**LINUX\_COMMANDS**

internal login using private

# ssh -i aws.pem ec2-user@10.1.3.100

youcan save public to aws.pem (any name)

or passwordless connection

# ec2-metadata ====> it shows public,private ip,host name,....

\*\*\*network commands\*\*\*

private ip = hostname defaultlly

#netstat -ntlp ===>it shows listen ports

#ping

ping - ICMP traffic

ping ip or website

ping 10.1.1.112

ping -c 5 ip ===> count 5

host files (1,2,3 servers more than that use DNS) ===>when you call specific name except ips goto etc/hosts in both servers then add like this

ip devserver devserver.com

ip qaservers qaserver.com

disable ICMP (ping) for security purpose===> goto security groups and add which one youwant except ICMP TRAFFIC

AFTER you try ping command it not working

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#telnet

telnet ip(or)website port

telnet 192.168.3.24 22

telnet yellowserver 22

when port enabled in security groups after try telnet it shows connection refused

It means port enable but no service is there using that port

when you start any service with that port it shows connected.

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#ifconfig (interface config)

It will shows ip address and some other things

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#netstat

netstat (or) netstat -a

It will shows the present running ports and other details

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#nslookup (name server lookup)

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# route (it will shows traffic)

route -n , route add

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#host

host www,google.com

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os is mediater of user and computer

linux architrcture

hardware ====> cpu,ram,rom

kernal ====> heart of the os.

shell ====> interface between user to kernal

Good security compare to windows

HOW TO USE OR WHERE TO USE LINUX

AWS or VIRTUAL BOX and VM WARE

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uptime --->last shutdowntime and load average

w --->how many users login and it's ip

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Linux Directory Structure or Linux Hierarchy File Structure

bin ====> binary files.excutable files which type of extention will alows.

In bin directory all commands are configured.

sbin ====>super user commands are configured.

boot ====> load the system bootable files.(eppudu yee files load avvali ani configure chesivuntaru)

(eppudu windows power button click ckeyyagaane lock screen vache loopu konni files load avuthay)

dev ====> device related files hard disk & disk partions.

etc ====>all 99% configuration files are available in etc

home ====> home directory is saved all users data.

ex: one building and each persons have separate home(ploat)

lib ====> os library files stored.

media ====> media related like pendrives & cd-rom.

empty directory and these are mounting purpose.

mnt ====> mounting points iformation stored here.

empty directory and these are mounting purpose.

opt ====> It is optional sirectory manually install softwares.

third party softwarefiles will store in opt.(.tar)

usr ====>users application thirdy party using yum & rmp . (yum install jenkins)

proc ====>proccesing related files soft,ram,rom,..... details

root ====>root user home directory.

src ====> service related information like kernal.

sys ====> system related information processor,ram,hard disk.

tmp ====> tempory files when restart the linux all files are deleted.

var ====> (cache,log,spool,tmp)all logs will stored in this directory. like history.

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/ ===> slash is parent directory of all directories.

date ===> time and date

sudo su or sudo su -

cd (change directory)

drw for directory

-rw is file .txt, .....

cd .. (one step come back)

pwd (precent work directory)

ll ===> showing all files

ls -l ===> long list

ls -l filename ===> showing file name only

ls -la ===> showing hidden files

ls -l t\* ===> showing all filesstarting with "t"

ll directoryname

ll test ===> showing that directory files only

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# file creation command

touch file1 file2 ===> creating new file

touch sunil.txt

cat ===>create a file and see file data and add data to file

cat > filename ===> create file name or use existing file and add new data existing data will be deleted.

click ctr+d to save the file with data

cat >> filename ===> add more date without removing existing data.

cat filename ===>you can see the file cotent

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# mkdir ( make directory)

mkdir directoryname dir2 ===>(make directory)create new directory

mkdir linux

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# cp (copy)

cp ===> copy files

cp filename destinationpath

cp sunil.txt /opt/ ===> single files

cp sunil.txt file2.txt /opt/ ===> multiple fies

cp \* /opt/ ===>copy all fies in present directory

cp -r directoryname path ===> copy directory

cp -r test /opt/ ===> copying directory

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# mv (move or rename)

mv filename destination path

mv file1.txt /opt/ ===> move file or directory

Rename the file name

mv oldfilename newfile

mv file1 file2 ===> rename the file name

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# rm (remove(delete))

delete any file or directory

rm filename

rm file1 ===> remove file it asks yes or no

rm -f filename ===> remove file without asking yes or no

rm -rf \* ===> it will remove all file in PWD

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# FILTER COMMANDS

# head

head filename

head file.txt ===> defaultly showing first 10lines

head -no.oflines filename

head -20 fie.txt ===> it showing top 20 lines

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# tail

tail filename

tail file.txt ===> defaultly showing last 10lines

tail -no.oflines filename

tail -20 fie.txt ===> it showing last 20 lines

tail -floating(live mesages) file

tai -f file.txt ===> it showing live logs(running logs)

example: yum install httpd

start the service in server

service httpd start

and enable inbound rules in aws (http) ip 00000

tail -f acces\_log ===> it showing running logs (it will suing at deployment time)

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# less

less filename

less file.txt

click enter you can check line to line

after clicking

d ===> next page

b ===>previous page

/text ===> it will highlight the letter

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# more

more filename

more file.txt ===> it will shows remaining file percentage.

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# vi editor

vi filename ---> you can open or create file

after file opens press i you will go to insert mode you can write

esc:wq (escape mode colon write quit) save and exit

esc:q without save and exit

esc+G ---> go to last line

esc+gg---> go to first line

esc+w (or)3w(number w) ---> move to forward word by word

esc+b --->backward

esc+u ---> undo

esc+ctrlR ---> changes retrive(redo)

esc+yy (or)3yy(number yy) --->copy entire line or below linew

esc+p --->paste below cursor

esc+P --->paste upper the cursor

esc+dd (10dd) --->entire delete

esc+/hello ---> find specific word

esc+se nu ---> it shows number of lines in file

esc+:20 --->given line number you can go there

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# grep (global regular expression print)

command filename | grep "sunil"

ps -ef | grep "https"

grep "sunil" filename --->it prints whole line

grep -i "sunil" file name --->either caps,small letters

grep -r "sunil" /var/log/ --->searching whole path

grep -n "sunil" filename --->prints line number also

grep -c "sunil" filename ---> it prints matched lines numbers(10 or 20)

grep -B10 "sunil" filename ---> prints before 10 lines

grep -A10 "sunil" filename ----> prints after 10 lines

grep -B10 -A10 "sunil" filename --->before and after

grep -e "sunil" -e "boreddy" filename ---> multiple words

grep -v "sunil" filename --->when it matched it not prints

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# locate (it's like a find command)

locate filename

locate sunil ---> you can locate file using file name

locate filename -n 10 --->it prints 10 lines.

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# file permissions chmod & chown

Symbolic and Numeric Values

0 --- No permission

1 --x Execute

2 -w- Write

3 -wx Write and execute

4 r-- Read

5 r-x Read and execute

6 rw- Read and write

7 rwx Read, write, and execute

default permission for file 664

default permission for directory 775

-rw-rw-r-- 1 ec2-user ec2-user 0 feb 14 01:51 filename

(-)file type

(for example we have a shell script we have to

execute the script so we have to provide the the execute permissions)

rwx user permissions

rwx group permissions

rwx others permission (except current user)

number ---> chmod 777 filename

ugo ---> user group other

chmod -R 777 directory --->when you give -R it changing in directory files permissions also change.

chmod 740 file1 file 2

symbolic--->

u - rwx

g - rwx

o - rwx

chmod u=rw,g=rwx,o=x filename --->giving different permissions to ugo

chmod ugo=r filename --->giving same permission to ugo

chmod u+x filename ---> giving single permission for single one

chmod u-x filename ---> remove only user execute permission

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chown (change ownership)

You can change existing users and groups only otherwise you get an error(you can see these things in /etc/passwd)

chown --version (you can check the version)

chown username(owner):groupname filename

chown username(owner): filename

chown :groupname filename

chown sunil:sunil filename.txt

chown -R sunil:sunil directory (it will change the directory inside files also)

chown -v sunil:sunil filename.txt (verbose mode -->it will shows the output also )

chown -c sunil:sunil filename.txt (it will shows output when owner or group will change)

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umask

umask

If the default settings are not changed, files are created with the access mode 666 and directories with 777.

In this example: The default umask 002 used for normal user. With this mask default directory permissions

are 775 and default file permissions are 664.

The default umask for the root user is 022 result into default directory permissions

are 755 and default file permissions are 644.

For directories, the base permissions are (rwxrwxrwx) 0777 and for files they are 0666 (rw-rw-rw).

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#### Alias (short name for bigger command)

alias --->you can check existing alias

temparary

alias name="command"

alias status="sudo -f /var/lib/log/httpd/access\_log" --->for temperary

unalias status --->it willremove alias

check before you create it is already exist or not.

permenant

goto /home/sunil/.bashrc and edit (it will works only which user home directory will you add)

add the alias in single quotes

vi .bashrc ---> in that file add alias after below line

#user specific alias and functions

alias status='tail -f /var/lib/log/httpd/access\_log'

source .bashrc --->it will reload

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Types of files

when file starts with below things

- (ifun) regular/normal file (when you create new file )

d directory

c charectered device files

b blocked device file ( attached disks like this path /dev/xvda2)

s local domain socket (when you communicate between process /dev/log )

l symbolic/soft link file.

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# inode tables

It will store the meta data(data about data)

like file type,owner,time,date,....

every file have inode number

stat filename --->it will shows file type,inode number,acces, modify time.

ls -li filenem --->shows the single file inode number.

ls -li ---> shows all files inodes numbers.

df -ih --->It will shows the total and remaining.

when you copy the file inode number will also creates new one (you are creating new file with existing data)

when you move the file inode number will not change (you will move the file not creating or copying)

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# sticky bit ( it will enable the security for a directory)

ex: when one user deletes the another user data. we can anble security.

when sticky bit enable it shows the t like below example

drwxrwxrwt 2 root root 39 Feb 16 2:49 directory

The defaultly stickybit enabled directory is /tmp/

/etc/ssh/sshd\_config

change no to yes in that file

enablepassword authentication

after that restart service

service sshd restart

after use below command you can enable stickybit for a specific directory

chmod o+t directoryname ===>Add

chmod o-t directoryname ===>Remove

you can enable file level also but it's not working good.

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Soft link(symbolic link) & Hard link(mirror copy of original file)

# Soft link(symbolic link)

goto the directory where file exists

in that current directory use below command

ln -s originalfilename softlinkname

ln -s boreddy.txt sunil

original file name ---> which file you want to create a softlink

softlink name ---> you can give your own name anything

After creating softlink you can find in permissions it shows like below example

lrwxrwxrwx. 1 root root 11 18 01:45 sunil -> boreddy.txt

\*so, now you can enter cant boreddy.txt in anywhere.

\*It will gets full permissions defaultly after creates the soft link and also inode number also different.

\*when you delete original file the softlink file data delete but file not delete.

\*when you delete softlink file it cannot delete original file.

# Hard link(mirror copy of original file)

ln oroginalfile hardlink

ln sunil.txt boreddy

\*hard link file have a same inode number.

\*permissions also takes same.

\*when you delete original file it cannot delete hardlink file.

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USER MANASGEMENT

Total 3 types user

1 --->Super user (Root) This user id starts with zero.

2 --->system user(apache,jenkins) It cannot login to os. Id range 1-999

3 --->Normal user (created users) id range 1000 - 65k+

every user have UID(user id)

create new user

useradd username

useradd sunil

after creating new user new group also created with same name and same group id.

Total 7 fields /etc/passwd

sunil:x:1004:1004::/home/sunil:/bin/bash

Uname:passsword:User id:Group id:comment(dev team,qa team...):user home directory:shell

after this command some of file will modifies.

/etc/passwd ----> In this will add new user data

/etc/shadow ----> New created Uname,password.... information will update.

In /etc/shadow file some fields are tehre like

username:password encrypted format:last time password cahnged time:days after password

must be changed:password expire warnig :Disable user after days password exipires:reserved

suni:n28743b87$UnBY:19044:0:9999:7:::

/etc/group ----> that group related information

/etc/gshadow ----> group password information.

And also

\*one directory also created in /home/sunil/ with the 700 permissions

\*\*In this directory we have some copyied hidden files copied form /etc/skel/

.bashrc ---> custom env variable,alias,shell comunication.

.bash\_profile ---> It will execute whenever user login.

.bash\_logout ---> Logout data.

.bash\_history --->This file will create after did some action.

In this file history of commands.

cat /etc/default/useradd ---->useradd command will execute based on this file.

cat etc/login.defs ---> In this file have some data like id range,password expiry,.....

id username

id sunil --->it will display user and group id.

passwd username

passwd sunil --->set password using this command.

su username

su sunil ---> switch user

vi /etc/ssh/sshd\_config --->enable password authentication in this file like below line

from this (#PasswordAuthentications yes) to this (PasswordAuthentications yes) uncomment the line.

Afetr uncomment the line restart the service without restart changes not reflected use below command.

service sshd restart

useradd -d homepath Uname ---> we can give custom home path

useradd -d /opt/java java

usermod -d /home/java java ----> we can modify the data(home path) after created

useradd -u 1200 username --->add new user with custom user id

useradd -u 1300 -c "devteam" sunil ---> add new user with custom id and comment.

useradd -u 1400 -g 1100 -c dbteam -d /opt/sunil -s /bin/bash sunil

create new user with existing group id

-g --->primary group

-G --->secondary group

modification for existing data

usermod -c "new db team" sunil ---> for single word no need double quoets

usermod -s /bin/bash sunil --->change shell

usermod -d /home/sunil sunil ---> change home path

usermod -g 1100 sunil ---> change primary group id

usermod -G 1100 boreddy --->adding secondary group (second group)

usermod -l sunilkumar sunil ---> change user name

usermod -l oldUname newUname

usermod -s /sbin/nologin sunil ---> user cannot login to server.

usermod -L sunil --->Lock the user

usermod -U sunil ---> Unlock the user

\*How to check user locked or not?

cat /etc/shadow before password !(exclamatary mark) is there.

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Password aging

chage -l sunil ----> it will show password expires,inactive,change date....

chage sunil ---> give asked fields

-m --->minimum password age

-M --->maximum password age

-d --->for the last time password is chnaged

-W --->warning for before password expires.

-I --->password inactive -1

-E --->A/c expiration date

passwd -d username ---> delete password only

userdel username ---> delete user only

userdel -r username --->delete user and home directory

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group

groupadd groupname --->create a new group

groupadd devops

cat /etc/group ---> all groups details

cat /etc/gshadow --->groups related information

devops:x:1100:sunil,venky

group name:password:Gid:members

useradd -g devops sunil --->create a new user and add a primary group

gpasswd devops --->set a password for a groups

gpasswd groupname

usermod -a -G Gid user

usermod -a -G 1100 sunil --->when you want to add a one user for multiple groups.

or

usermod -aG 1100 sunil

gpasswd -a Uname Gname

gpasswd -a sunil devops --->whne you want to add a new user without any impact for existing added users use this command.

gpasswd -M usernames groups name --->when you will use this command it will remove existing added user.

gpasswd -M sunil,venky,raja devops ---->you can add multiple users to groups at a time

gpasswd -d Uname Gname

gpasswd -d sunil devops --->when you want remove user in a group

gpasswd -A Uname Gname ---->add a admin for a group

cat /etc/gshadow --->you can check in this path add or not

ex: gname:password:admin:users

devops:passwd:sunil:venky,raja

groupmod -g 1100 devops --->change the group ID

groupmod -g newGid Gname

groupmod -n newdevops devops --->change group name

groupmod -n newGname oldGname

groupdel devops --->delete group

groupdel Gname

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Add normal user to sudocommands

ex:

After creating new user the sudo permission will not work like (sudo vi /etc/ssh/sshd\_config)

vi /etc/sudoers --->you can open sudoers file

or

visudo

#Allow root to run any commands anywhere

root ALL=(ALL) ALL

sunil ALL=(ALL) NOPASSWD:ALL

sunil ALL=(ALL) NOPASSWD: /usr/bin/ls, /usr/bin/grep/ #you can add specific commands for a user (whch ls , which grep {you can find like this})

user anyhost/ip=(run with user{sudo cat}) Run all commands

\*\*\*\*\*\*when you do some syntex errors in sudoers after save the file

server will shows syntex error when shows error give e you can edit the file rectifiesthe mistakes.

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ping google.com ---->check internet connection

wget url --->download from internet

i ---->install

v --->verbose mode

h --->

q --->query

p --->list the capabilities the package provides

R --->list of the list(dependencies)

l --->package relate list

e ---> remove the package

V --->verifications

U --->update specific packages

--nodeps --->no dependencies

rpm -ivh package name

rpm -ivh httpd-2.5.2\*851.....rpm

rpm -ivh --nodeps httpd-2.5.2\*851.....rpm

rpm -ev --nodeps httpd-2.5.2\*851.....rpm

rpm -qpR httpd-.......rpm

rpm -q httpd-.......rpm --->check installed or not

rpm -ql httpd-.......rpm

rpm -qa --last --->you can check last installed package

rpm -ev httpd-.......rpm ---->

rpm -Va --->Doing all verification(pakages)

rpm -Uvh packagename.rpm ---->update specific packages

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yum install/remove/update package name

yum install httpd ---->install package(it will also install dependencies)

yum install wget

yum remove httpd

yum update httpd

cd /etc/yum.repos.d/

cat redhat-rhui-ha.repo ---->url,certificate,keys, etc details

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‘’Complete pending commands with examples’’

MONITORING COMMANDS.

netstat -network statistics.

netstat -s --droping packets ,total packets

netstat -r --ip routing table.

vmstat --virtual statistics

iostat --input out put statistics read and write

top -u name --(-U means user)to search the specific user

free -g --shows memory in gb format

free -m --shows memory in mb format

du filename ---du(disk usage).

df --df means disk free (df -m,df -h,df -TH).

fdisk -l --shows disk partitions list

lsblk --partition type and mountpoint information.

lsof

ls pci

lsusb

you can download any thing

wget url

wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.55/bin/apache-tomcat-9.0.55.tar.gz

instant output

echo

sort

awk

sed