Name: _____

ZOOM LINUX

SAI XEROX

AMEERPET,

HYD

9885440924

RED HAT

Linux total CD's are. 12.

4 CD's → 32 bit Operating system
4 CD's → 64 bit operating system
1 CD → documentation
1 CD → Extra Application
1 DVD → 32 bit Operating system
1 DVD → 64 bit operating system

Total 12 CD's

RHEL (Red Hat Enterprise Linux)

	Workstation	Enterprise	Advance
RAM	≤ 4GB	≤ 8GB	≤ 64 GB
Processor	≤ 2	≤ 8	≤ 16
Applications	Same	Same	Same

File system

- Physical File system
- Virtual File system
- Logical File system

OS	Filesystem
Windows:	FAT-16
	FAT-32
	NTFS
IBM:	AIX-JFS
SGI (silicon Grafics):	IRIX-xfs
ATBT → sys V = sys V fs	
SUN-solaris:	ufs (unix file system)

Virtual File system:
- ROM FS
- RAM FS
- CRAM FS
- tmp FS
- Proc FS
- swap FS

Logical File system:
- FHS (File system Hirarchy structure)

the data. Such informations are kept under var location so that it can be monitor.

/bin :- It contains the binary files that is like windows executable files. It contains the binaries (commands) which are used by the normal users as well as the root users.

/sbin :- sbin contains the super users binaries that is the commands which are used by the root user.

/etc :- etc stands for nonexecutable it contains all the operating systems main configuration files.

/lib :- It contains the library files which are shared by the group of Applications these files most probably have *.so (share objects) as a extention. (It is just similar to your, windows .dll file (Dynamic link, Library)

/dev :- Its stands for 'device' in linux or Unix every component or every device is in the form of files.

ex:- /dev/cdrom
/dev/fd0
/dev/sd0.

/opt :- Its stands for "optional" all third party applications like oracle 9i, Star office, corel draw by default are installed in /opt.

/mnt :- The "mount" point of removable storage devices like CD-ROM, Floppy drives or created pen drives, printer mnt.

/misc :- 'Misclanious' is an empty directory it can be used as per the users requirement.

/proc :- It contains all kernel running process information.

/lost+found :- It keeps the information of orphan files.

=x=

Linux operating system used two methods

GUI

Text

* Pentium is minimum class
RAM → 96MB for Text mode

RAM → 128MB for GUI mode

Recomended P-II

RAM - 256

Linux Enterprise Edition

GUI Method

* There are 4 linux operating system CD's

⇒ put the first linux OS CD

Anakonda installer is a programe which runs to Insiail the operating system.

⇒ you got welcome screen

⇒ After the welcome screen just click 'Next'

⇒ Language selection (English)

⇒ Keyboard Configuration (US. English)

⇒ Next

⇒ Mouse configuration (select wheel mouse (PS/2))

⇒ Next

⇒ Disk Partition

Disk Druid is a Program to create the Partition only while installation.

⇒ Automatically Partition

⇒ Select Manually Partition.

This commands are use only installation time

Ctrl + Alt + F1 = Installas information

Ctrl + Alt + F2 = Prompt (su)# Free

Ctrl + Alt + F3 = debugging messages

Ctrl + Alt + F4 = Kernel related information

Ctrl + Alt + F5 = boot loadis information

Ctrl + Alt + F7 = GUI

⇒ Next

⇒ Boot Loader configuration

⇒ Select GRUB

⇒ Next

⇒ Network configuration

→ click on Edit

→ Uncheck the configure Using DHCP

→ Assigns the I.P. 192.168.0.253

Net mask : 255.255.255.0

→ OK

⇒ select ⊙ Manually ex:- station253.example.com

Gateway : 192.168.0.254

Primary : 192.168.0.1

⇒ Next

⇒ Firewall configuration.

→ select NO Firewall

⇒ Next

⇒ Additional Languages support

→ select English (USA)

⇒ Next

⇒ Time zone

→ select Asia/culcutta

⇒ Next

⇒ Set Root Password

→ Type the Password "redhat"

⇒ Next

→ Select ☑ windows system

☑ GNOME

☑ Editors

☑ Graphical internet

☑ Text based internet

→ Server side

☑ Server configuration tool

→ Development

☐ → skip the option (uncheck)

→ System

☑ Administration tools

⇒ Misclanious

☑ Everything

⇒ Next

Installation Text Mode

⇒ Put the first linux CD

⇒ and Restart the system

⇒ It will be display 'boot' prompt

⇒ boot :

⇒ To type 'linux text'

⇒ boot : linux text

⇒ you got welcome screen

⇒ OK

⇒ Language selection (English)

⇒ OK

⇒ Keyboard selection (US)

⇒ Mouse selection

→ select wheel mouse (PS/2)

⇒ OK

⇒ Disk partition

⊙ Auto Partition

⊙ Disk Partition

→ select Disk Partition

⇒ Partition screen will be display

→ specify the Partition space

/boot	100 MB
/	1800 MB
/usr	2000 MB
/var	1000 MB
/home	1000 MB

select swap 512 MB → double of RAM

Press one time tab.

→ and select swap with Arrow keys

⇒ Boot loader configuration

→ select GRUB

⇒ OK

→ Press F12 to skip the screen

→ Press F12 "

→ Press F12 "

⇒ select Master Boot Record

Short cut Keys:

Alt + F1 → Startup menu

Alt + F2 → Run Command Dialog Box

Esc → Remove the Dialog Box

Press Right side ctrl + 110 → Right mouse click menu

Alt + space → Press 'x' Maximize.
'x' minimize.

Alt + Tab → Go for different windows

Alt + F4 → To close the window

Ctrl + Alt + Delete → Shutdown or Log off or restart

Ctrl + Alt + Backspace → Log in Screen

In command prompt

init 0 → To Shutdown

init 6 → To restart

Ctrl + Alt + F1 → go to Text Mode

Ctrl + Alt + F2 → tty1

Ctrl + Alt + F3 → tty2 console

Ctrl + Alt + F4 → Terminal

Ctrl + Alt + F5 → or Command line interface

Ctrl + Alt + F6 → tty6

Ctrl + Alt + F7 → go to GUI mode.

⇒ you got welcome screen

⇒ OK

⇒ Language selection (English)

⇒ OK

⇒ Keyboard selection (US)

⇒ Mouse selection

→ select wheel mouse (PS/2)

⇒ OK

⇒ Disk partition

- Auto Partition
- Disk Partition

→ select Disk Partition

⇒ Partition screen will be display

→ specify the Partition Space

/boot	100 MB
/	1800 MB
/usr	2000 MB
/var	1000 MB
/home	1000 MB

select swap 512 MB → double of RAM

Press one time tab.

→ and select swap with Arrow keys

⇒ Boot loader configuration

→ select GRUB.

⇒ OK

→ Press F12 to skip the screen

→ Press F12 "

→ Press F12 "

⇒ select Master Boot Record

Alt + F1 → Startup Menu

Alt + F2 → Run Command Dialog Box

Esc → Remove the Dialog Box

Press Right side ctrl + F10 → Right mouse click menu

Alt + space → Press 'x' maximize
'x' minimize.

Alt + Tab → Go for different windows

Alt + F4 → To close the window

Ctrl + Alt + Delete → Shutdown or Log off or restart

Ctrl + Alt + Backspace → Log in Screen

<u>In command prompt</u>

init 0 → To shutdown

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Ctrl + Alt + F1 → go to Text Mode

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Ctrl + Alt + F4 → Terminal

Ctrl + Alt + F5 → or command line interface

Ctrl + Alt + F6 → tty6

Ctrl + Alt + F7 → go to GUI mode.

ls -R → 'R' means 'Recursive', shows the Tree structure of files and Directory.
[just like in DOS: 'Tree' command]

ls -F → 'F' means 'File type', It displays the type of file.

ex: directory → india/ (/)
binary → *
link → @.

ls -m → 'm' means 'comma', It displays the file with commas.

ls -i → 'i' means 'inode', Its a numaric value of a file given by the operating system.

ll → Its shows the all files with details

---

③ # cat (concatinate):- This command is used to create a new text files as well as, to view the created text files.

ex:- To create a file.

syntax:- # cat > (file name)
↓
redirect.

ex1:- # cat > sameer

Sameer is a good boy
He is a student of
zcom technologies.
^D ---> ctrl+D → to save the file

Syntax:- cat <file name>

ex2:- cat sameer ↵

ex:- To copy the file.

Syntax:- cat <old file name> > <New file Name>

ex:- cat sameer > khaja

ex:- cat 123 abc > 123abc

ex:- cat f1 f2 f3 > f123

ex:- To add the information already created file.

Syntax:- cat >> <file name>

ex:- cat >> sameer

He is learning Networking.

ex:- cat sameer ↵

Sameer is a good boy
He is a student of
zoom technologies
He is learning networking.

ls -R → 'R' means 'Recursive', shows the Tree structure of files and Directory.
[just like in Dos. 'Tree' command]

ls -F → 'F' means 'File type', It displays the type of file.

ex: directory → India/ (/)
binary → *
link → @.

ls -m → 'm' means 'comma', It displays the file with commas.

ls -i → 'i' means 'inode', Its a numaric value of a file given by the operating system.

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... create file.

Syntax:- cat <file name>

ex2:- cat sameer ↵

ex:- To copy the file.

Syntax:- cat <old filename> > <New file Name>

ex:- cat sameer > khaja

ex:- cat 123 abc > 123abc

ex:- cat f1 f2 f3 > f123

ex:- To add the information already created file.

Syntax:- cat >> <file name>

ex:- cat >> sameer

He is learning networking

AD.

ex:- cat sameer ↵

sameer is a good boy

He is a student of

zoom technologies

He is learning networking

④ **#mkdir:-** This command is used to create a directories as well as multiple directories.

syntax:- #mkdir <directory name>

ex1:- #mkdir zoom -----> one directory

ex2:- #mkdir Hyd sec banj ---> multiple directories

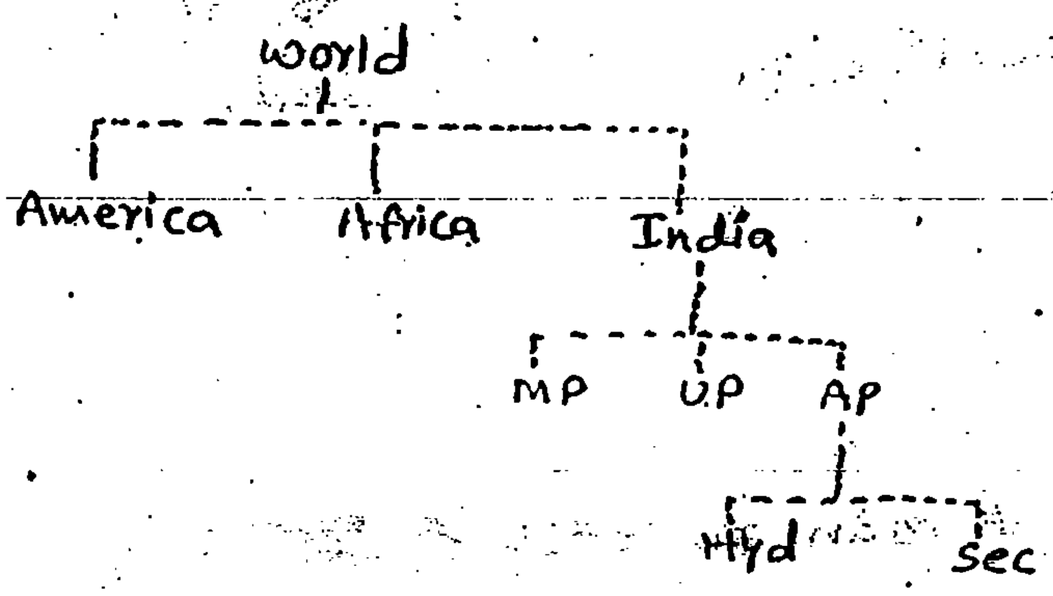
ex3:- # mkdir -p <directory name>/<sub-dir>/<sub dir>

-p → Parent

mkdir → This command is used to create a directory, in directory create a sub directories.

ex:- mkdir -p Hyd/ameer/sec/banj

ex:-



#mkdir -p world/{America, Africa, India/{MP, UP, AP/{Hyd, sec}}}

#ls -R world/

⑤ **#rmdir:-** It means Remove directory, It is used to only remove the empty directories.

syntax:- #rmdir <empty directory name>

ex:- # rmdir sec

ex:- # rmdir ameer banj

or directory as well as 'Non-empty' directories

used to remove the files

syntax:- # rm <file name or directory name>

ex:- ① # rm Sameer ---> file

syntax② :- # rm <option> <file name or dir name>

ex① :- # rm -r world --> directory
(r → recursive)

ex②:- # rm -rf world --> directory
(r → recursive, f → forcefully)

(Use this command carefully, ex:- you type the command just # rm -rf ↵ its will be delete the all linux operating system files. so type the command # rm -rf <dir name>

⑦ # man :- This command is used to show the information of all commands

syntax:- # man <Command>

ex:- # man ls → It is shows the all linux commands.

ex:- # man rm → It is shows the 'rm' command information.

* In the information screen press the letter 'q' to quit the screen.

⑧ # Exit :- This command is used to Exit to the Terminal window. as well as one directory to another directory to back.

⑨ # clear :- This command is used to clear the screen. ⑨

ex:- # clear ↵

→ Ctrl+l is short cut to the clear command

* Tab key is used to press one time
  → if you create a file, name is sameer
  → type 'sa' and press Tab key. its will be display the sameer

* Tab key is used to press two times.
  → If you type 'sa' and press Tab key two times its shows all files that particular character mentioned.

⑩ # cd :- (change directory) it is used to change the directories.

syntax:- # cd <directory name>

ex:- (example. 254@ root)# cd sameer ↵

(example. 254@ sameer)# cd khaja ↵

(example. 254@ khaja)# cd mohd ↵

→ (example. 254@ mohd)# cd ..

(example. 254@ khaja)# cd ../../..

↓

its take one level back

cd - → takes to the last working directory

cd ↵ → lways place you at your home dir

history of commands.

Syntax:- # history ↵

ex:- # history 10 → It will be display the last 10 history commands.

(12) # history -c :- This command is used to clear the history of commands.

Syntax:- # history -c ↵

Wild card characters

wild card characters are *, ?

* :- Is used to match 'n' number of characters

? :- Is used to match single character.

ex:- # ls c* → It is showing all the files are starting with 'c' character.

ex:- # ls ??? → It is shows the all files of three characters.

ex:- cat, fat, rat

[a-m] → one alphabate from the range

[!a-m] → not from this range.

ex:- # ls r[a-e]* ↓ red, rat

ex:- # ls r[!a-d]*

(13) **Touch :-** This command is used to create files with zero contents (size) [empty files]. It is also used to change the time stamp of files as well as directories.

① syntax:- # touch <filename> ----> single file

② syntax:- # touch <file name> <file name> <file name>
multiple files.

ex1:- # touch sameer

ex2:- # touch sameer khaja Mohmed

③ syntax:- # touch -t <MMddhhmm> <file name>

ex:- # touch -t 07052215 sameer

touch -l sameer

ex:- # touch -t 07052215 * --> It is changed the all files.

(14) **# cp :-** This command is used to copy the files as well as directories.

syntax:- # cp <option> <source> <destination>
old file — new file.

ex:- # cp sameer sam

ex:- # cp khaja /world/asia/india
This file copied to the india directory.

This command is used to copy a directories.

Syntax:- # cp -r <old directory> <New directory>

cp -rf <old directory> <New directory>

ex:- # cp -r zoom zoom1

cp -rf zoom zoom1

(16) # mv :- This command is used to move the files and directories. It is also used to rename the files and directories.

Syntax:- # mv <old file name> <New file name>

mv <old dir name> <New dir name>

ex:- # mv anil sunil -> Its will be rename it

ex:- # mv anil /mcse/ -> Its will be move the mcse directory.

ex:- # mv sunil /mcse/raju -> Its will be rename it

(17) # more :- This command is used to view the output on the screen page wise.

ex:- # ls /bin | more -> Its will be display the 'bin' directory information.

Press 'q' to quit in middle of more display

18 # less :- This command is used to similar to more, and provides the movement in both direction.

ex:-# ls /bin | less

19 # head :- This command is used to display the top lines of the files by default '10' lines.

syntax:- # head <option> <file name>

ex:- # head sameer

ex:- # head -5 sameer ---> It displays only '5' lines.

20 # tail :- This command is used to display the bootom lines of the file, by default '10' lines.

syntax:- # tail <option> <file name>

ex:- # tail sameer

ex:- # tail -5 sameer ---> It displays only bootom '5' lines.

21 # wc :- This command is used to count the number of lines, words and capitals of the file.

syntax:- # wc <option> <file name>

ex :- # wc sameer

ex:- # wc -l sameer ---> only no of lines

ex:- # wc -w sameer ---> only no of words

ex:- # wc -c sameer --> only no of characters

ex:- # wc -lw sameer --> only no of lines and

(22) # grep :- grep stands for 'general regular pattern'. This command is used to it searches the regular pattern from the file as well as from the multiple files, as well as from output.

syntax:- # grep <search string> <files names>

ex:- # grep how are you sameer

ex:- # grep he is a student sameer khaja moh

output 1 :- sameer: how are you sameer

output 2 :- khaja: he is a student of zoom technology

Used to multiple commands

① # ls -l | wc -l

② # ls -l | grep "^d" → Its will display only directories

③ # ls -l | grep "^d" | wc -l → Its will shows no of directories.

④ # ls -l | grep "^_" → Its will display only files.

⑤ # ls -l | grep "-d" | wc -l → Its will display no of files and directories.

e → cursor moves at the ending direction word to word.

b → cursor moves at the backward direction word to word.

: set number ↵
or
: set nu ↵

: set nonumber ↵
or
: set nonu

G → 'G' means go to line number.

ex:- : se nu 21 G → go to 21 line

ex: : G eof → in number mode its will going end of file.

Delete

Esc dd → deletes a line

2dd → deletes 2 lines

: 10, 20 d → it will delete 10, 20 lines

: 3 d w → its will delete 3 words to the current cursor position

Copy

yy → copy a line

yw → copy a word

3yy → copy 3 lines

p → Paste the text below line

P → Paste the text above line

U → This is a undo

Creating a Partition

(23) # fdisk -l :- This command is used to display the existing partitions.

To creat new Partition

step① # fdisk /dev/hda ↵

step② It is going to (Command help): n ↵

step③ ↵

step④ assign the size ex:- +100M ↵

step⑤ w ↵

* after use # fdisk /dev/hda command use the options.

n → Add a new Partition

p → Print the Partition table

d → delete a Partition

w → write table to disk and exit

q → quit without saving changes

m → print this menu (help)

After creating a partition use this command. (14)

(24) # partprobe :- This command is used to update the kernel created partition.

To Format the Partition.

(25) #.mkfs -t :- This command is used to format the created partition

ex:- mkfs -t ext2 /dev/hda.8
mkfs -t ext3 /dev/hda 8
mkfs -t vfat /dev/hda 8
(or)

ex:- mkfs.ext2 /dev/hda8
mkfs.ext3 /dev/hda8
mkfs.vfat /dev/hda 8

To mounting the partition

(26) # mount :- This command is used to mount the partition.

* before creating the mounting, create a directory in /mnt folder with the related partion name

ex:- # mkdir /mnt/dir8
mount /dev/hda8 /mnt/dir8

(27) # umount :- This command is used to unmount the partition.

ex:# umount /mnt/hda 8

to check
mount

Since in linux the operating system does not allows to access any physical partition directly.

In order to use the formatted partition. It has to be get associated with file system. Hirarchy structure (FHS). So the association is done by a directory this association concept is called mounting.

Q:- What is mounting ?

Ans:- Linking a directory to a partition is called mounting.

A formatted partition can have multiple mount points, but mount point cannot have multiple partitions. that is it is a pointer to the current partition.

Local mounting

steps

⇒ create a partition, hda8

⇒ partprobe

⇒ and format the partition

⇒ create a directory (by default /mnt)

```
# mkdir /mnt/song
# mount /dev/hda8 /mnt/song
# mount -t ext3 /dev/hda8 /mnt/song
          ext2
          vfat
```

Remote Mounting

```
# mkdir /mnt/remount
```

↓ directory name created by sameer

```
# mount -t nfs 192.168.0.15:/var/ftp/pub /mnt/remount
```

16

/mnt/remount ↓ or /misc

Mounting a windows Partition

```
# mkdir /mnt/win_c
```

↓ directory name created by sameer.

```
# mount -t vfat /dev/hda2 /mnt/win_c
```

Mounting a CD-ROM

```
# mkdir /mnt/cdrom
```

↓ directory name created by sameer

```
# mount /mnt/cdrom
```

or

```
# mount /dev/cdrom
```

eject → cdrom will be opened

eject -t → cdrom will be closed.

↓ (tray down)

to unmount cdrom

```
# umount /mnt/cdrom
```

or

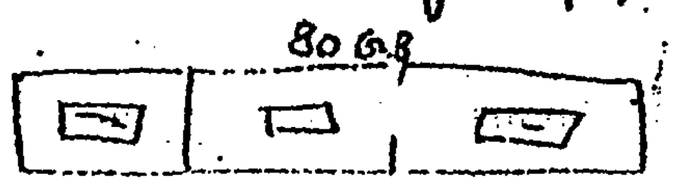
```
# umount /dev/cdrom
```

File system

Difference between ext2 to ext3

ext3	ext2.
• ext3 was introduced from Unux 7.2	• ext2 was Introduced from 7.1
• fsck (Scandisk) command will be there	• e2fsck (Scandisk) command will be there.
Note:- Always perform fsck on unmounted Partition	
• It has journaling	• It has no journaling
• more throughput ↓ Past more flexible	• Less throughput
• It is more secure (ACl)	• No (ACl) support

Journaling :- Journaling concept was introduced by IBM whenever a system haves a unproper shutdown while the systems reboot it performs a scandisc in a normal scandisc its scans the entire partition. If a partition has a journaling then on systems reboot it only scans journal area which minimizes the time for scanning and also increses the operating systems performances.



Convertion of ext2 to ext3

→ create a partition. for ex:- hda9

```
# fdisk /dev/hda
```

→ format the partition. with ext2

```
# mkfs.ext2 /dev/hda9
```

→ mount the partition.

```
# mount /dev/hda9 /mnt/dir9
# mount
```

↳ hda9 partition will be display ext2 formatted.

→ convertion of ext2 to ext3

```
# umount /mnt/dir9
# tune2fs -j /dev/hda9
# mount /dev/hda9 /mnt/dir9
# mount
```

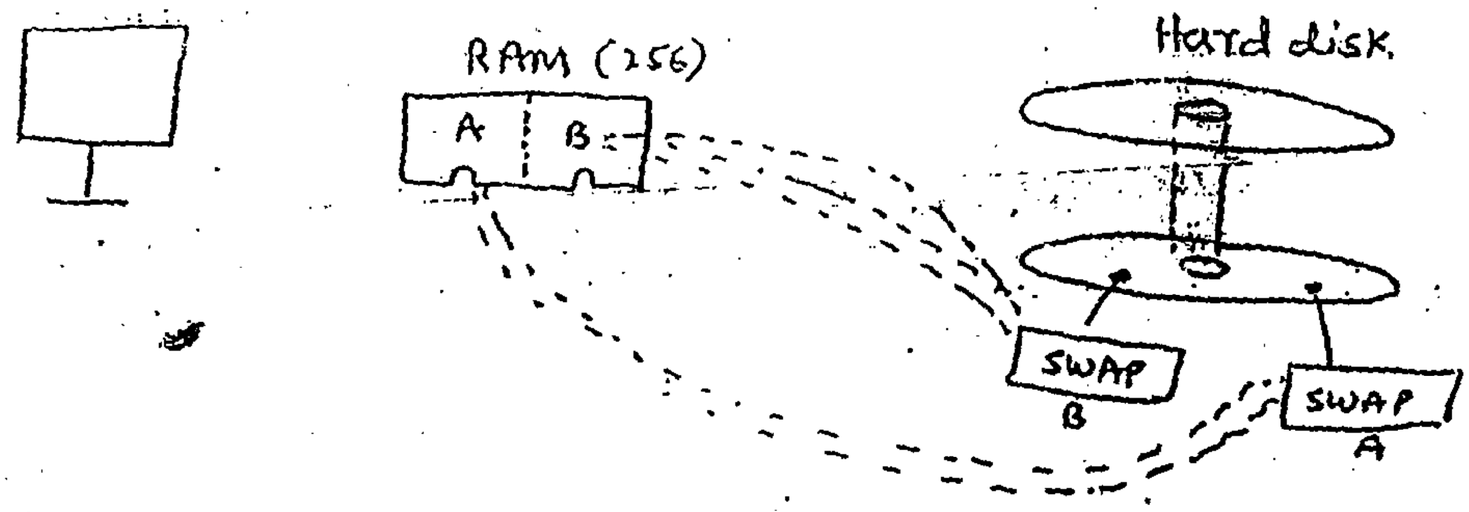
journal

↳ hda9 partition will be display ext3 formatted.

Convertion of ext3 to ext2

```
# Umount /mnt/dir9
# tune2fs -O ^has_journal /dev/hda9
# mount /dev/hda9 /mnt/dir9
# mount
```

capital 'O'



Whenever a applications requires more RAM than the available RAM operating system shifts the content of RAM to a SWAP area. This SWAP area is called as SWAP File system (virtual memory).

Again when the same contents of the application is require it will directly put the application contents from SWAP area to the RAM. instead of from Hard disk area.

Creation of SWAP Partition

SWAP Partition size is indicated by double of our RAM. for ex:- RAM 256, SWAP 512

⇒ Create a Partition of desired size for ex:- /dev/hda10

⇒ # Partprobe

mkswap /dev/hda10

swapon -s

→ This command is displays the status is on or off.

swapon /dev/hda10 (1)

swapon -s (2)

swapoff /dev/hda9 → it is off the hda9

swapon -p 2 /dev/hda9

→ To set the priority

→ Before give the priority first ~~you~~ # swapoff it

Making a File as a SWAP Partition

→ create ~~some~~ Files.

zero # touch /zoom swap

zero # dd. if=/dev/zero of=/zoomswap bs=1024 count=1024

- if → input File
- /dev/zero → null value
- of → output File
- bs → block size

mkswap /zoom swap

swapon /zoomswap

swapon -s

* zoomswap File will be generated by one partition

Label is a name given to a partition

→ How to assign a lable.

e2 label /dev/hda10 vedio → After formating
↓
lable name

→ How to Check the lable.

e2 lable /dev/hda10

↳ Its will be display /Video.

Mounting

Partition { # mkdir /mnt/dir10
mount /dev/hda10 /mnt/dir10

Label { # mount LABEL=video /mnt/dir10
mount

→ How to see the lables.

mount -l
↓
labels.

↳ Its will be displays labled partitions.

df -T

Permanent Mounting

vi /etc/fstab

↓

File system table.

	Field①	Field②	Field③	Field④	Field⑤	Field⑥
	Partition or Label	Mount Point	File system	Permission default	dump frequency (backup)	fsck (scandisk)
① ex-	/dev/hda11	/mnt/dir11	ext3	defaults	0	0
② ex-	Label=video	/mnt/dir10	ext3	defaults	0	0
③ ex-	/dev/dir9	swap	swap	defaults	0	0

Field①:- It contains a information of Partition or Label

Field②:- It Contains the Mount point.

Field③:- It contains the information of File system.

Field④:- It contains the information of permissions.

for ex:- usrquota
grpquota
acl quota.

Field⑤:- The Dump frequency can be 0 or 1
If dump frequency is 0 the backup of that Partition will be not taken
If dump frequency is 1 the backup will be taken in the backup devices

... is 0 then not to perform scandisk (fsck)

If the value is 1 or 2 scanddisk (fsck) should be Run on that partition at every un proper shutdown.

mount -a → mount all partition from fstab
(a → all)

```
# umount /mnt/dir11
# mkfs.ext3 /dev/hda11 -b 2048
```
(-b → block size)

```
# cd /mnt/dir11
# mkdir abc
# ll
```
↳ abc will display 2048 size.

RPM (RedHat Package Management)

→ RedHat linux Packages get an extension .rpm

→ Suse linux Packages get an extension .yast

ex:-

bind - 9.2.2 - 21 . i386 . rpm

Field1 Field2 Field3 Field4 Field5

Field 1:- Name of the Package

Field 2:- Version 9 . 2 . 2

Major version — Minor version — Patch

Major version:- Major version are change in the life span of 6 monts - 3years.

Minor Version:- Minor version are change in the life span of 3 monts - 1 year

Patch:- Patch number gives the information that package is free from bugs.

always a higher patch number means its free from earlier bugs.

Field 3:- (Release):- It is a option number maintained by RedHat.

Field 4:- (Architecture)

* Linux o/s are developed by intel i386 machine

windows i386, i486, 586, 686 ..... AMD, cyrix

586 → PI, 686 → PII

sun sparc, ultra } · sparc

HP } · alpha

Motorola 68000 K → m68K

itanium → i64a

no Architecture :- Can be installed on any machine.

Installation ways

These are 3 ways

① cdrom ② FTP (server) ③ NFS

① cdrom

/mnt/cdrom/RedHat/RPMS

② NFS

192.168.0.15:\var\ftp/pub/RedHat/RPMS
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③ FTP (server) Internet

192.168.0.15/pub/RedHat/RPMS
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*Always go to RedHat/RPMS

* To copy the packages by nfs to misc folder

mount -t nfs 192.168.0.15:/var/ftp/pub /misc

cd /misc/RedHat/RPMS

ls

How to Install the Packages

rpm :- This command is used to installed the packages.

syntax:- # rpm <-Options> <Package Name>

① ex:-

rpm -ivh zip.2.3-16.i386.rpm

→ Just type the package two or three letters and then press the 'Tab' key its will so shows the full path.

-i → Install

-v → verbose (it gives some information while installation)

-h → Progress (It shows installation progress with '#' mark)

* whenever a package is installed package should have .rpm extension

② ex:-

rpm -ivh zip.2.3-16.i386.rpm --force

Its will be istalled forcefully it means overwrite.

③ ex:-

rpm -ivvh zip: 2.3.16.i386.rpm

Its will be display all the contents where It is installed.

④ ex:-

rpm -ivh zip.2.3-16.i386.rpm --aid

Its will be add the

Syntax :- # rpm <option> < package name>

ex①:- # rpm -e zip

-e → Erasing

zip → dont mention full path just type zip

ex②:- # rpm -e zip --nodeps

--nodeps → No dependies

*. Whenever you are Uninstalling or erasing a only provide "Package name" ex:- zip

Querying a package

Syntax:- # rpm <options> <package name>

ex①:- # rpm -qa → [shows all the installed pa[illegible] on the o[illegible]

-q → query

a → all

ex②:- # rpm -q xmms → [Queries only the given part pa[illegible]

ex③:- # rpm -qa | grep or less → [Shows the all the packages when is [illegible] tall

ex④:- # rpm -qi rmms → [give the information of Package]

ex⑤:- # rpm -ql bind → [give the list of files in package]

ex⑥:- # rpm -qd bind → [shows the documentation and man]

ex⑦:- # rpm -qc bind → [It will display the configuration of Package]

Use another option 'p'
ex:- -qap
-qip
-qlp
-qdp

rpm -ivh ftp://192.168.0.15/pub/RedHat/RPMS/zip*
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* Whenever a Package is installed through ftp the proper name of the complete Package should be correctly.
* Some times dependencies are added while installations of certain Packages
* It is faster than NFS server.

GUI Method

⇒ Startup → System Settings → Add remove Applications → and remove the Package

Whenever a users or groups are created in Red Hat linux they are created by following a scheme by that is UPG scheme (User Private Group).

According to this scheme

① Whenever a user is created by default, a group also gets created. This group is called as users primary group.

② A user can have only one primary group but can have multiple secondary group.

③ Permissions are set by umask value.

user → 0002

root → 0022

④ Users home directories are created by default in home directory.

⑤ His or her mail accounts are created /var/spool/mail

The files which get updated or executed while a user is created or logs in.

/etc/passwd
/etc/shadow
/etc/group
/etc/gshadow
} Updated → use this commands
ex:- # vi /etc/passwd
vi /etc/shadow

/etc/login.defs
/etc/profile
/etc/skel
/etc/bashrc
/etc/shells
} Executed.

skel is a directory
↓
cd /etc/skel
ls -a

/etc/passwd:- It contains the information of users name, users ID, is home directory, shell and description.

/etc/shadow:- It contains the password and the age of the password.

/etc/group:- It contains the information of all the groups.

group as well as it also contains of particular group (secondary g

/etc/login.defs :- It contains the c parameeter like the location of users ID, etc.

/etc/profile :- It is provides the comm for all the users.

/etc/skel :- A user gets its enviyonmen from /etc/skel directory.

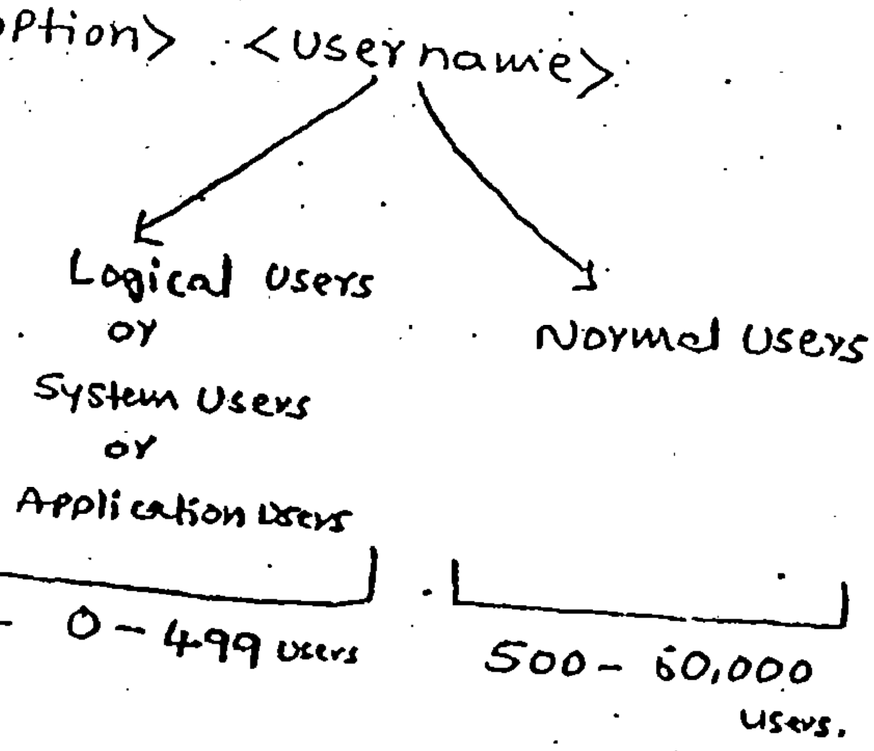
/etc/bashrc :- It contains the bash of the umask value.

The umask value is user → 0002
root → 0022

/etc/shells :- It contains the info of all the shell which are its

Creation of Users

Syntax:- #useradd <option> <Username>



by default creat.

ex:- to create a user without option.

useradd sameer

⇒ to see the user

vi /etc/passwd

Sameer : x : 501 : 501 : : /home/sameer : /bin/bash

- x → Masked Password
- 501 → User ID
- 501 → Group ID
- (blank) → Comment
- /home/sameer → home directory
- /bin/bash → shell.

OPTIONS

- -u → To provide the users ID.
- -o → To overwrite
- -g → To provide the users group ID (primary group)
- -G → To add a user in secondary group.
- -c → To provide a comment or discription of a user.
- -d → To chang the user home directory

- r → To create a system user (ID → 0-499) without mail account
- n → To create a user without UPG scheme
- s → To change the shell.

examples

ex①:-

```
# useradd -u 7000 tomy
# useradd -c "Manager of finance Dept" Khaja
# useradd -d /var/sameer sameer
# useradd -g 7100 sam
```

↓ This command is not work because it is going to change the user group ID. so first you creat group.

```
# groupadd -g 7000 Hyd
# useradd -g 7100 sam
```

↓ Now it is working.

* To see the particular user in thousands of users

```
# grep sameer /etc/passwd
```

↳ This command just like 'Find'

```
# useradd -M sam
```

↳ it is create without mail account user.

↓ To see.

```
# ls /var/spool/mail
```

To use multiple commands in one shot

```
# useradd -u 1000 -g 7100 -c "Manager of Sales Dept"
        -d /var/sameer -s /bin/tcsh khaja.
```

To Modify the Users

syntax:- #usermod <option> <username>

OPTIONS

- -u → To provide the user ID and modify
- -c → to modify the comment
- -d → to modify
- -g → to modify the user group ID.
- -s → to modify the shell
- -U → Unlock the account
- -L → Lock the account
- -l → Change users login name.

examples

```
# usermod -u 1007 -g 7100 -c "Manager of May"
        -d /var/sameer -s /bin/bash -m Sam
```

```
# useradd Khaja
# grep Khaja /etc/passwd → to see
# usermod -d /var/sameer khaja → to see
```

Delete the user

Syntax:- # userdel <option> <username>

ex:- # userdel -r → recursive sameer.

→ Delete home as well as mail account

Creation of Groups

Syntax:- # groupadd <option> <groupname>.

Examples

groupadd sameer

groupadd -g 8001 sec

groupadd -g 9001 -o Hyd

groupadd -g hyd -r sec, bang jack

* Modify the groups

Syntax:- # groupmod <option> <groupname>

ex:- # groupmod -g 9001 sec → change the sec group ID.

groupmod -n Bang sec → To change the group name.

To Delete the Groups

syntax:-

#groupdel <group name>

ex:- #groupdel sec -> delete the sec group.

Log in as a user

syntax:- # su - <username>

ex:- # su - sameer

To set the user Password

syntax:- # Passwd <username>

ex:- # Passwd sameer ↵

New Passwd: *** ↵
Re-enter : *** ↵

PERMISSIONS

File permissions

$$\overbrace{-rw}^{6}\ \overbrace{-rw}^{6}\ \overbrace{-r}^{4}$$

- rw → owner or user
- rw → Group
- r → Others.

- - User file
- d :- directory
- l :- link
- s :- socket

- b :- block device
- c :- character device

r	w	x		
0	0	0	→	0
0	0	1	→	1 → x
0	1	0	→	2 → w
0	1	1	→	3 → wx
1	0	0	→	4 → r
1	0	1	→	5 → rx
1	1	0	→	6 → rw
1	1	1	→	7 → rwx

Permission	Per	operators
User = u	r = 4	=
Group = g	w = 2	+
Other = o	x = 1	−
all = a		

semantic

numericals

examples

```
# mkdir sam
# ls -l sam
# ls -ld sam
# chmod 777 sam
# ls -ld sam
# ls -ld
```

↳ it is asking parent directory permi

Symbolic Method

```
# chmod u=rx sameer
# ls -l sameer
# chmod g=rw sameer
# ls -l sameer
# chmod o=r sameer
# ls -l sameer.
```

To add the permission to write

```
# chmod u+w sameer
# ls -l sameer
```

To remove the Group Permission read & write

```
# chmod g-rw sameer
# ls -l sameer
```

To add the permission to all read & write

```
# chmod a=rw sameer
# ls -l sameer
```

Numeric Method

```
# chmod 652 sameer -> Particular User
# chmod 652 x -> To all users.
```

output :-

```
-rwx rw-r--   1  root  root  34 Aug 8 15:04
```

- Permission
- Link
- Owner of User
- Group
- size
- Date & Time

Change the Ownership

Syntax:-

```
# chown <username> <resource file or Dir>
```

ex:-

```
# chown sameer khaja
# ls -l khaja
```

Change the Group

Syntax:-

```
# chgrp <groupname> <resource file or Dir>
```

ex:-

```
# chgrp munna sameer
```

→ To change group of sameer file

```
# chgrp munna *
```

→ To change the group

Change the ownership as well as Group

Syntax:-

```
# chown <username>:<groupname> <resource file>
```

ex:-

```
# chown hyd-sec sameer
```

or

```
# chown hyd:sec sameer
```

Group Administration

→ create one group by name sales

groupadd sales

→ create some users.

useradd a1; useradd a2; useradd a3

→ create Administrator user and Member users.

gpasswd -A a1 -M a2,a3 sales

cat /etc/gshadow | grep sales

Output:

sales : ! : a1 : a2 , a3

↓ group ↓ Admin User ↓ Member users.

→ to Assign the password for Admin. User.

Passwd a1

→ login as a Admin User

su - a1

→ delete the a2 user it is deleted.

→ login as a member user.

su - a3

→ delete a a2 user it shows the Permission deney because Admin user do any thing but Member user cannot do,

whenever -M option is given all users be specified, otherwise only those users added which are mention by -M

* Adding a Administrator with -A does means that he becomes a member by default.

* whenever a new user is to be added to be remove always use.

-a → to Add

-d → to delete a member from a group

create two groups

#groupadd finance
- b1 → user
- b2 → user
- b3 → user

#groupadd Marketing
- c1 → user
- c2 → user
- c3 → user

#gpasswd -a b2 finance → to add a u

#gpasswd -d b3 finance → to delete

#gpasswd -a b1 Marketing → Not add user because is a finance user not a marke

Assigning a Group password

```
# gpasswd sales
changing the pass - - - - - - -
new Password: x x x x

# grep sales /etc/group /etc/gshadow
```

Remove a Password

```
# gpasswd -r sales
# grep sales /etc/group /etc/gshadow.
```

Group Admin

```
# gpasswd sales
asking password  a1
                 a2
                 a3

# grp un conv
                 b1
# su - b1        b2
                 b3

# newgrp finance
Password - ...

# id

# touch a.b c
```

Password convert enables the shadow file.

pwunconv :- Password convert desables the shadow file and the encripted Password from shadow to Password.

grpconv :- Group convert Enables the gshadow

grpunconv :- Group unconvert. Enables the gshadow file. and allows users to change the groups with help of # Newgrp command.

(New grp)

vipw :- vipw is a shortcut to open first /etc/passwd f.e. if edited then /etc/shadow.

vigr :- vigr is a shortcut to open first /etc/gpasswd, if edited then /etc/gshadow.

User quota and Group quota

User quota

Step①:-

→ create a partition.

ex:- # fdisk /dev/hda ↵

partprobe

mkfs.ext3 /dev/hda9

mkdir /mnt/dirq

mount /dev/hda /mnt/dirq

Step②:- we have to say that this partition is ready to accept quota.

ex:-

mount -o remount, rw, usrquota, grpquota /mnt/dirq

mount

Step③:- Create a database to keep quota information.

quotacheck -cug /mnt/dirq

→ -c → create

→ -u → user quota (user database file is aquota.user)

→ -g → group quota. group database file is agroup. group

*(real time normally quotas are given on home directory)

Step④:- Now make the partition active for quota.

quotaon -p /mnt/dirq

→ this option is used to print the

PWD

on -ug /mnt/dirq

→ group quota will be on

→ user quota will be on

off -ug /mnt/dirq

→ group quota will be off

→ user quota will be off

step⑤:-

→ Create two groups and creat few users on it

ex:-

Hyd — h1, h2, h3

Sec — s1, s2, s3

* quotas are applicable for primary.

step⑥:- without permission cannot write the user directory. user can get a full permission.

ex:- # chmod 777 /mnt/dirq

step⑦:- To Restricting a user.

Syntax:- # edquota <-option> <username>

↓

edit quota

ex:- # edquota -u h1 ↵

↓

it is shows the 'h1' user information edit it

Disk quota for 'dsey hi (uid 518):

ex:-

File system	blocks	soft	hard	inodes	soft	hard
/dev/hda9	0	0	0	0	0	0
	↓ size	warning vols	↓ max contain beyond	↓ equal to no of files/dir		

Note:-

block :- It means the total size of user ex:- 5MB

soft :- Its gives the warning, suppose you given the 3, and you in create after three files it should be given a warning.

hard :- total files ex: 5

Group quota

* Group quota will be same as well as user quota. Change the option -g instead of -u

ACL (Access controll list)

It is used to give the permission to particular user is used to "ACL" ACL stands for (Access controll list)

ext3 file system was the future of ACL.

Syntax:-

setfacl -m <rule> <resource>{file/dir}

u : <username> : Permission

g : <groupname> : Permission

o : Permissions

Steps

Step①:- → create a partition

```
# fdisk /dev/hda
# Part probe
# mkfs.ext3 /dev/hda9
# mkdir /mnt/dir9
# mount /dev/hda9 /mnt/dir9
```

Step②:-

```
# mount -o remount,rw,acl /mnt/dir9
# mount
```

ex:-

```
# setfacl -m u:h1:rx sam
# setfacl -m g:hyd:rw sam
# setfacl -m u:h2:rx, g:hyd:rw, u:h3:rx, g:s
```

filename

getfacl <filename> → to see the Permission of resource.

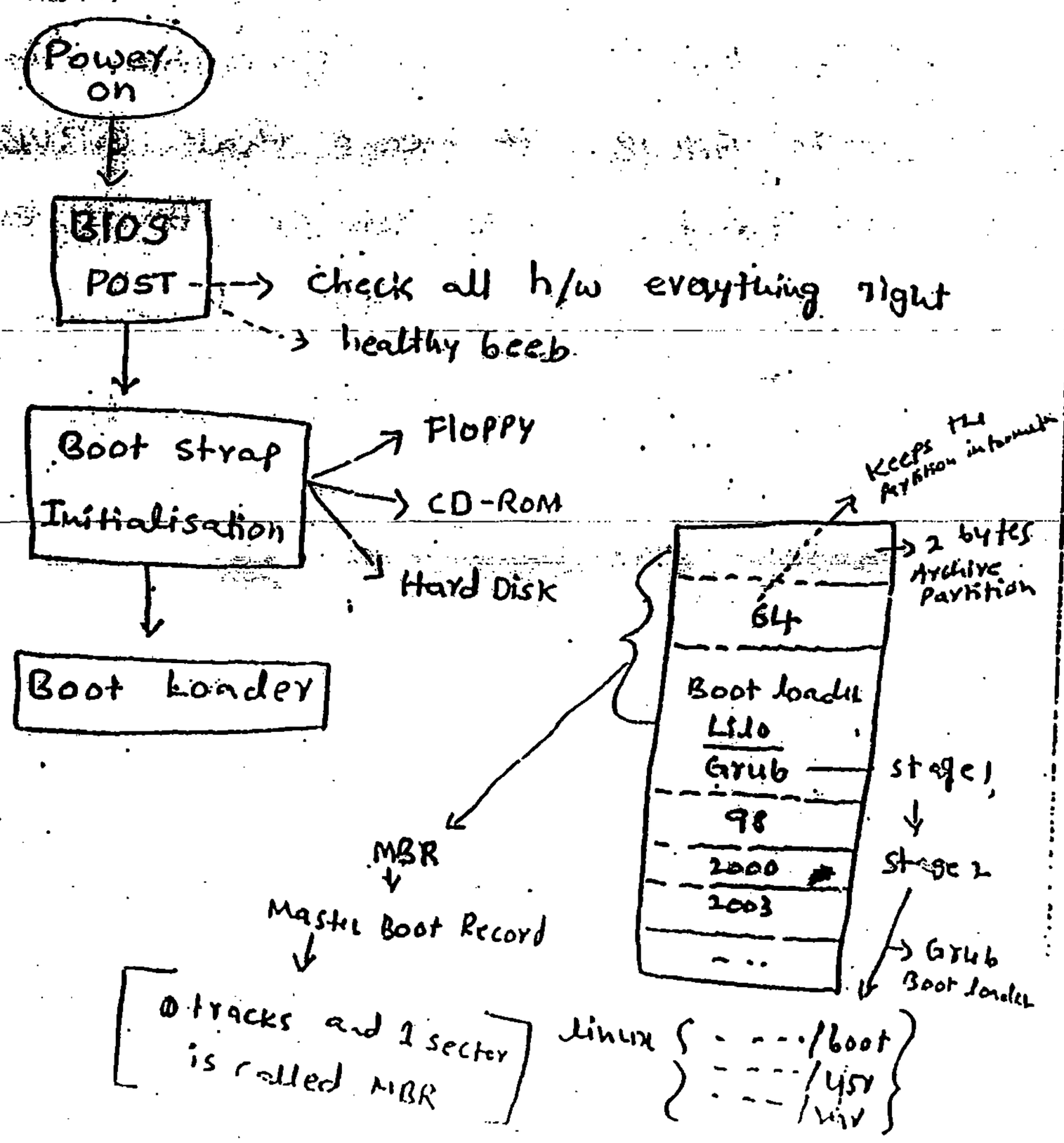
ex:- # getfacl sam

Booting class

Shutdown and Reboot

The operating systems boot with the following Phase.

1. BIOS INITIALISATION
2. BOOT LOADER INITIALISATION
3. KERNEL INITIALISATION
4. PROCESS INITIALISATION. (init)



Grub :- Grub stands for Grand Unified Boot loader.

Difference

* lilo was the default boot loader up to from 7.2 GRUB became the default boot loader.

* If the /boot Partition { we have vmlinuz, initrd, grub } lies beyond 1024 sylinders. The lilo boot loader cant run The O/S. This draw back was overcome by the next generation loader" That is GRUB. It means that GRUB can understand the location of /boot even if /boot, lies beyond the 1024 sylinders.

* GRUB is not only a boot loader it also provides Initial environment to trouble shoot the Operating system.

Since the GRUB size is 2 bit to get fit in 446 bytes. that is why it has to devided in two parts. these two parts is called as 'stage 1' and 'stage 2'.

Process
↓
init → is the father of all process
↓
/etc/inittab.

pstree → (process tree)
pstree | less
vi /etc/inittab ↵

RUNLEVELS

0 → Shutdown
1 → Single user mode or super user mode or trouble shooting mode.
2 → Multi user without NFS, NIS, LDAP
3 → Full Multi user mode, with only command line interface (only text mode not GUI mode)
4 → reserved; unused.
5 → Full multiuser mode + command line + GUI
6 → Restart or Reboot.

#.runlevel :- This command is used to show the present runlevel.

ex:- # init 3
runlevel → it is shows '3 runlevel'

ex:- # init 5
runlevel → it is shows '5 runlevel'

→ It is going to Runlevel configuratio directory.

cd rco.d/ ↵

ls.

- - - -

NETWORKING

Network

- Homogenious Network
- Hetro genious Network.

		255	0	0	0
Class A	0 - 127	N	H	H	H
		255	255	0	0
class B	128 - 191	N	N	H	H
		255	255	255	0
class C	192 - 223	N	N	N	H

Class D 224 - 239 Multitasking, News groups

Class E 240 - 255 Research and development

Private

Class A 10.0.0.0 - 10.255.255.255

Class B 172.16.0.0 - 172.31.0.0

Class C 192.168.0.0 - 192.168.255.255

HOW TO ASSIGNING THE IP

To Check the IP

ifconfig → it shows the

eth0 → default LAN Card (1st lan card)
eth1
eth2
lo → Loop back Adaptor

ifconfig lo

TO Assigning the IP

ifconfig eth0 192.168.6.60

TO Assigning the Net-mask

ifconfig eth0 192.168.6.60 netmask 255.255.255.0

To Assigning the Broadcast IP

ifconfig eth0 192.168.6.60 netmask 255.255.255.0
broadcast 192.168.0.255

* These above IP addresses are temporary assigning IP Addreses.

ASSIGNING A PERMANENT IP

netconfig → It is open the window in window.
→ press yes.

IP Address

Netmask

Router ← Default Gateway (IP)

DNS ← Primary name server

→ press OK.

service network restart

TO Check

ifconfig

vi /etc/sysconfig/network-scripts/ifcfg -eth0
or

cat /etc/sysconfig/network-scripts/ifcfg-eth0

TO Assign a IP for eth1

netconfig --device eth1

If you do not have eth1, first create virtual IP

netconfig ---device eth0:1 ↵

→ and assign the IP. in the screen.

service network restart
or

!se → it is shortcut to service network restart

set

ifconfig → to check the IP.

Creating the LAN card with the help of file

cd /etc/sysconfig/network-scripts

ls

cp ifcfg-eth0 ifcfg-eth0:2

To go to the file eth0:2

vi ifcfg-eth0:2

and edit it

Device = eth0:2

ONBOOT = yes

Boot Proto = static

NETMASK = 255 255. 255. 0

GATEWAY = 192. 168. 5. 254

to save Press Esc + w or Esc : shift + zz

! se

TO Check

ifconfig.

TO Disable the LAN

ifdown eth0

TO Enable the LAN

ifup eth0

TO Ping the other system

ping 192.168.0.254

TO Check the all the IP'S of Network

Ping 192.168.0.0 -b broadcast

Ping 192.168.0.255 -b

Assigning a Name to a system

Checking the name of Host

hostname

To assign the Host name (Temparary)

hostname station254.yahoo.com

To assign the Host name (Permanent)

vi /etc/sysconfig/network

and edit it

NETWORKING = yes

HOSTNAME = station254.rediff.com

[Save]

* This file is executed whenever a system boots

vi /etc/hosts

edit it

127.0.0.1 localhost.localdomain localhost

192.168.1.23 station254.rediff.com station254

↓

fully qualified domain name.

[Save]

* If the entry /etc/hosts files and # hostname command is not similar its gives a error.

ssh → (secure shell)

ex:- # ssh 192.168.0.18

(yes/No) yes.

Password: ****

↓ it is connect to another system.

w → This command is used to see which person login as the user.

TO copy the files one system to another system

scp -r 192.168.18:/var/sameer /root

scp -r /var/sam 192.168.18:/root/

neat & :- This command is used to create IP's and Gateways and Ethernet in Graphical mode.

*we type the command, its will be open the window.

elinks :- This is Text mode Graphical

redhat-config-network

redhat-config-network &

redhat-config-network-gui → Graphical mode

redhat-config-network-tui → text mode in Graphical mode

In zoom Lab delete the Created IP's

```
# cd /etc/sysconfig/network-scripts/
# ls
# rm ifcfg-eth0:*
# netconfig
# ! se
```

=== x ===

NFS. (Network File system/share)

* NFS → Network File system is developed by 'SUN' Peoples. It is used to share the resources in a LAN senario, it is used to share the files among any Unix or Linux flavor. It was been developed by 'SUN Micro System'.

Requirements

① Packages of Install

(i) nfs-utils ---------- rpm

(ii) portmap ---------- rpm

② Ports No.

(i) 2049 ----> Nfs

(ii) 111 ----> portmap

Daemon

(i) nfsd

* The service which has running the bagrounds beyond the main server is called as (Daemon)

④ Service

(i) service nfs restart

(ii) service portmap restart --> (default)

when you got error 'RPC' start this service

⑤ Main Configuration File.

(i) vi /etc/exports.

give a path of shared directory ie /root/shared/dir *(rw,sync)

local host path

steps to configure NFS server

check the all host entries

step① # ifconfig

Ping 192.168.0.0 -b

vi /etc/sysconfig/network

NETWORKING = yes

HOSTNAME = station253.example.com

vi /etc/hosts.

127.0.0.1 localhost.localdomain localhost

192.168.0.253 station253.example.com station25

hostname

hostname station253.example.com

Step② To Check the Packages

rpm -q nfs-utils , ~~rpm -q~~

or

rpm -qa | grep nfs-utils.

To remove the Packages

rpm -e --nodeps nfs-utils

To remove the database

cd /var/lib/nfs

pwd

rm -f *

rm -rf * donot use this command indivisually why because its deletes all o/s files

Step③ To Install the Packages

#mount -t nfs 192.168.0.15:/var/ftp/pub /misc

cd /misc/RedHat/RPMS

ls

rpm -ivh nfs-utils------rpm --aid

or

#rpm -ivh ftp://192.168.0.15/pub/RedHat/RPMS/nfs-utils*

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Create some Directories and files

```
# mkdir /var/sameer
# mkdir /var/khaja
# cd sameer
```

↓ create some files and directories.

```
# cd khaja
```

↓ create some files and directories.

or- # touch a b c d; mkdir sam mohd

Step ⑤ Go to this file and edit it

```
# vi /etc/exports
```

edit it

```
/var/sameer   192.168.0.0/255.255.255.0 (ro, async)
/var/khaja    192.168.0.15/24 (rw, sync)  192.168.0.19
```

(permissions; 8x32=24)

```
# /var/sam   *.zoom.com (ro, async)
```

→ to give the folder 'sam' all the systems

save

Permissions

rw → read and write

ro → read only

sync → directly writes to harddisc

async → From buffer to hard disk.

Step⑥ To restart the service

service nfs restart

service nfs status
↓
it display whether it is running or not

showmount -e
↓
export

or

showmount -e 192.168.0.254
↓
nfs server

Clientside

mount <server ip>:<share /mnt

cd /mnt
ls

After showmount mount it

mount -t nfs 192.168.0.253:/var/sameer /mnt

mount

FTP (File Transfer Protocol)

Requirements

① Packages

(i) vsftpd ---------- rpm
---> very secure file transfer protocol Daemon

② Ports No.

(i) 20 ---> To transfer the data

(ii) 21 ---> To make a connection.

(i) nfsd

④ Service

(i) service vsftpd restart

⑤ Main Configuration File

(i) vi /etc/vsftpd/vsftpd.conf

Steps to Configure FTP

Step① Check all the host entries

```
# ifconfig
# ping 192.168.0.0 -b
# vi /etc/sysconfig/network
  NETWORKING = yes
  HOSTNAME = station253.example.com

# vi /etc/hosts
  127.0.0.1   localhost.localdomain   localhost
  192.168.0.253   station253.example.com   station253

# hostname.

# hostname station253.example.com.
```

step② TO Check the Packages

```
# rpm -q vsftpd
```

or

```
# rpm -qa | grep vsftpd
```

To remove the packages

```
# rpm -e --nodeps vsftpd
```

To remove the database

```
# cd /etc/vsftpd
# pwd
# rm -r *
```

step③ To Install the Packages

```
# rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/vsftpd*
# rpm -qd vsftpd | grep conf
```

step④ Go to this file and edit it

Adm # vi /etc/vsftpd/vsftpd.conf

server side

edit it

line no: 12 → anonymous_enable=yes

↓

anonymous means default ftp user

it has two default name they are

① ftp ② anonymous

line No: 15 → local_enable = yes
↓
It means that local users that is server user: can login through ftp.

line No: 18 → write_enables = yes.
↓
write permissions are enable to ftp

line No: 27 → anon_upload_enable = yes
↓
It means anonymous users can uplo

line No: → anon_mkdir_write_enable = yes
↓
It means anonymous user can create directory to a ftp server.

line No: 35 → dirmessage_enable = yes

ex:- #mkdir linux mcse

vi linux/.message
↓ to typed.
WELCOME TO LINUX
[save]

vi mcse/.message
↓ to typed
WELCOME TO MCSE

[save]

Line No: 85 → ftp_banner = welcome to Linux zoom service.

↓

to create some users with passwords and go to client side and access the user.

Line No: 96 → Chroot_list_enable = yes

Line No: 98 → chroot_list_file = /etc/vsftpd.chroot_list

It is used to restricting the user not move in any other part of file system. User has been join into its home directory.

vi /etc/vsftpd.chroot_list

↓

and type 'sam' and save

service vsftpd restart

→ go to the client side and check.

Line No: 107 → userlist_enable = yes

↓

* If uservlist_enable = yes the users in vi /etc/vsftpd.user_list cant login through ftp.

* If uservlist_enable = NO the user in vi /etc/vsftpd.user_list can login throug, ftp.

* If the users name exist in vi /etc/vsftpd.ftpusers then NO-way this user can log through ftp even if in /etc/vsftpd/vsftpd.conf line No: 107 uservlist_enable = yes/NO.

enable = yes.

client side

To download a file

ftp> get <filename>

ex:- ftp> get sam.txt

* you cannot get directories to get only files

To upload a file.

ftp> put <filename>

ex:- ftp> put khaja

* you cannot put directories to put only files.

To download multiple files

ftp> mget * ↵

It is asking which file download.

ex:-
mget sam? Y -> yes means its downloaded

mget khaja? N -> NO means its skipping.

* you cannot uploading multiple files

! clear :- This command is used to clear the screen of ftp server side connection

To check ftp server

server side	client side.
# rpm -q vsftpd	# ftp 192.168.1.10 ↵ (ftp server IP Address)
# cd /var/ftp/pub	ftp> cd pub
# pwd	ftp> ls
# ls	ftp> get sam
# service vsftpd restart	ftp> bye (to exit the ftp server)
# cd /var/ftp	
# ls	

gftp → this is the Graphical mode to configure ftp. command

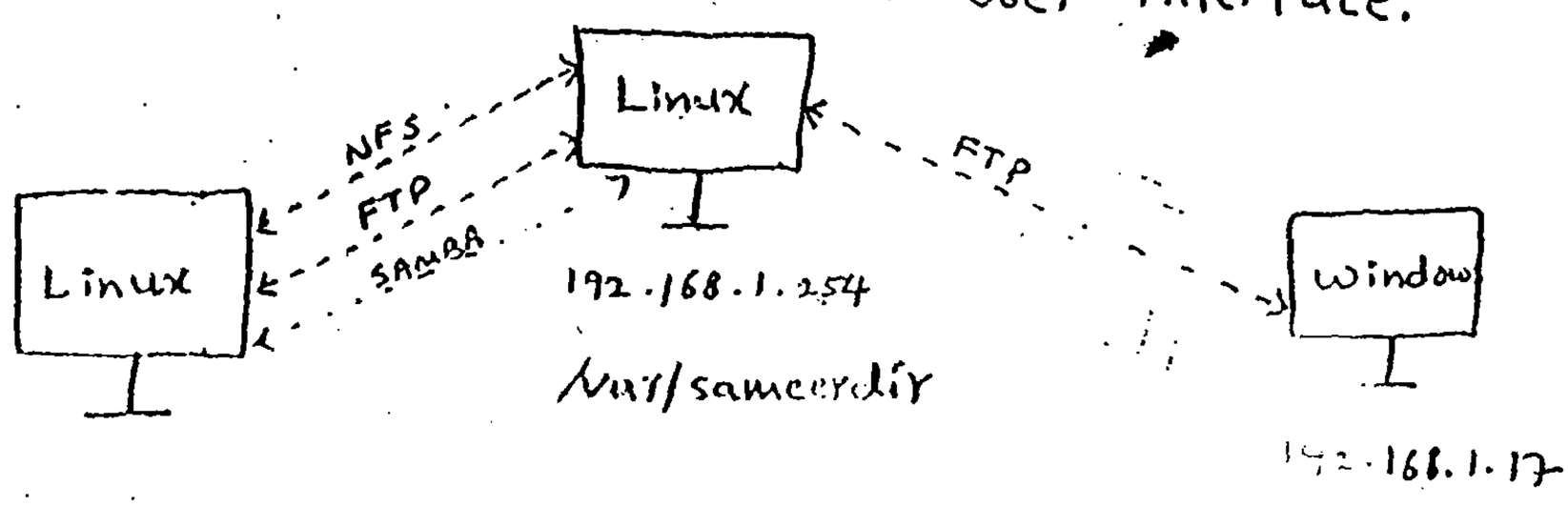
SAMBA SERVER

smb → Server message block

CIFS → Common internet file system

nmbd → Net bios naming daemon

NETBEUI → Net bios User interface.



① Packages

server side

(i) samba ---------- rpm

(ii) samba-client ---------- rpm

(iii) samba-common ---------- rpm

client side

(i) samba-client ---------- rpm

(ii) samba-common ---------- rpm

② Service

(i). service smb restart

③ Main configuration file

(i) vi /etc/samba/samba.conf

Steps to configure SAMBA server

step① Check all the host entries

if config

ping 192.168.0.0 -b

```
# vi /etc/sysconfig/network
NETWORKING = yes
HOSTNAME = station253.example.com

# vi /etc/hosts
127.0.0.1   localhost.localdomain   localhost
192.168.0.253   station253.example.com   station253.

# hostname
# hostname station253.example.com
```

Step② <u>To Check the Packages</u>

```
# rpm -q samba
# rpm -q samba-client
# rpm -q samba-common
      (or)
# rpm -qa samba*
```

<u>To remove the Packages</u>

```
# rpm -e samba --nodeps
# rpm -e samba-client --nodeps
# rpm -e samba-common --nodeps
```

<u>To remove the database</u>

```
# cd /etc/samba
# pwd
# rm -r *
```

rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/samba*

Step④ To create a directory

mkdir /var/sameer

cd /var/sameer

touch a b c d

ls.

Step⑤ Go to Main configuration file and edit it

vi /etc/samba/smb.conf

Global section

(1) workgroup = sameer group

[sameer]

comment = this is my share folder sameer sales Dept

Path = /var/sameer

Valid users = sam khaja

Public = NO

writable = yes

Printable = NO

create mask = 0765

save

service smb restart

In order to share samba share user should have samba Password.

How to create samba password

```
# smbpasswd -a ↵
```

→Type Password:

/etc/samba/smbpasswd → It contains samba Password.

Testing the Samba server

```
# testparm
```

Find all samba server in the network

```
# find smb
```

To display the share in the server

```
# smbclient -L //192.168.1.254
# smbclient -L //192.168.1.254 -N
```
→ (Not asking Password)

```
# smbclient //192.168.1.254/samcer -U khaja
```

samcer ↓ share folder name.

khaja ↓ user name.

LINUX Client

Linux to Linux (Method - I)

```
# findsmb
# smbclient -L //192.168.1.254/ ↵
# smbclient -L //192.168.1.254 -N
```

mkdir /mnt/sambakhaja

mkdir /mnt/sambasam

mount -t smbfs //192.168.1.254/sameer /mnt/samba khaja

-o Username=sam

mount

samba mount //192.168.1.254/sameer /mnt/samba sam

-o username=khaja

WINDOWS Client

Linux to windows.

① Packages

(i) rdesktop ------- rpm

↓

Bring windows Terminal in linux O/S

To install the package

rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/rdesktop* --force

To Remote the windows client

rdesktop 192.168.1.17

↓

windows client IP Address.

rdesktop 192.168.1.17 -f

→ (for full screen)

To check the group

My Network Place → windows Network → Sameergroup

Ist Method

⇒ Start

⇒ select the search option

⇒ select the other search option

⇒ select the computer or People option

⇒ Select A computer on Network

⇒ Give the Linux machine IP address ex: 192.168.1.25

IInd method

vi /etc/samba.conf

edit it

line No: 53 → security = sameer → (its going to direct show the folder).

DNS (Domain Name system/service)

DNS is a centralized database of all host entries. it is used to eliminent the host file from each machine.

It is the Heart of the network.

this DNS in linux is called as Bind service.

BIND stands for: Birkely Internet Name Domain

To Install DNS pkg.

Server side

① Packages

(i) Bind ---------- rpm

(ii) Bind-utils ------- rpm

(iii) Caching-name server ------ rpm

② service

(i) service named restart

③ Main configuration File

vi /etc/named.conf

④ Ports NO

(i) 53

⑤ Database Directory

cd /var/named.

To Configure DNS

step① check all the host entries

ifconfig

ping 192.168.0.0 -b

```
# vi /etc/sysconfig/network
    NETWORKING = yes
    HOSTNAME = station254.india.com

# vi /etc/hosts
127.0.0.1       localhost.localdomain     localhost
192.168.1.254   station254.india.com      station254

# hostname
# hostname  station254.india.com
```

Step(2) To check the packages

```
# rpm -qa | grep bind
# rpm -qa | grep cach
```

To remove the packages

```
# rpm -e bind --nodeps
# rpm -e bind-utils --nodeps
# rpm -e caching-nameserver --nodeps
```

To remove the backup file

```
# rm -r /etc/*.rpm save *
```

TO check all the packages are remove or Not

```
# cd /var/named
```

→ It shows the error, er
means all the packages

rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/bind*

rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/cach*

step④ Go to main configuration File

vi /etc/named.conf

↓

Its will be open a file that is

- named.ca → it contains all root servers
- localhost.zone → Forward lookup zone
- named.local → Reverse lookup zone.

* copy the three zones and paste the bottom of the area in same file.

How to copy the three zones

⇒ Go to the Cursor Position named.ca

⇒ and count the lines to end of the file.

⇒ for ex: 11 lines are there.

⇒ Press 11 and YY → it means 11 lines are copied.

⇒ Go to the cursor position at the end of the file.

⇒ and press 'P' → it means 11 lines are pasted in the end of the file.

*and edit the copied information.

```
zone "india.com" IN {
        type master;
        file "india.for";
        allow-update {none;};
};
```

Forward lookup zone

```
zone "1.168.192.in-addr.arpa" IN {
        type master;
        file "india.rev";
        allow-update {none;};
};
```

Reverse lookup zone.

save

step⑤ To check the Database Directory and copy the created zones

```
# cd /var/named
# ls
# cp localhost.zone india.for
# cp named.local India.rev
# ls
```

vi india.for

edit it

$TTL 86400

@ root

1D IN SOA Station254.india.com. root.india.com.

42 : Serial cd adams

3H : refresh

15M : retry

1W : expiry

1D : minimum

#	1D IN	NS	station254.india.com.
india.com	IN	A	192.168.1.254,
station254	1D IN	A	192.168.1.254
station253	1D IN	A	192.168.1.253
www	IN	CNAME	station254.india.com.

save

vi india.rev

edit it

$TTL 86400

@ IN SOA ~~station254.(india.com)~~ root.india.com.

1997022700 : Serial

28800 : Refresh

14400 : Retry

3600000 : expire

86400 : minimum

Serial IP	IN	NS	station254.india.com.
254	IN	PTR	station254.india.com.
253	IN	PTR	www station253.india.com.

save

254	IN	PTR	station254.india.com.

step⑦ TO restart the service

service named restart

step⑧ Go to DNS information file

vi /etc/resolv.conf

edit it

nameserver 192.168.1.254
nameserver 192.168.1.253

save

step⑨ To check wether it is diging or not

dig station254.india.com

dig -x 192.168.1.254

step⑩ If you give any mistakes to check the commands

named-checkconf /etc/named.conf → To check main configuration

named-checkzone india.com /var/named/india.for

named-checkzone india.com /var/named/india.rev

→ * After using these command it shows any error means you are giving mistakes.

* Its do not shows the error means you giving always ok

/etc/resolv.conf

edit it

nameserver 192.168.1.254

Save

TO check wether it is Pinging or not

Ping station254.india.com

X

TTL :- Its stands for Time to leave

86400 :- Is in a proper state in RAM for 3 Days

Serial :- serial number of master should always be greater than slave, then only slave knows that it has to update its database.

Format of serial number is YYYYmmDD
2006 08 07

Refresh (3H):- slave server refresh is data with master after every 3 Hours.

Retry (15M):- If refresh time is over than slave will try to set connected with master DNS

Expiry (1W):- Slave server Retries to get connected with DNS for 1 weak. after that it assumes that master DNS is fail.

Minimum (1D):- 1 Day is the minimum time a slave server keeps the information in its cach

NS :- NS is the name server

A :- A is the address

Con guration of SLAVE Server

server le

Ma er

step # vi / / named.conf

```
zone ndia.com "IN {
        type master;
        file "india.for";
        allow-update { 192.168.1.253; };

};

zone "1.168.192 in-addr.arpa "IN {
        type master;
        file "india.rev";
        allow-update { 192.168.1.253; };

};
```

save

step TO chec the database directory and modify that

```
# cd var
# ls ld named
# cho n named named
# ls -ld named
# ch d 775 named
# ls
# cd named
```

Step TO restart the service

service named restart

Step Go to the created zone file

vi india.for

edit it
to add this one.

@ 1D IN NS station253.india.com.

Save

Step To restart the service

service named restart.

Step Go to the Main configuration file

vi /etc/named.conf

edit it

options {

directory

forwarders {192.168.1.254; 192.168.1.253;};

Save

Step TO restart the service

service named restart

Client side

Slave

step #vi /etc/named.conf

```
zone "india.com" IN {
        type slave;
        file "forindia";
        master {192.168.1.254;};
};

zone "1.168.192.in-addr.arpa" IN {
        type slave;
        file "revindia";
        master {192.168.1.254;};
};
```

Save

step To check the database directory and modify that

```
# cd /var
# ls -ld named
# chmod 775 named
# chown named named
```

step Go to the created zone file

```
# vi forindia
```

→ to get a replication

httpd -> hyper text transfer Protocol daemon

It is called APACHE

Windows	Linux/Unix
IIS	Stronghold, Tux, Resin, Zeus, Sunstar } APACHE

* In windows IIS is similar to APACHE.

From server side Master

step

vi india.for

$TTL 86400

www IN CNAME station253

Alias name

step

service named restart

From client side slave

dig station254.india.com

or

dig www.india.com

To create one more zone with different name

```
# vi /etc/named.conf
```

↓

to create ocean.for

ocean.rev.

save

and copy the created zones

```
# cp india:ca ocean.for
```

* If you are already create a zone just change the zone name particularly.

```
# vi /etc/named.conf
```

~~→ in the command~~

→ in the executive mode.

```
: 1, $s/india/ocean/g ↵
```

old zone — new zone.

═══X═══

To Configure WEB server

Requirements

① Packages

(i) httpd -------- rpm

(ii) httpd-devel -------- rpm

devel

② Ports NO

(i) 80

③ service

vi /etc/httpd/conf/httpd.conf

Configure web server

Step① Check all the host entries

ifconfig

ping 192.168.0.0 -b

vi /etc/sysconfig/network.

NETWORKING = yes

HOSTNAME = www.india.com

vi /etc/hosts

192.168.1.253 www.india.com station 253

192.168.1.253 www.ocean.com station 253

hostname

hostname www.india.com

Step② TO check the Packages

rpm -qa | grep httpd

Step③ TO remove the Packages

rpm -e httpd --nodeps

rpm -e httpd-devel --nodeps

Step④ TO Install the Packages

rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/httpd* ...

step⑥ To create a HTML Page

```
#vi india.html
<html>
<body bgcolor=yellow>
<h1> WELCOME TO LINUX INDIA.COM </h1>
<marquee><h6> WELCOME TO LINUX </h6></marquee
</body>
</html>
```

save

step⑦ To restart the service

```
# service httpd restart
```

step⑧ ⇒ open the Mozilla

⇒ and access the http://www.india.com

==X==

Virtual section

step① Go to Main configuration File

```
# vi /etc/httpd/conf/httpd.conf
```

↓

at the end of the file. edit it.

```
Name Virtual Host *:80

<Virtual Host *:80>

    Server Admin root@india.com
    Document Root /var/www/html/india
    Server Name www.india.com
```

} Name Base

Server Admin root @ ocean.com

Document Root /var/www/html/ocea

Server Name www.ocean.com

Directory Index ocean.html.

name bas

</virtual Host>

<virtual Host .192.168.1.154:80>

Server Admin root @ sky.com

Document Root /var/www/html/sky

Server Name www.sky.com

Directory Index sky.html

IP bas

</virtual Host>

Listen 0.0.0.0:2000

<virtual Host 192.168.1.154:2000>

Server Admin root @ star.com

Document Root /var/www/html/star

Server Name www.star.com

Directory Index star.html

port Base

</virtual Host>

Save

Step 2 Create four directories and write the HTML program :

→ to create directories under /var/www/html

```
# cd /var/www/html

# mkdir india ocean sky star

# cd india

# vi india.html

<html>
<body bgcolor = red >
<h1> wecome to www.India.com </h1>
<marquee> <h6> WELCOME TO LINUX </h6> </marquee>
</body>
</html>
```

save

```
# cd ↵

# cd ocean

# vi ocean.html

<html>
<body bgcolor = yellow>
<h1> welcome to www.Ocean.com </h1>
<marquee> <h6> WELCOME TO MCSE </h6> </marquee>
</body>
</html>
```

```
# cd sky
# vi sky.html
    <html>
    <body bgcolor = Megenta>
    <h1> welcome to www.sky.com </h1>
    <marquee> <h6> WELCOME TO CCNA </h6>
    </body>
    </html>
```

save

```
# cd ↵
# cd star
# vi star.html
    <html>
    <body bgcolor = orange>
    <h1> welcome to www.star.com </h1>
    <marquee> <h6> WELCOME TO CCNP </h6> <in
    </body>
    </html>
```

save

Step③ Create the IP with

```
# netconfig --device eth0:0
# service network restart
# chkconfig --level 35 httpd on
# service httpd restart.
```

Step 4 ⇒ open the mozilla.

1 ⇒ Type the www.india.com

or

2 ⇒ Type the www.Ocean.com

↓

Its will be open the "india.com" or "ocean.com" web sites.

3 ⇒ Type the 192.168.1.154

↓

Its will be open the "sky.com" web site.

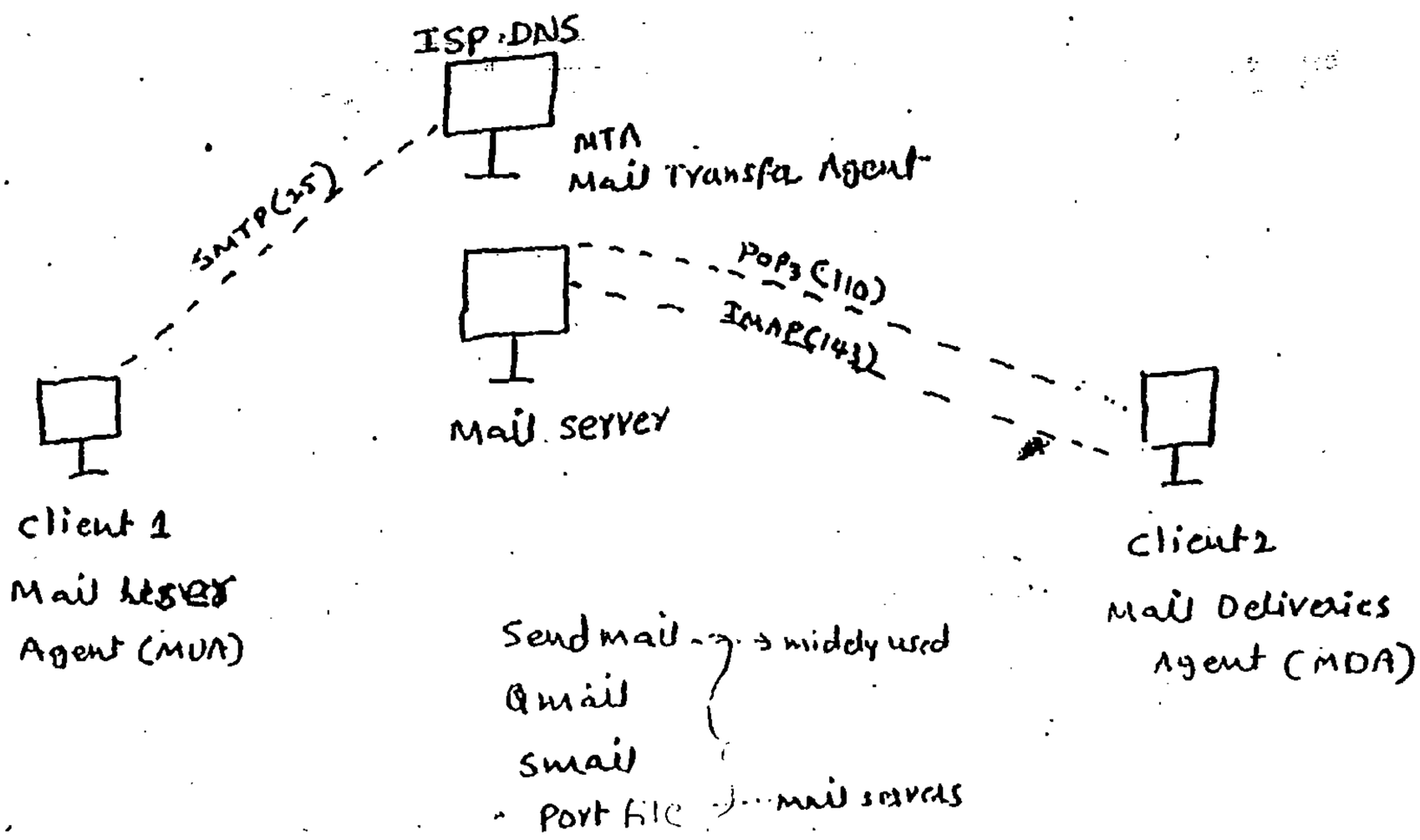
4 ⇒ Type the 192.168.1.154:2000

↓

Its will be open the "star.com" website.

═══X═══X

[MAIL server]



```
# cat /etc/services | grep 143
# cat /etc/services | grep 110
# cat /etc/services | grep 25
```

Go to this file

```
# vi /etc/named.conf
# cd /var/named
# vi india.for
```

edit it

```
$TTL    86400
@               1D IN SOA   station254.india.com
                    42      : serial
                    3H      : refresh
                    15M     : retry
                    1W      : expiry
                    1D      : minimum.

@               1D IN NS    station254.india.com
mail            1D IN A     192.168.1.23
                1D IN MX 4  mail.india.com
www             1D IN CNAME station253
```

mail exchange

You have to four mails so type 4 or you have to 5 mails so type 5 it is a option

save

TO Check

dig mail.india
(or).
dig -t MX mail.india.com

==x==

TO Configure MAIL server

Requirements

① Packages

(i) sendmail ------ rpm

(ii) sendmail-cf ------ rpm

(iii) m4 ------ rpm
↓
micro compiler

② Ports no

(i) 25 ----> SMTP

(ii) 110 ----> POP3

(iii) 143 ----> IMAP

③ service

(i) service sendmail restart

④ Main Configuration File

(i) # vi /etc/mail/sendmail.mc ----> use first

(ii) # vi /etc/mail/sendmail.cf ----> use second

step① Check all the host entries

```
# ifconfig
# ping 192.168.0.0 -b
# vi /etc/sysconfig/network
    NETWORKING = yes
    HOSTNAME = mail.india.com
# vi /etc/hosts
127.0.0.1     localhost.localdomain     localhost
192.168.1.23  mail.india.com            station 23
# hostname
# hostname mail.india.com
# vi /etc/resolv.conf
    nameserver 192.168.1.254
```

save

step② To check the packages

```
# rpm -qa | grep send
# rpm -qa | grep m4
```

To remove the packages

```
# rpm -e sendmail --nodeps
# rpm -e m4 --nodeps
```

TO Check all the Packages remove or not

cd /etc/mail

→ It shows an error. error means all the Packages are removed.

Otherwise. use this command.

rm -r *

step③ TO [illegible] Packages through nfs

mount -t nfs 192.168.1.15:/var/ftp/pub /misc

mount

cd /misc/RedHat/RPMS

rpm -ivh sendmail* m4* --aid.

step④ Go to Main configuration file

vi /etc/mail/sendmail.mc

edit it

line No: 84.

dnl # DAEMON-OPTIONS ('Port=smtp, Addr=127.0.0.1, Name=MTA') dnl

line No: 122.

LOCAL-DOMAIN ('mail.india.com') dnl

Save

m4 /etc/mail/sendmail.mc > /etc/mail/sendmail.cf

step⑤ TO restart the service

useradd sam

useradd khaja

useradd mohd

Passwd sam

Passwd Khaja

Passwd mohd.

To see these users

ls /var/spool/mail.

Step② To send the mail

su - sam

mail sam@mail.india.com

subject : from sam to khaja

Hai khaja How are you

I am fine I hope

your also fine

. ↵ -----> . means to end of the message

CC: mail khaja@mail.india.com

To see the message khaja user

su - khaja

you have 1 message

1 sam@mail india.com

→ Press 1 to show the message

step⑤ Go to Main Configuration file

vi /etc/httpd/conf/httpd.conf

Section 1: Global section → It contain Global Parameeter

Section 2: Main section → To configure a single web server on a single machine, configure it under main section.

Section 3: virtual section → To configure multiple sites on a single machine, configure it under virtual section.

Note:- Main section and virtual section should not be configure together.

Server Admin	root@india.com
Server name	www.india.com
Document root	/var/www/.html
Directory index	india.html.

↓

..nomin

Line NO: 252 copy this line and paste the bottom of the line.

edit it

ServerAdmin root@india.com

→ Press Esc

/ server name

Line NO: 267 copy this line and paste the bottom of the line.

edit it

Servername www.india.com:80

→ Press Esc

/ Document root

Line No: 284 copy this line and paste the bottom of the line.

edit it

Document root "/var/www/html"

→ Press Esc

/ Directory Index

Line NO: 396 copy this line and paste the bottom of the line

edit it

Directory Index India.html index.html.var

Save

Step (B) TO Install the other packages to se message in GUI mode ie Mozilla

```
# cd /misc/RedHat/RPMS

# rpm -ivh httpd* --aid
# rpm -ivh perl* --aid --force
# rpm -ivh curl* --aid --force
# rpm -ivh Imap* --aid
# rpm -ivh Php* --aid
# rpm -ivh squirrelmail-1.2.11-1.noarch.rpm
```

Step (5)

```
# chkconfig --list
# chkconfig imap on
# chkconfig imaps on
# chkconfig ipop2 on
# chkconfig ipop3 on
# chkconfig pop3s on.
```

Step (6) To restart the services

```
# service xinetd restart
# service httpd restart
```

Step (11) Ho to run it in Mozilla

⇒ open a Mozilla or type # mozilla &
⇒ and access
⇒ http://...

NIS (Network Information Service)

* NIS was introduced by SUN Micro System
* Actually NIS is called as "yellow page"
* SUN Microsystems was renamed to NIS.

Server side Requirements

① **Packages** (NIS server + port map + NFS)

(i) ypserv ---------- rpm
(ii) ypbind ---------- rpm
(iii) yp-tools ---------- rpm
(iv) portmap ---------- rpm
(v) nfs-utils ---------- rpm

② **Ports No**

There is No port No.

③ **Services**

(i) # service ypserv restart
(ii) # service yppasswdd restart
(iii) # service portmap restart
(iv) # service nfs restart

④ **Main configuration file**

(i) # vi /var/yp/Makefile

⑤ **Main Database Directory**

(i) # vi /var/yp

steps to configure NIS

step① Check all the host entries

```
# ifconfig
# ping 192.168.0.0 -b
# vi /etc/sysconfig/network
  NETWORKING = yes
  HOSTNAME = www.sameer.com
  NISDOMAIN = sam
```

* The fully qualified Domain name and NIS Domain name. ELAT Names are two difference names. There is no intigration between DNS naming conventions and NIS Domain name.

```
# vi /etc/hosts
127.0.0.1        localhost.localdomain        localhost
192.168.1.254    www.sameer.com               sameer.
# hostname
# hostname www.sameer.com
# nisdomainname
# nisdomainname sam
```

step② To check the packages

```
# rpm -q ypserv
# rpm -q yp-tools
# rpm -q ypbind
# rpm -q nfs-utils
# rpm -q portmap
```

```
# rpm -e --nodeps ypserv
# rpm -e --nodeps yp-tools
# rpm -e --nodeps ypbind .
# rpm -e --nodeps nfs-utils
```

*. dont remove portmap

step③ To remove all Users and Groups

⇒ Startup

⇒ select system settings

⇒ select Users and groups.

⇒ delete all users and groups.

step④ To ~~Install~~ remove the Backup files

```
# cd /var/lib/nfs
# cd /var/yp
# ls
# rm -r *
```

step⑤ To Install the Packages

```
# rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/yp*
# rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/nfs
```

step⑥ Go to main configuration file

vi /var/yp/Makefile

edit it

Line No: 109
110

Passwd group hosts \

rpc services netid protocols mail \

step⑦ To restart the service

service ypserv restart

step⑧ To create NIS database

/usr/lib/yp/ypinit -m

master

Press ctrl+D

say Y

step⑨ To restart the service

service yppasswdd restart

step⑩ Go to main database directory and create some users

cd /var/yp

ls

useradd sam

useradd Khaja

Passwd sam

Passwd Khaja.

step⑪ # Make → To shows the files

rrpasswdd restart

step (13) Exporting the users to home directory

vi /etc/exports

edit it

/home 192.168.1.0/255.255.255.0(rw, sync)

save

step (14) restart the service

service nfs restart

step (15) To show wether it is exporting or not

showmount -e 192.168.1.254

exports

This command is shows the exporting information

To show the rpc information

rpcinfo -p

Client side Requirements

(Auto-mounting (home directory)

① Packages

(i) ypbind ------- rpm

(ii) yp-tools ------- rpm

(iii) autofs ------- rpm

② service

(i) service ypbind restart

(ii) service autofs restart

③ Main configuration file

(i) # vi /etc/auto.master

(ii) # vi /etc/auto.misc

Steps to configure NIS

Step① Check all the host entries

```
# ifconfig
# Ping 192.168.0.0 -b
# vi /etc/sysconfig/network
  NETWORKING = yes
  HOSTNAME = www.sameer.com
  NISDOMAIN = sam

# vi /etc/hosts
127.0.0.1      localhost.localdomain   localhost
192.168.1.254  www.sameer.com          Sameer
# hostname
# hostname www.sameer.com
# nisdomainname
# nisdomainname sam
```

→ To make this machine as a client for the domain.

select

[*] Use NIS

Domain : Sam

Server : 192.168.1.254

→ Next

→ OK.

Step③ To restart the service

service ypbind restart

Step④ To show the client is connected to which

ypwhich ↵

↓ It is shows the "www.Sameer.com"

Step⑤ Automounting

vi /etc/auto.master

edit it

/home /etc/auto.misc -- timeout = 60

Save

vi /etc/auto.misc

edit it

* -fstype=nfs 192.168.1.254:/home/&

Save

step⑥ To restart the service....

service autofs restart

step⑦ To check wether it is mounting or not

mount

→ It is shows the mount point from client home directory to server home directory.

step① Log in as a User

su - sam
pwd

Create some files

touch a b c

⇒ To check the server side

ls /home/sam

→ you got a b c files.

== X ==

BACKUP

Backup

tar :- This command is used to take a backup.

Syntax:-

tar <options> filename.tar <source>

Options

-c → to create the backup

... of content

-x → extract

-z → zip.

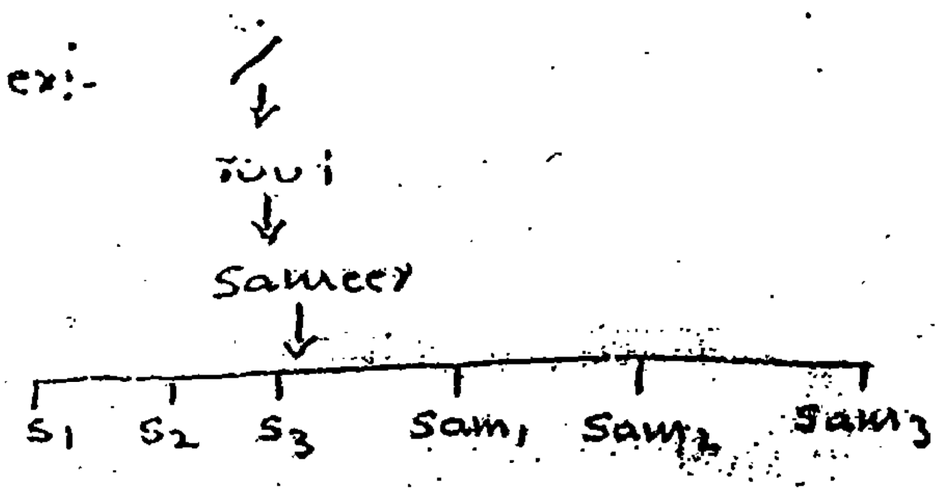
To create a directory under root

mkdir sameer

cd sameer

touch s1 s2 s3; mkdir sam1 sam2 sam3

ex:-



step

cd /root/sameer

pwd

tar -cvf abc.tar * → with .tar extension

or

tar -cvf abc.tar s*

or

tar -cvf abc.tar s1 s2 s3 sam1

ls

step # tar -cvf xyz * → without .tar extension

tar -tvf abc.tar.

To Extract a file

```
# tar -xvf abc.tar
# ls
```

Tape drive

```
# tar -cvf /dev/ht0/abc.tar *
# file *
```

→ It is display to what type of file actually.

To create a zip file

```
# tar -cvzf abc.tar.gz *
```

To unzip the file (Ist method)

```
# mkdir /root/sameer/khaja
# tar -xvzf /root/sameer/khaja/abc.tar.gz
```

→ It is extract to khaja directory.

To see

```
# cd /root/sameer/khaja
# ls
```

(or)

```
# tar -xvzf abc.tar.gz
```

→ It is extract to same location.

To unzip the file (IInd Method)

```
# gzip abc.tar
```

→ This command is used to zipping

abc.tar.gz → This command is used to unzipping

→ It is shows to abc.tar .

TO search the particular file or directory

```
# find /root -name sameer
# find /root/sameer
# find /root/sameer | cpio -O > sam.cpio
```

copy from input to output

```
# cpio -i < sam.cpio
```
→ To extract the file.

 # cpio :- This command is used to take the backup but while restoring it basis of files and directories at the original location.

== x ==

DHCP

(Dynamic Host configuration Protocol)

server side Requirements

① Packages

(i) dhcp - - - - - - - - - rpm

② service

(i) # service dhcpd restart

③ Main configuration file

(i) vi /etc/dhcpd.conf

Steps to configure DHCP

step① To check the package

#rpm -qa | grep dhcp.

To remove the package

#rpm -e dhcp

To install the Package

step② #rpm -ivh ftp://192.168.1.15/pub/RedHat/RPMS/dhcp*

To create a sample file

cp /usr/share/doc/dhcp-3.0pl1/dhcpd.conf.sample

step③ # vi /etc/dhcpd..conf

edit it

Option routers 192.168.1.250;

Option subnet.mask 255.255.255.0;

Option nis-domain "sam"

Option domain-name "someer.com"

Option domain-name-servers 192.168.1.100;

lineNO: 21 ⇒

range dynamic-bootp 192.168.1.150 192.168.1.160;

Save

step② TO restart the service

service dhcpd restart.

Client side Requirements

① Packages

(i) dhclient ..... rpm

② Service

(i) service dhcp restart

steps to configure

step① # net config

⇒ select dhcp

⇒ Give ok.

~~# net config~~

service network restart

dhclient

Getting a MAC Address

ping 192.168.0.0 -b

arp -a

Copy the MAC Address

arp -a > abc

edit it
Go to bottom of the file.

(server side)

```
option host-name "www.sameer.com";

hardware ethernet 00:13:20:37:08:0D;
fixed-address 192.168.0.120;
```

service dhcp restart.

client side

nisdomainname

vi /etc/resolv.conf → to see this file and replication.

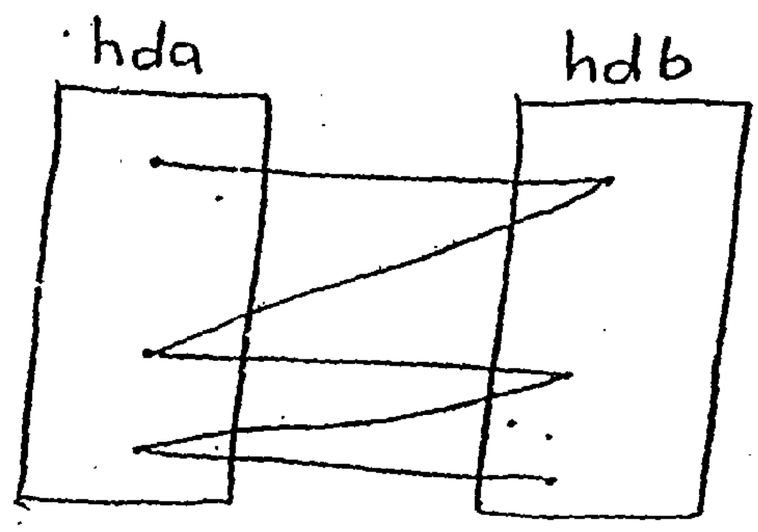
vi /etc/sysconfig/network

dhclient

... the client system

* In Linux we are create 63 Partitions

① RAID 0 : (stripping)

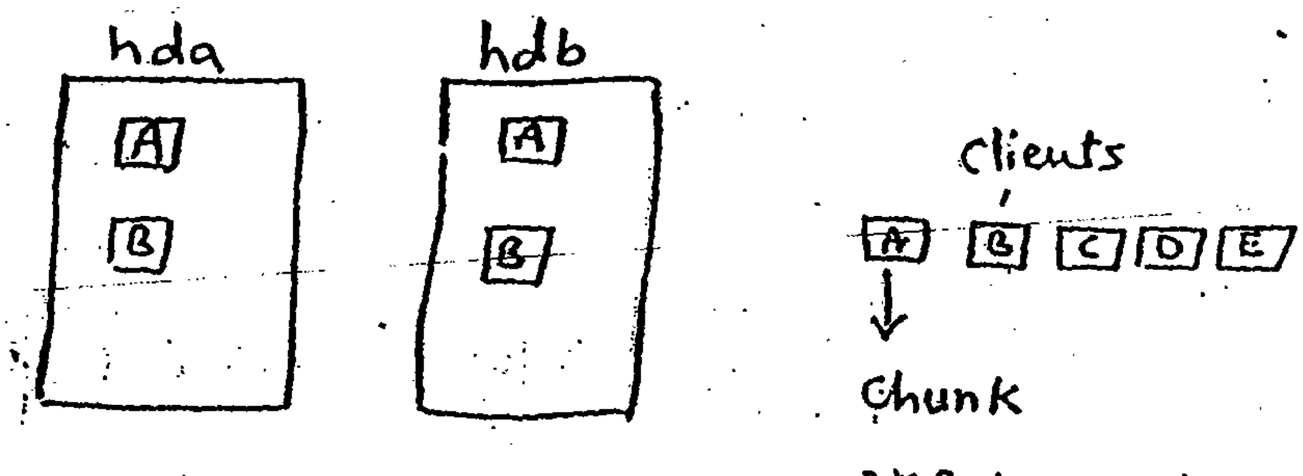


Required :- minimum 2 Hard disks.

Advantage :- Volume can be increase → No of hardd

Disadvantage :- No Fault tolerence is their

② RAID 1 : (mirroring)



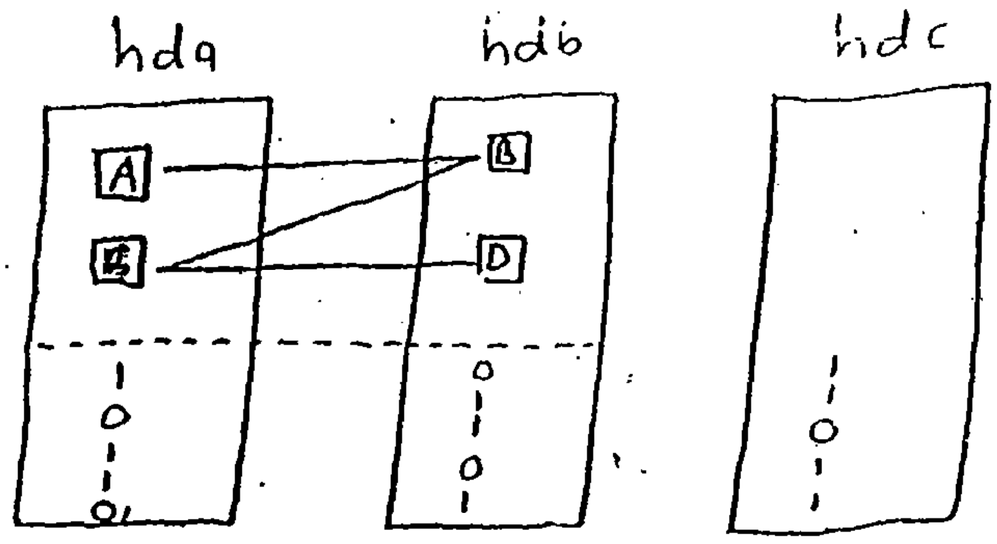
* copy of the same data in other hard disk :

Required :- Minimum 2 Hard disks.

Advantage : No Fault tolerance.

Disadvantage :- (i) Expensive
(ii) 50% volume is wasted.

③ RAID 4: (stripping with single Parity)



EX-OR-gate

A	B	A&OR B
0	0	0
0	1	1
1	0	1
1	1	0

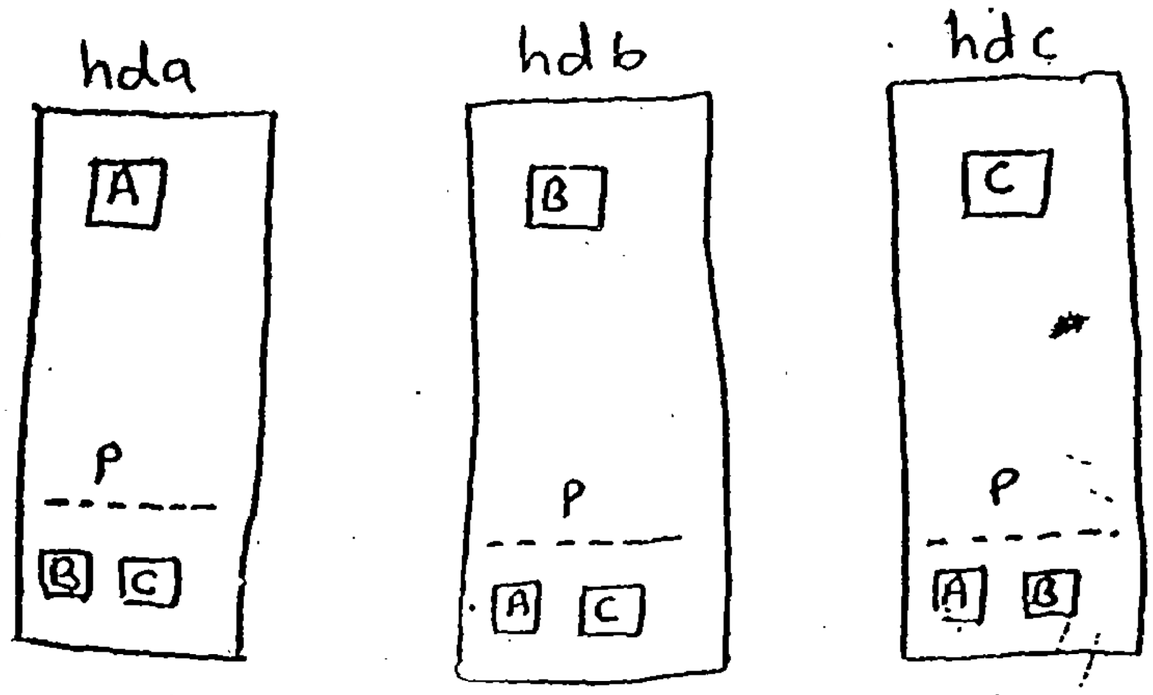
Required:- minimum 3 Hard disks

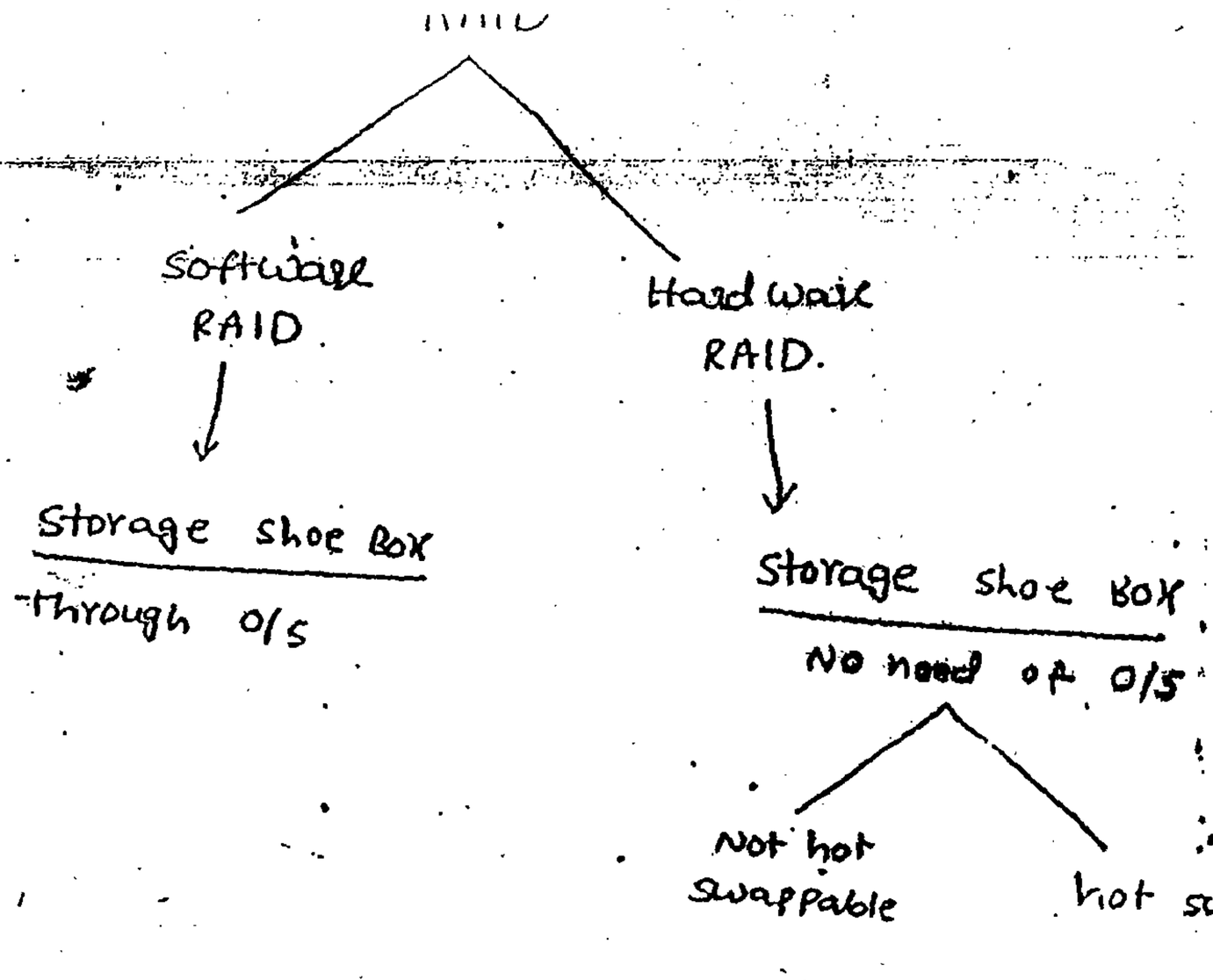
Advantage:- 1) No Fault tolerance
2) Not-expensive

Disadvantage:- The Parity disk becomes the bottel neck of this algorithm. that is the load on this hard disk is always more in comparison to other hard disk.

Total volume used $\frac{2}{3} \times 100 = 66.66\%$

④ RAID 5: (stripping with Equal Parity)





TO check the Package

```
# rpm -qa | grep raid
```

To display the files on this Package

```
# rpm -ql raidtools.
```

Main configuration file

```
# vi /etc/raidtab.
```

copy the sample file

```
# cp /usr/share/doc/raidtools-1.00.3/raid5.conf
                                  /etc/raidtab
```

fdisk -l

fdisk /dev/hda

→ create some partitions

⇒ partprobe.

Go to the Main configuration file

vi /etc/raidtab

edit it

device /dev/hda 9
raid-disk 0

device /dev/hda 10
raid-disk 1

device /dev/hda 11
raid-disk 2

save

mkraid -R /dev/md0

lsraid -P /dev/md0

cat /proc/mdstat
cat /proc/mdstat
cat /proc/mdstat

} Use this command three times wether it is three hda partitions.

Mounting and Formating

mkdir /mnt/samdir

mkfs.ext3 /dev/md0

mount /dev/md0 /mnt/samdir

→ (Braking of password)

shutdown -h now → This command is going to shutdown

shutdown -r now → This command is going to shutting down and reboot.

⇒ Grub, screen (Blue screen)

⇒ Press 'e'

⇒ select the second line

⇒ Press 'e'

⇒ give space and type '1'

⇒ Enter.

⇒ Press 'b'

⇒ You get single user mode in the mode

⇒ type # passwd ↵

Enter new password: ****** Type the new password

Assigning Grub Password

⇒ Go to single user mode.

init 1

⇒ type

grub-md5-crypt >> /boot/grub/grub.conf ↵

→ press ↵

→ type password

→ press ↵

→ type password

→ press ↵

vi /boot/grub/grub.conf

edit

→ copy the password in the boot line and paste the.

splashimage = (hd0,0) /grub/splash.xpm.gz

Password --md5 $1$0Rt021$ ..... → Password.

title Red Hat Enterprise Linux ES (2.4.21.0 GL).

Recovering the password when grub as well as root

→ take the Red Hat o/s first CD.

→ Boot with first (1) CD.

→ we will get boot prompt

→ boot: linux rescue ↵

→ chroot /mnt/sysimage → [ue window]

chroot /mnt/sysimage ↵

mount

passwd.

type new password.

****

****.

TO Remove the grub password

→ go to this file.

vi /boot/grub/grub.conf

edit it.

password --md5 1 OR ---------- → password.

↓

Just assign the # symbol to remove it.

Installing Grub boot loader

→ same steps are similar to remove password.

chroot /mnt/sysimage.

grub-install /dev/hda

rpm -vv --rebuilddb

↓

It is rebuilds the rpm database.

boot: linux ks=nfs:/192.168.0.15:/var/ftp/pub/ks.cf

or

boot: linux ks=ftp:/192.168.0.15/pub/ksf.cfg

creation of kikstart file

→ startup
→ select system tools
→ select kikstart

} GUI mode

or

#, redhat-config-kickstart & ↵

↵

ls ks*
ls -l ks*
cd /var/ftp/pub
ls -i ks*
chmod 777 ks*

} Text mode.

/var jobs

crontab -e
edit

edit it

* * * * *
minutes, Hours, days 1-31, months 1-12, weeks 0-7

command / script

save

ex:- 28 16 * * * tar -cvf /tmp/test.tar /root/test
dir dir

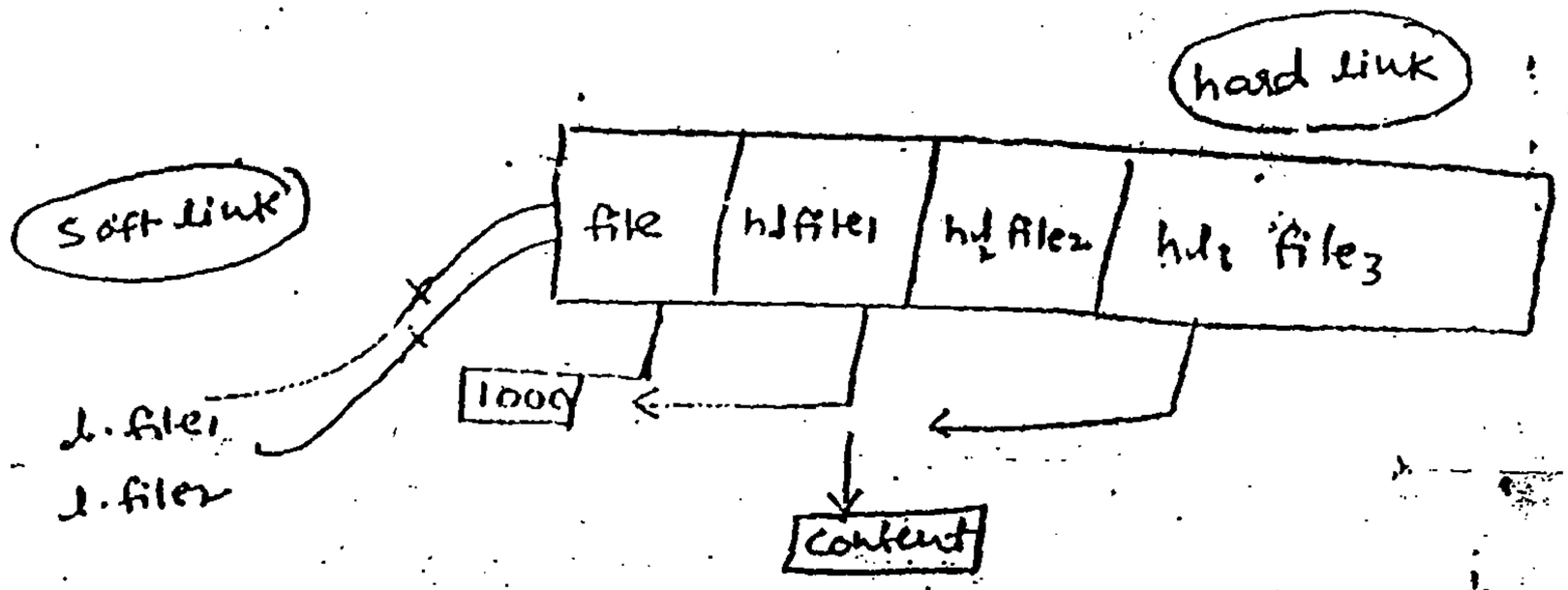
ex①:- # vi sameer.md
edit
cp -r /root * /var/tmp
chmod 777 sameer.md
crontab -e
33 16 * * * tar -cvf /root/sameer.md
16 * * * tar -cvf /sbin/shutdown -h now

Links are a shortcut to a files on a directory. It is useful when you go for scripting in order to share common code.

Links are of two types

① soft links

② Hard links.



soft links	Hard links
• soft links can be created on files as well as directories	• Hard links can only in created on files.
• whenever a soft link is created a new inode will get generated	• whenever a hard link is created the inode value is only 1.
• soft links can be spanned across the partition	• Hard link cannot be spanned across the partition that is Hard links can be created only on that partition.

Soft links

ex:- Create some directories

```
# mkdir -p zoom/india/ap
# cd zoom/india/ap
# pwd
# cat > file1
  This is my first file
  my name is sameer
  save
# mkdir sam
# ll
# touch a b c
# ls
# cd  → come to root directory
# ln -s zoom/india/ap/file1 slinkfile1   (file name)
# ll
# cat slinkfile1
  This is my first file
  my name is sameer.
```

↓

* actually this file path is zoom/india/ap/file1.
* actually open this file is # cat zoom/india/ap/file1

but

* TO open by the link # cat slinkfile1.

directory

ln zoom/india/ap/sam hardlink.

↓

It gots some error:-

" Hard link not allowed for directory.

Permission

Group ID:-

Group ID's are set on the directories so that what ever the resources are created by any users by default those resources groups will be the Parent directories group.

```
# mkdir super
# cd super
# mkdir satyam
# chmod 777 /root
# cd /root
# chmod 777 super
# cd super
# chmod 777 satyam
```

```
# groupadd satyam
# chgrp satyam satyam/
# useradd syu1
# useradd wipro
# cd satyam
# su syu1
# touch f9
```

*you will get the Parent directory group name on all resource.

*you will not result when you set group ID.

Setting Group Id

GUI mode

⇒ Go to the directory

⇒ Right click on it

⇒ select properties

⇒ and set gid

userid = 4
groupid = 2
stickly = 1

Group ID

```
# cd /root/super
# ls
# chmod g+s satyam
# chmod g-s satyam
```

} symbolic

or

```
# chmod 2777 satyam
```

} Numeric

gid

```
# ls -ld satyam
```

UserId

Userid is used to allow users some specific commands.

ex:- ping , fdisk

```
# where is ping
# /bin
```

```
# chmod u+s ping
# chmod u-s ping
```
} symbolic

or

```
# chmod 4755 ping
# chmod 0755 ping
```
} numeric

Stickbyid

Stickbyid are set on the directories so that a user can only delete is own file not others.

```
# mkdir -p /root/super/wipro
# cd /root/super
# chmod 1777 wipro
```

or

```
# chmod 0777 wipro

# chmod +t wipro
# chmod -t wipro

# cd wipro
```

→ create some files

→ and try to access.