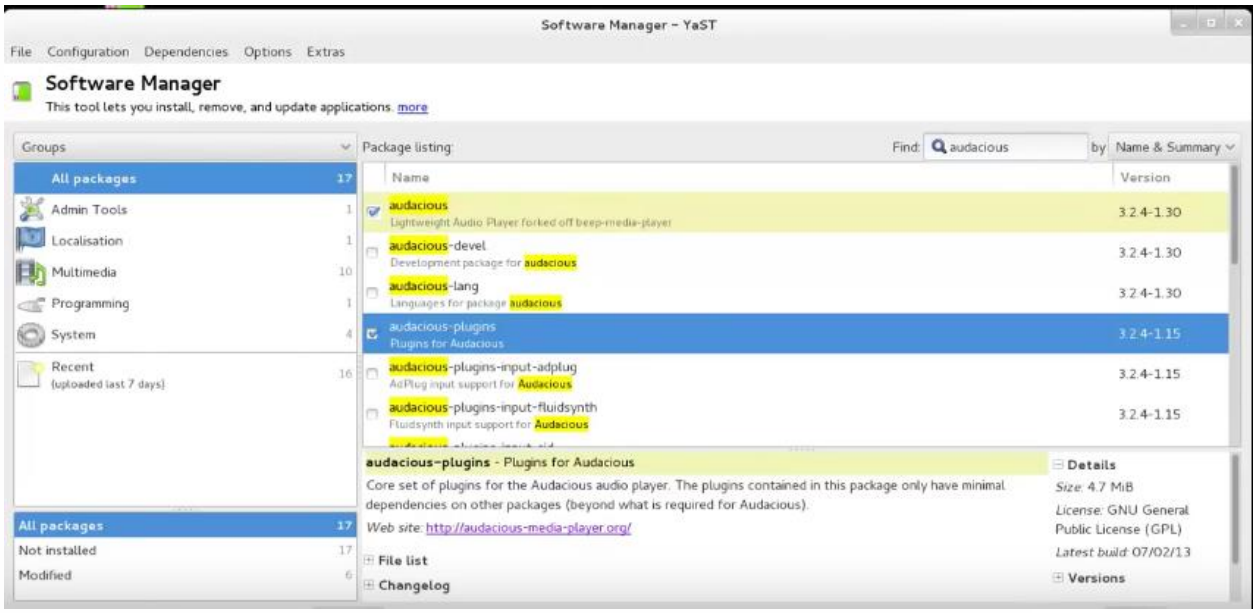
Step-5


Software Management – YaST
Starting the Software Manager
Abort
Back
Next

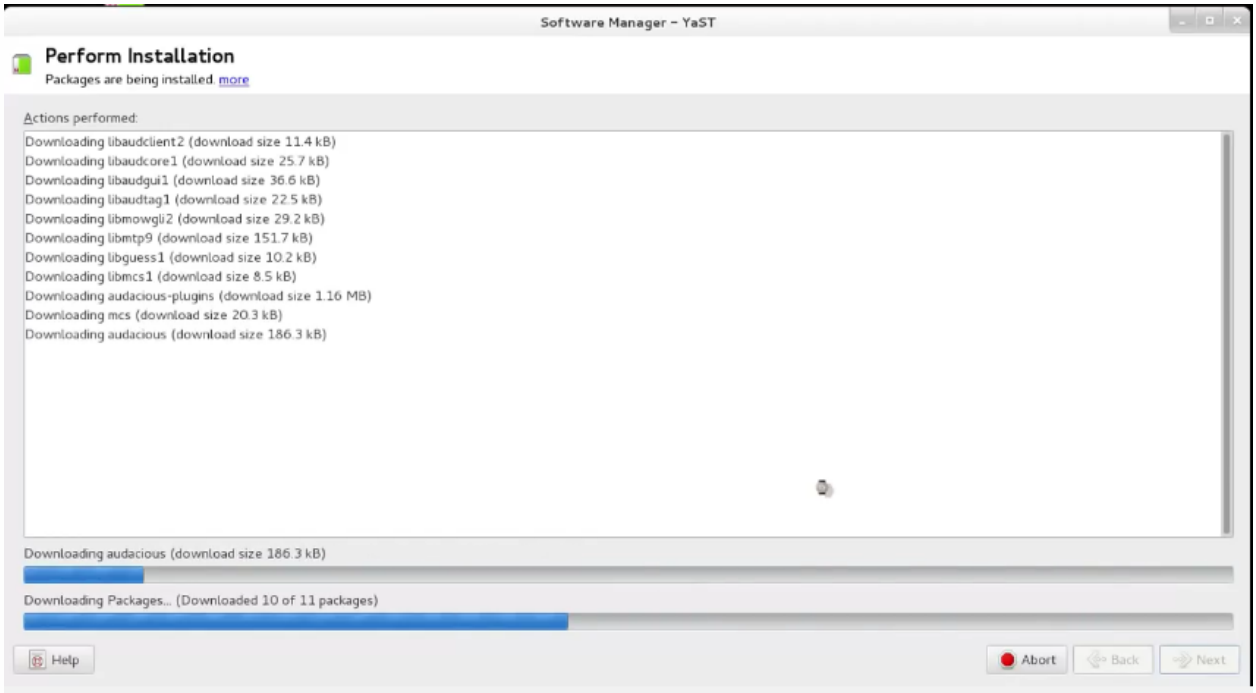
Step-6


Software Manager – YaST
File Configuration Dependencies Options Extras
Software Manager
This tool lets you install, remove, and update applications. more
Groups
Package listing:
Find: audc
by Name & Summary
All packages 295
Admin Tools 9
Desktop (KDE) 1
Documentation 3
Education 1
Games 2
Localisation 5
Multimedia 107
Network 4
Programming 54
Security 1
All packages 295
Not installed 254
Installed 41
Name
Version
aften
0.08-5.4
alsa-plugins-pulse
1.0.25-3.4.1
alsa-plugins-pulse-32bit
1.0.25-3.4.1
audacious
3.2.4-1.30
audacious-devel
3.2.4-1.30
audacious-lang
3.2.4-1.30
Overview
Browse packages using the groups list on the left.
Press a package in the list to see more information about it.

Step-7


Software Manager - YaST
File Configuration Dependencies Options Extras
Software Manager
This tool lets you install, remove, and update applications. more
Groups
Package listing:
Find: audacious
by Name & Summary
All packages 17
Admin Tools 1
Localisation 1
Multimedia 10
Programming 1
System 4
Recent (uploaded last 7 days) 16
All packages 17
Not installed 17
Modified 6
Name
Version
audacious
Lightweight Audio Player forked off beep-media-player
3.2.4-1.30
audacious-devel
Development package for audacious
3.2.4-1.30
audacious-lang
Languages for package audacious
3.2.4-1.30
audacious-plugins
Plugins for Audacious
3.2.4-1.15
audacious-plugins-input-adplug
AdPlug input support for Audacious
3.2.4-1.15
audacious-plugins-input-fluidsynth
Fluidsynth input support for Audacious
3.2.4-1.15
audacious-plugins - Plugins for Audacious
Core set of plugins for the Audacious audio player. The plugins contained in this package only have minimal dependencies on other packages (beyond what is required for Audacious).
Web site: http://audacious-media-player.org/
File list
Changelog
Details
Size: 4.7 MiB
License: GNU General Public License (GPL)
Latest build: 07/02/13
Versions

Step-8


Software Manager - YaST
Perform Installation
Packages are being installed. more
Actions performed:
Downloading libaudclient2 (download size 11.4 kB)
Downloading libaudcore1 (download size 25.7 kB)
Downloading libaudgui1 (download size 36.6 kB)
Downloading libaudtag1 (download size 22.5 kB)
Downloading libmowgli2 (download size 29.2 kB)
Downloading libmtp9 (download size 151.7 kB)
Downloading libguess1 (download size 10.2 kB)
Downloading libmcs1 (download size 8.5 kB)
Downloading audacious-plugins (download size 1.16 MB)
Downloading mcs (download size 20.3 kB)
Downloading audacious (download size 186.3 kB)
Downloading audacious (download size 186.3 kB)
Downloading Packages... (Downloaded 10 of 11 packages)
Help
Abort
Back
Next

15 Webmin

Webmin is a software which is used for

- Managing the server remotely from a web interface
- Managing users and groups.
- Managing soft wares and updating them.
- Monitor servers.
- Schedule backups.
- Manage services.
- Manage networking systems.
- Set cron jobs and many more.

Installing webmin on Ubentu server 10.0

Source :- https://youtu.be/eO3zOVTNF0I

Step-1

Login as super user and enter your password

Step-2

Login as the root

root@test:/# wget http://webmin.com/download/deb/webmin-current.deb

This is going to the webmin website and download the latest version of webmin.

Step-3

Now the latest version of the webmin got downloaded

To check whether the webmin got downloaded type ls command

This will show a list of files and among them is webmin shown in red colour

webmin_1.550_all.deb

Step-4

In this step we will install webmin

root@test:/# dpkg - I webmin_1.550_all.deb

we cannot install because of many dependencies and so we issue another command

root@test:/# apt -get –f install

Step-5

keep pressing Y when it asks for confirmation

Step-6

Webmin gets installed and is on the port 10000

Step-7

Now we need to find the ip address and the command to get the ip address of the server is ifconfig. The ip address is 10.1.50.32

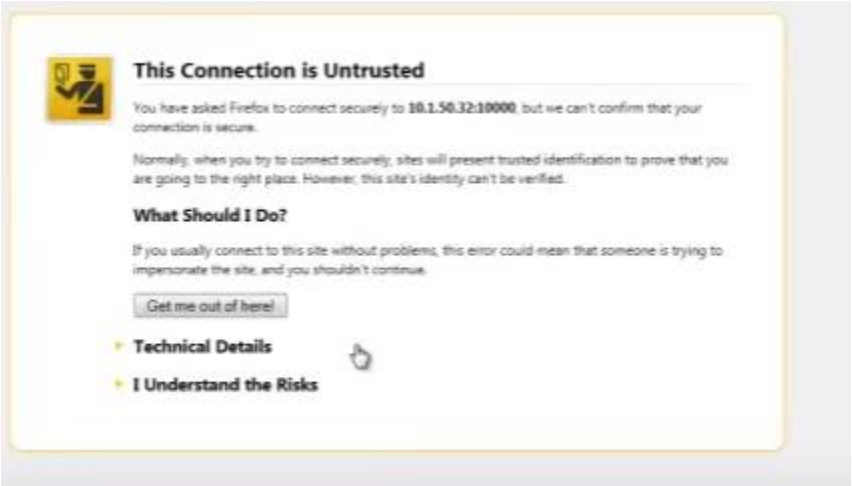
Step-8

Now open the web browser

http://localhost:10000/

Step-9

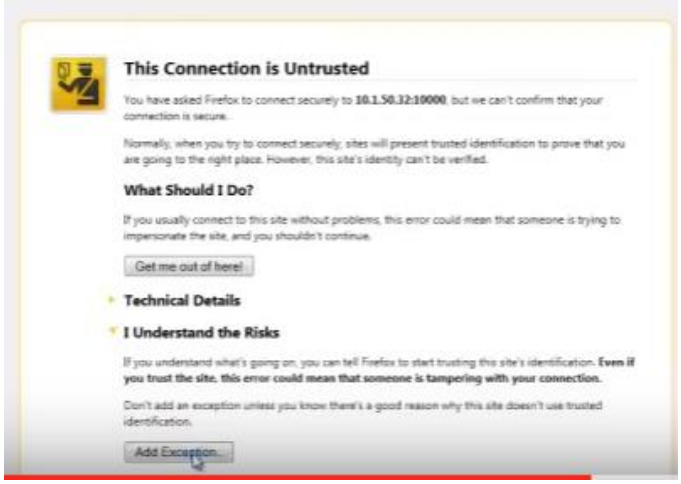
In the beginning it gives a security certificate error



Step-10

Click on I understand the risks

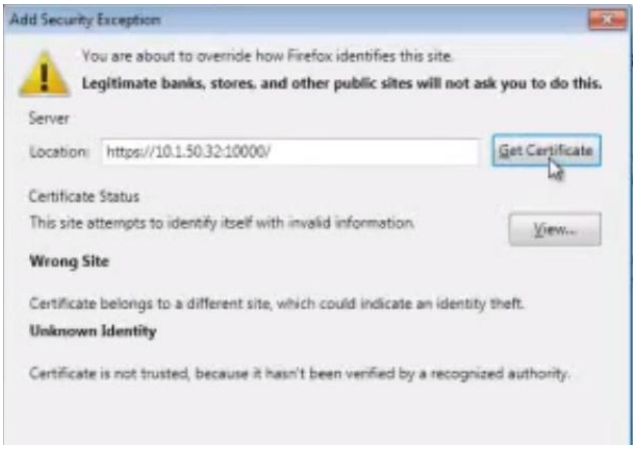
Step-11



Click on Add Exception

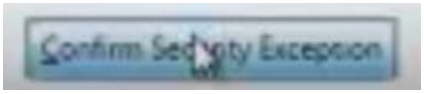
Step-12

Click on Get Certificate



Step-13

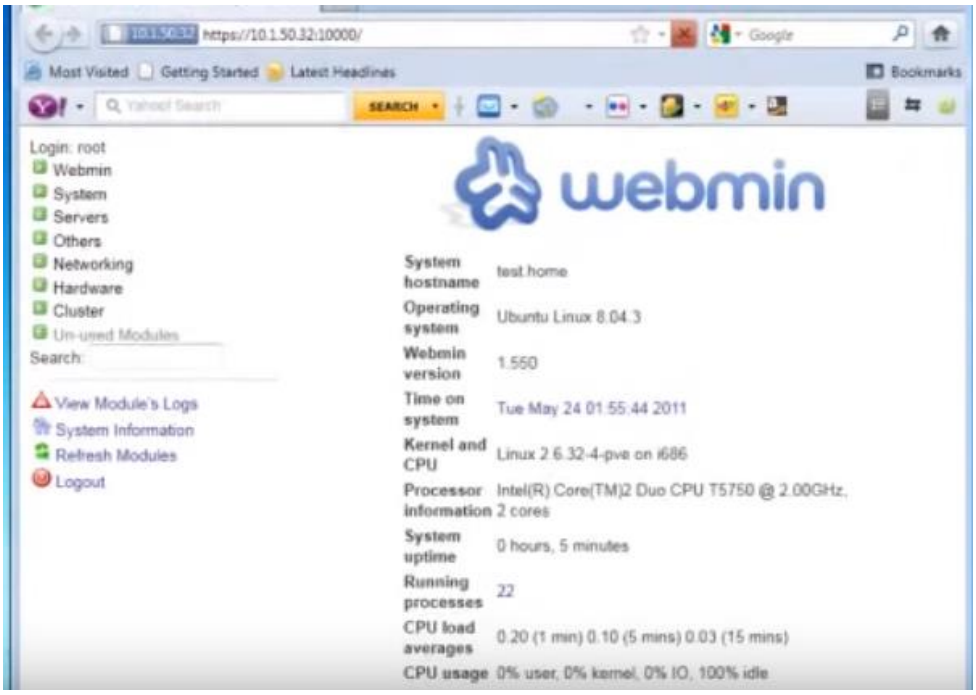
Click on Confirm Security Exception as shown below



Step-14

Step-15

Login as the root and type the password and you can find web min installed.



16. Data compression in Linux

Data compression is used to reduce the size of the file or a directory. Compressing directories help to compress the entire directory into one file so that it can be transmitted across the network via email, taken via pen drives. data compression is done in 4 ways

1.Zip

2.tar

3.tar.gz

4.TAR.BZ2

Compressing using zip in Linux. Zip is the most commonly used archive files which is used in both Linux, Windows and Mac OS. Compressing using the zip compresses till 60%.

Compressing using zip in Linux

zip -r archive_name.zip directory to compress

Uncompressing using zip in Linux.

unzip archive_name.zip

2. Compressing using tar in Linux. This kind of compression takes less cpu time but the compression is not much

Compressing using tar in Linux

tar -cvf archive_name.tar directory_to_compress

Uncompressing using tar in Linux

tar -xvf archive_name.tar.gz

3. compressing using tar.gz :- This kind of compression takes lot of cpu time but the compression is the highest

To compress the folder or file the syntax is

tar -zcvf archive_name.tar.gz directory_to_compress

To uncompress the folder or file the syntax is

tar -zxvf archive_name.tar.gz

To extract to another folder the command is

tar -zxvf archive_name.tar.gz -C /tmp/extract_here/

4. Compressing using the tar.bz2 :- This kind of compression is the best wasy to compress the file /folder

This takes maximum CPU time.

to compress the code is

tar -jcvf archive_name.tar.bz2 directory_to_compress

To extract the file in the same directory the code is

tar -jxvf archive_name.tar.bz2

To extract the file in a different directory the code is

```
# tar -jxvf archive_name.tar.bz2 -C /tmp/extract_here/
```