Differnet flavours of linux:

* Redhat (RHEL) - owner is IBM . for testing purpose he will use centos once it is success then only he will implement on Redhat .centos used for testing purpose.
* Centos
* Fedora
* Ubuntu
* Solaris
* IBM linux.
* Oracle linux.

IN Rhel we have 8 os versions.

* RHEL 5 - kernel version – 2.6.18
* RHEL 6 - Kernal version --2.6.32
* RHEL 7 -- 3.10
* Latest is RHEL – 8 -- 4.14

To know RHEL version

Uname -a To see all information

( a means all ) -- displays entire data ,, os version , ip address , kernel , along with 64 bit or 32

To know os version

#Uname -r – r means run time environment

# Sudo su - to become as a root

# ls -l --ls means list l means long list

If permissions starts with d then it is directory

If permissions starts with – then it is file

# touch ravi

# mkdir dhoni (**To create directory )**

# Cd dhoni/ - we are in dhoni now, **cd** is to enter in to directory

# Pwd – where we are now

# ls -l -- prints the content randomly

# ls -lhrt -- recently created will be at bottom ---- h means human redable format., r – means revers, t- time stamp

Cd ..

If we want to add some data :

vi ravi

I – insert mode

ESC

Wq

Should not use ! while changing configuration files, it wont show the errors

Cat ravi - to display the content

> Ravi -- erases all the data in ravi

For every server there are mandatory things ip and hostname:

* To know ip:

If config -a

Ip a

* To know hostname

# Hostname

# Tail -3 filename – display last 3 lines

# Tail -- by default it displays 10 lines

To display top content of file

# Head -5 ravi

# Head filename

Less ravi or more ravi -- to see content of file page by page or line by line

# Id – with which user u logged in

# Who am I - with which user u logged in

Su - means switch user

Useradd rakesh

Su rakesh -- it wont change ur present working directory

Exit

logout

Su -ravi - the present working directory will change

Opt belongs to root

logout

Sudo su - -- now you became as root user (Sudo – switch user do)

How to start service

Service sshd status

Service sshd start

Service sshd stop

* If we want changes permenently do changes in configuration files

What is diff b/w ssh and telent:

* ssh username@ipadress --- connecet to the server ex: ssh root@ipadress
* If we want to connecet to another server then it will expect password of that server.
* Ssh encrypts the password, telenet wont encrypt the password. -----------

Port NUBERS:

20 – for FTP - (data connection establish)

21 – for FTP – ( transfer the data )

22 – for ssh

23 – for telenet

25 – for smtp

53 – DNS

67 - DHCP

80 - http

443 - https

2049 – for NFS ( network file system)

123 – NTPD – network time protocol ( if many servers are running they need to run on same tme)

143 – for IMAP

3306 – for MYSQL

How to copy a file?

* Cp source destination

If you want to tranfer a file or directory from one server to other

# scp source destination (SCP - secure copy)

Lets say lapgty01:- contains /home/ravi

lapgty02:/tmp -- there is tmp folder , if u want to copy from ravi to tmp then use below command

After loggin to server - lapgty01

# scp /home/ravi lapgty02:/tmp ( lapgty02 – it is a server

# rsync : it copies only modified data where as SCP copies the entire data.

**Standard file system:**

**What ever we do it must be stored under this, these are the fixed file system:**

**Thse are Default os file systems :**

/ --

/boot -- kernel info is saved under /boot

/tmp

/usr

/var

/home

/opt

# du -sh -- (du - diskusage s- size h – human readable format ) - to check diskusage

# du -sm -- display in MB

# du – sg

How to see the mouted file system:

**# df -h ( d**isk file system in human readable format)

# du -hp ( files system details)

# du -sh \* | tail ( disk usage details)

Different ways to shut down the server:

* Poweroff
* Halt
* Shutdown -h 0
* Init 0

Different ways to reboot the server:

* Reboot
* Shutdown -r 0
* Init 6

**Rename the file name :**

# mv vira virat --- mv is the command to rename the file name vira is already wrong existing file name ,, virat is the new command.

**Configuration file of ssh:**

* Cat /etc/ssh/sshd\_config
* How can we restrict root user to login – yes/no
* Click no

If a line starts with # then it is commented .

To look for a particular word or file we use GREP command

cat ravi | grep -i DHONI -- i is to ignore case sentive

# cat ravi | egrep -i "ravi|virat" ---to search more than one word we use egrep,

Permissions and owner ship:

-rw- r-- r--

r – 4 - read

w – 2 - write

x – 1 - execute

dir – 755 default permission for newly created directory

file – 644 default permission for newly created file

1. owner 2)group 3) others

I want to change permissions .

Chmod -R 700 /root/dr

To change ownership

Chown ravi:root dr -- to change owner

Chown :ravi dr --- to change group

Techmint ,greekdiary, nixcraft -- for linux.

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**User management:**

In real time 2 users :-

Local users

Domian users : create users give credintails we can login

LDAP : create users give credintails we can login.

*Config file for user management:-*

* **/etc/passwd** - contains user information, Total 7 fields are there in this file

ravi:x:1001:1001::/home/ravi:/bin/bash

1st field is username

2nd field is x -- user called hari we haven’t set pass , I set the password , when u set pass , kernel encrypt pass and saved in etc shadow file

3rd - 1001 - userid

4th - 1001 – Gid – group id

5th field is comment

6th is home directory of user

7th is shell - 3types of shells – csh , ksh, bash -- most of the people uses bash coz user friendly.

# useradd -u 503 -g 503 -s /bin/bash -c "dba" -d /opt/kalyany kalyan

Kalyan came and asked to change some things ,

Like comment , and so then

Usermod -d /home/kalyany kalyan --- now we changed directory.

Usermod -s /bin/ksh -c “devops” kalyan

Cat /etc/password |grep kalyan

I created user how to know user created or not ?

* Useradd Lokesh
* Id Lokesh -- by using id command we come to know
* To set passwd: useradd Lokesh
* passwd -S Lokesh - we can see password status (-s means status) -- it shows PS(password set) or ( LK – means locked )
* - userdel username – (to delete a user)
* Even though it is deleted home directory exists – to check ( ls -ld /home/Lokesh)
* userdel -rf Lokesh - to delete along with home directory
* **/etc/shadow** -if we set password then it saves in shadow file
* $1 -MD5
* $5 – SHA256
* $6 – SHA512

Lokesh: .D/:18301:m:M:w:i:E

m- min nof days

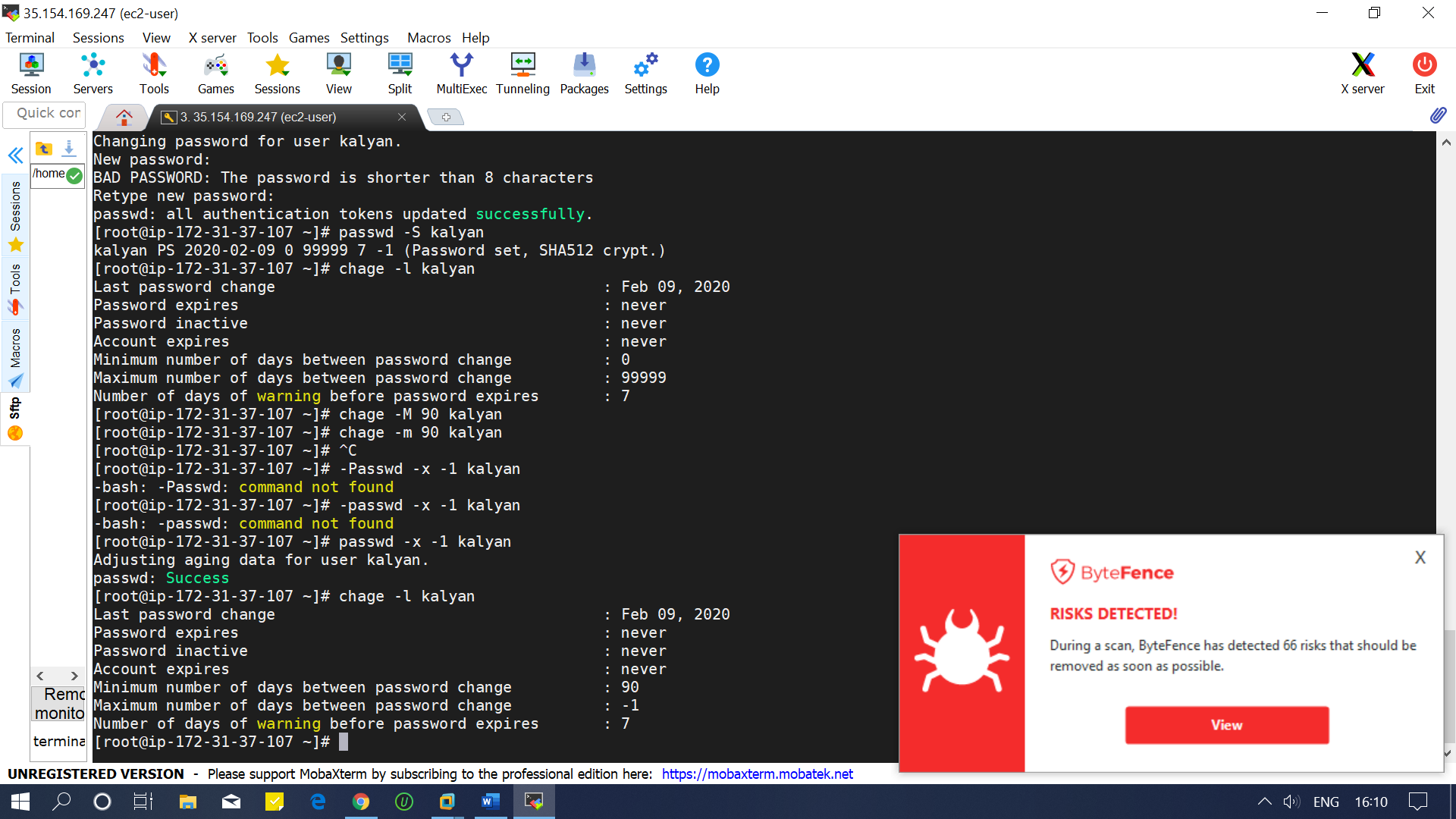
I - measn Inactive

E - means expire

1970 jan 1st

2020 feb 02

* # chage -l kalyan gives the whole details of password ,when expires those nd all
* ]# chage -M 90 kalyan
* # chage -m 90 kalyan
* # chage -w 9 kalyan
* # chage -E 2020-02-09 kalyan -- on that date it expires
* # passwd -x -1 kalyan - password never expires



Usermod -L kayan - to lock user

Usermod -U kalyan - to unloack user

Passwd -S kalyan

stat ravi -displays when it has been modified and who did that

[root@ip-172-31-37-107 ~]# stat ravi

File: ravi

Size: 29 Blocks: 8 IO Block: 4096 regular file

Device: ca02h/51714d Inode: 4671465 Links: 1

Access: (0600/-rw-------) Uid: ( 0/ root) Gid: ( 0/ root)

Context: unconfined\_u:object\_r:admin\_home\_t:s0

Access: 2020-02-09 08:58:03.335747517 +0000

Modify: 2020-02-09 08:57:51.854884639 +0000

Change: 2020-02-09 09:11:41.297993880 +0000

Birth: -

[root@ip-172-31-37-107 ~]#

* **/etc/group**

**INODE:**

It is the unique number like Permissions owner ship size of the file , time stamp etc

ls -li Lokesh -- to display inode number

**softlink and hardlink:**

# ln -s originalfilename softlinkfilename-s

softlink is the shortcut of original file

if we delte original file , we lost the file, if we delete softlink file we can access data from originfile.

Inodes are differnet

**Hard link** is the mirror copy of original file

# Ln original file hardlinkfilename

-Ln f4 f4-h

Ls -li f4-h

**Process management :**

* # Uptime - to know how long sever is up and running, how many users logged in and load avg
* # w -- who logged in and what are they doing
* Load average: LA shouldn’t be more than no of cpu
* How to check no of cpus are there
* # top after executing top command just click any button we can see cpus
* # cat /proc/cpuinfo
* # cat /proc/cpuinfo | grep processor | wc -l -- here using grep and counting

Tasks = no of processes

Process states :

* R – running process
* T – termination ( stopped process
* S – slepping process
* Z – Zombie process -- it is a process in which successfully terminated , but its status did not updated to parent process.
* init is the 1st process – should not kill this
* mem : #freespace -m ( m means it displays in MB’s)- wecan see how much used how much free
* #swap: swap memory : if memory is full , we need some memory to run processes , so there will be predefined memory allocated that is swap
* Kill – kill is a command to kill the process id.
* # Kill -9 pid --it directly kills the process , it wont bother about child
* # Kill -15 pid -- it kills the child process and then parent process.
* # Ps -ef :
* # Ps aux | head -3 – to see process information -user process id , how much memory it consuming and process states.

**SAR : system activity report**

If we execute sar cmd each and every second

# sar | head -7

# sar 2 5 --- it shows for every 2 seconds and 5 times depending on value we give

If we want 2 days or for last 30 days value we get

Cd /var/log/sa/

Pwd

Ll

/var/log/sa -- it have for past last 30 days logs .

# sar -f /var/log/sa/sa09 -- we can change value in place of 09. --- to get logs