**LINUX ASSIGNMENT**

1)

# list of files and directories in the current folder

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 local media mnt opt proc root run sbin srv sys tmp usr var

# creating a directory named test\_dir

**[ec2-user@ip-172-31-36-56 /]$** sudo mkdir test\_dir

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 local media mnt opt proc root run sbin srv sys test\_dir tmp usr var

# creating a file named example.txt in the test\_dir directory

**[ec2-user@ip-172-31-36-56 /]$** cd test\_dir/

**[ec2-user@ip-172-31-36-56 test\_dir]$** sudo touch example.txt

**[ec2-user@ip-172-31-36-56 test\_dir]$** ls

example.txt

# renaming example.txt as renamed\_example.txt

**[ec2-user@ip-172-31-36-56 test\_dir]$** sudo mv example.txt renamed\_example.txt

**[ec2-user@ip-172-31-36-56 test\_dir]$** ls

renamed\_example.txt

2)

# displaying content in the /etc/passwd

**[ec2-user@ip-172-31-36-56 test\_dir]$** cd ..

**[ec2-user@ip-172-31-36-56 /]$** cat /etc/passwd

root:x:0:0:root:/root:/bin/bash

bin:x:1:1:bin:/bin:/sbin/nologin

daemon:x:2:2:daemon:/sbin:/sbin/nologin

adm:x:3:4:adm:/var/adm:/sbin/nologin

lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin

sync:x:5:0:sync:/sbin:/bin/sync

shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown

halt:x:7:0:halt:/sbin:/sbin/halt

mail:x:8:12:mail:/var/spool/mail:/sbin/nologin

operator:x:11:0:operator:/root:/sbin/nologin

games:x:12:100:games:/usr/games:/sbin/nologin

ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin

nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin

dbus:x:81:81:System message bus:/:/sbin/nologin

systemd-network:x:192:192:systemd Network Management:/:/usr/sbin/nologin

systemd-oom:x:999:999:systemd Userspace OOM Killer:/:/usr/sbin/nologin

systemd-resolve:x:193:193:systemd Resolver:/:/usr/sbin/nologin

sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/sbin/nologin

rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin

libstoragemgmt:x:997:997:daemon account for libstoragemgmt:/:/usr/sbin/nologin

systemd-coredump:x:996:996:systemd Core Dumper:/:/usr/sbin/nologin

systemd-timesync:x:995:995:systemd Time Synchronization:/:/usr/sbin/nologin

chrony:x:994:994:chrony system user:/var/lib/chrony:/sbin/nologin

ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin

stapunpriv:x:159:159:systemtap unprivileged user:/var/lib/stapunpriv:/sbin/nologin

rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin

tcpdump:x:72:72::/:/sbin/nologin

ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash

# displaying first 5 lines in the /etc/passwd

**[ec2-user@ip-172-31-36-56 /]$** head -5 /etc/passwd

root:x:0:0:root:/root:/bin/bash

bin:x:1:1:bin:/bin:/sbin/nologin

daemon:x:2:2:daemon:/sbin:/sbin/nologin

adm:x:3:4:adm:/var/adm:/sbin/nologin

lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin

# displaying last 5 lines in the /etc/passwd

**[ec2-user@ip-172-31-36-56 /]$** tail -5 /etc/passwd

ec2-instance-connect:x:993:993::/home/ec2-instance-connect:/sbin/nologin

stapunpriv:x:159:159:systemtap unprivileged user:/var/lib/stapunpriv:/sbin/nologin

rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin

tcpdump:x:72:72::/:/sbin/nologin

ec2-user:x:1000:1000:EC2 Default User:/home/ec2-user:/bin/bash

3)

# displaying all the occurrences of the word “root” in the /etc/passwd

**[ec2-user@ip-172-31-36-56 /]$** grep root -n /etc/passwd

1:root:x:0:0:root:/root:/bin/bash

10:operator:x:11:0:operator:/root:/sbin/nologin

4)

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 linux\_commands.txt local media mnt opt proc root run sbin secure.txt srv sys test\_dir tmp usr var

# zipping the folder “test\_dir” and named it as “test\_dir.zip”

**[ec2-user@ip-172-31-36-56 /]$** sudo zip test\_dir.zip test\_dir

adding: test\_dir/ (stored 0%)

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 linux\_commands.txt local media mnt opt proc root run sbin secure.txt srv sys test\_dir test\_dir.zip tmp usr var

# deleting original test\_dir folder

**[ec2-user@ip-172-31-36-56 /]$** sudo rm -rf test\_dir

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 linux\_commands.txt local media mnt opt proc root run sbin secure.txt srv sys test\_dir.zip tmp usr var

# unzipping the test\_dir.zip to recreate the test\_dir folder

**[ec2-user@ip-172-31-36-56 /]$** sudo unzip test\_dir.zip

Archive: test\_dir.zip

creating: test\_dir/

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 linux\_commands.txt local media mnt opt proc root run sbin secure.txt srv sys test\_dir test\_dir.zip tmp usr var

5)

# downloading the content in the URL “https://gist.githubusercontent.com/Talha-Altair/b8a27d2b45add1dd7658fd34fa1968db/raw/bc45208c96df65e8e659c04e7d1f1bb54ec5b7e2/linux\_commands.txt”

**[ec2-user@ip-172-31-36-56 /]$** sudo wget https://gist.githubusercontent.com/Talha-Altair/b8a27d2b45add1dd7658fd34fa1968db/raw/bhttps://gist.githubusercontent.com/Talha-Altair/b8a27d2b45add1dd7658fd34fa1968db/raw/bc45208c96df65e8e659c04e7d1f1bb54ec5b7e2/linux\_commands.txt

--2025-08-20 13:36:08-- https://gist.githubusercontent.com/Talha-Altair/b8a27d2b45add1dd7658fd34fa1968db/raw/bc45208c96df65e8e659c04e7d1f1bb54ec5b7e2/linux\_commands.txt

Resolving gist.githubusercontent.com (gist.githubusercontent.com)... 185.199.111.133, 185.199.110.133, 185.199.109.133, ...

Connecting to gist.githubusercontent.com (gist.githubusercontent.com)|185.199.111.133|:443... connected.

HTTP request sent, awaiting response... 200 OK

Length: 1742 (1.7K) [text/plain]

Saving to: ‘linux\_commands.txt’

linux\_commands.txt 0%[ ] 0 --.-KB/s linux\_commands.txt 100%[====================================================================================>] 1.70K --.-KB/s in 0s

2025-08-20 13:36:08 (32.1 MB/s) - ‘linux\_commands.txt’ saved [1742/1742]

**[ec2-user@ip-172-31-36-56 /]$** ls

bin dev home lib64 local mnt proc run secure.txt sys test\_dir.zip 'users?page=2' var

boot etc lib linux\_commands.txt media opt root sbin srv test\_dir tmp usr

**[ec2-user@ip-172-31-36-56 /]$** cat linux\_commands.txt

ls - The most frequently used command in Linux to list directories

pwd - Print working directory command in Linux

cd - Linux command to navigate through directories

mkdir - Command used to create directories in Linux

mv - Move or rename files in Linux

cp - Similar usage as mv but for copying files in Linux

rm - Delete files or directories

touch - Create blank/empty files

ln - Create symbolic links (shortcuts) to other files

cat - Display file contents on the terminal

clear - Clear the terminal display

echo - Print any text that follows the command

man - Access manual pages for all Linux commands

uname - Linux command to get basic information about the OS

whoami - Get the active username

tar - Command to extract and compress files in Linux

grep - Search for a string within an output

head - Return the specified number of lines from the top

tail - Return the specified number of lines from the bottom

export - Export environment variables in Linux

zip - Zip files in Linux

unzip - Unzip files in Linux

ssh - Secure Shell command in Linux

service - Linux command to start and stop services

ps - Display active processes

kill and killall - Kill active processes by process ID or name

df - Display disk filesystem information

chmod - Command to change file permissions

ifconfig - Display network interfaces and IP addresses

wget - Direct download files from the internet

ufw - Firewall command

apt, pacman, yum, rpm - Package managers depending on the distro

sudo - Command to escalate privileges in Linux

alias - Create custom shortcuts for your regularly used commands

whereis - Locate the binary, source, and manual pages for a command

whatis - Find what a command is used for

top - View active processes live with their system usage

6)

# creating a file named secure.txt  
**[ec2-user@ip-172-31-36-56 /]$** sudo touch secure.txt

**[ec2-user@ip-172-31-36-56 /]$** ls

bin boot dev etc home lib lib64 local media mnt opt proc root run sbin secure.txt srv sys test\_dir test\_dir.zip tmp usr var

# displaying the permissions of the files and directories in the current directory

**[ec2-user@ip-172-31-36-56 /]$** ls -l

total 36

lrwxrwxrwx. 1 root root 7 Jan 30 2023 bin -> usr/bin

dr-xr-xr-x. 5 root root 16384 Jul 19 21:23 boot

drwxr-xr-x. 14 root root 3060 Aug 20 12:32 dev

drwxr-xr-x. 76 root root 16384 Aug 13 14:17 etc

drwxr-xr-x. 4 root root 35 Aug 13 14:15 home

lrwxrwxrwx. 1 root root 7 Jan 30 2023 lib -> usr/lib

lrwxrwxrwx. 1 root root 9 Jan 30 2023 lib64 -> usr/lib64

drwxr-xr-x. 2 root root 6 Jul 19 21:21 local

drwxr-xr-x. 2 root root 6 Jan 30 2023 media

drwxr-xr-x. 2 root root 6 Jan 30 2023 mnt

drwxr-xr-x. 3 root root 17 Jul 19 21:22 opt

dr-xr-xr-x. 158 root root 0 Aug 20 12:32 proc

dr-xr-x---. 3 root root 124 Aug 13 14:57 root

drwxr-xr-x. 28 root root 820 Aug 20 12:32 run

lrwxrwxrwx. 1 root root 8 Jan 30 2023 sbin -> usr/sbin

-rw-r--r--. 1 root root 0 Aug 20 13:15 secure.txt

drwxr-xr-x. 2 root root 6 Jan 30 2023 srv

dr-xr-xr-x. 13 root root 0 Aug 20 12:32 sys

drwxr-xr-x. 2 root root 33 Aug 20 12:43 test\_dir

-rw-r--r--. 1 root root 168 Aug 20 13:09 test\_dir.zip

drwxrwxrwt. 11 root root 220 Aug 20 13:14 tmp

drwxr-xr-x. 12 root root 144 Jul 19 21:22 usr

drwxr-xr-x. 19 root root 266 Aug 2 05:08 var

[ec2-user@ip-172-31-36-56 /]$ chmod -w secure.txt

chmod: changing permissions of 'secure.txt': Operation not permitted

# changing the permissions of secure.txt from -rw-r--r--. to -r--r--r--.

**[ec2-user@ip-172-31-36-56 /]$** sudo chmod 444 secure.txt

**[ec2-user@ip-172-31-36-56 /]$** ls -l

total 36

lrwxrwxrwx. 1 root root 7 Jan 30 2023 bin -> usr/bin

dr-xr-xr-x. 5 root root 16384 Jul 19 21:23 boot

drwxr-xr-x. 14 root root 3060 Aug 20 12:32 dev

drwxr-xr-x. 76 root root 16384 Aug 13 14:17 etc

drwxr-xr-x. 4 root root 35 Aug 13 14:15 hom

lrwxrwxrwx. 1 root root 7 Jan 30 2023 lib -> usr/lib

lrwxrwxrwx. 1 root root 9 Jan 30 2023 lib64 -> usr/lib64

drwxr-xr-x. 2 root root 6 Jul 19 21:21 local

drwxr-xr-x. 2 root root 6 Jan 30 2023 media

drwxr-xr-x. 2 root root 6 Jan 30 2023 mnt

drwxr-xr-x. 3 root root 17 Jul 19 21:22 opt

dr-xr-xr-x. 157 root root 0 Aug 20 12:32 proc

dr-xr-x---. 3 root root 124 Aug 13 14:57 root

drwxr-xr-x. 28 root root 820 Aug 20 12:32 run

lrwxrwxrwx. 1 root root 8 Jan 30 2023 sbin -> usr/sbin

-r--r--r--. 1 root root 0 Aug 20 13:15 secure.txt

drwxr-xr-x. 2 root root 6 Jan 30 2023 srv

dr-xr-xr-x. 13 root root 0 Aug 20 12:32 sys

drwxr-xr-x. 2 root root 33 Aug 20 12:43 test\_dir

-rw-r--r--. 1 root root 168 Aug 20 13:09 test\_dir.zip

drwxrwxrwt. 11 root root 220 Aug 20 13:16 tmp

drwxr-xr-x. 12 root root 144 Jul 19 21:22 usr

drwxr-xr-x. 19 root root 266 Aug 2 05:08 var

7)

# displaying all the environment variables

**[ec2-user@ip-172-31-36-56 /]$** printenv

SHELL=/bin/bash

HISTCONTROL=ignoredups

SYSTEMD\_COLORS=false

HISTSIZE=1000

HOSTNAME=ip-172-31-36-56.ec2.internal

PWD=/

LOGNAME=ec2-user

XDG\_SESSION\_TYPE=tty

MOTD\_SHOWN=pam

HOME=/home/ec2-user

LANG=C.UTF-8

LS\_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=01;37;41:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:\*.tar=01;31:\*.tgz=01;31:\*.arc=01;31:\*.arj=01;31:\*.taz=01;31:\*.lha=01;31:\*.lz4=01;31:\*.lzh=01;31:\*.lzma=01;31:\*.tlz=01;31:\*.txz=01;31:\*.tzo=01;31:\*.t7z=01;31:\*.zip=01;31:\*.z=01;31:\*.dz=01;31:\*.gz=01;31:\*.lrz=01;31:\*.lz=01;31:\*.lzo=01;31:\*.xz=01;31:\*.zst=01;31:\*.tzst=01;31:\*.bz2=01;31:\*.bz=01;31:\*.tbz=01;31:\*.tbz2=01;31:\*.tz=01;31:\*.deb=01;31:\*.rpm=01;31:\*.jar=01;31:\*.war=01;31:\*.ear=01;31:\*.sar=01;31:\*.rar=01;31:\*.alz=01;31:\*.ace=01;31:\*.zoo=01;31:\*.cpio=01;31:\*.7z=01;31:\*.rz=01;31:\*.cab=01;31:\*.wim=01;31:\*.swm=01;31:\*.dwm=01;31:\*.esd=01;31:\*.jpg=01;35:\*.jpeg=01;35:\*.mjpg=01;35:\*.mjpeg=01;35:\*.gif=01;35:\*.bmp=01;35:\*.pbm=01;35:\*.pgm=01;35:\*.ppm=01;35:\*.tga=01;35:\*.xbm=01;35:\*.xpm=01;35:\*.tif=01;35:\*.tiff=01;35:\*.png=01;35:\*.svg=01;35:\*.svgz=01;35:\*.mng=01;35:\*.pcx=01;35:\*.mov=01;35:\*.mpg=01;35:\*.mpeg=01;35:\*.m2v=01;35:\*.mkv=01;35:\*.webm=01;35:\*.webp=01;35:\*.ogm=01;35:\*.mp4=01;35:\*.m4v=01;35:\*.mp4v=01;35:\*.vob=01;35:\*.qt=01;35:\*.nuv=01;35:\*.wmv=01;35:\*.asf=01;35:\*.rm=01;35:\*.rmvb=01;35:\*.flc=01;35:\*.avi=01;35:\*.fli=01;35:\*.flv=01;35:\*.gl=01;35:\*.dl=01;35:\*.xcf=01;35:\*.xwd=01;35:\*.yuv=01;35:\*.cgm=01;35:\*.emf=01;35:\*.ogv=01;35:\*.ogx=01;35:\*.aac=01;36:\*.au=01;36:\*.flac=01;36:\*.m4a=01;36:\*.mid=01;36:\*.midi=01;36:\*.mka=01;36:\*.mp3=01;36:\*.mpc=01;36:\*.ogg=01;36:\*.ra=01;36:\*.wav=01;36:\*.oga=01;36:\*.opus=01;36:\*.spx=01;36:\*.xspf=01;36:

SSH\_CONNECTION=18.206.107.28 50406 172.31.36.56 22

XDG\_SESSION\_CLASS=user

SELINUX\_ROLE\_REQUESTED=

TERM=xterm

LESSOPEN=||/usr/bin/lesspipe.sh %s

USER=ec2-user

SELINUX\_USE\_CURRENT\_RANGE=

SHLVL=1

XDG\_SESSION\_ID=1

XDG\_RUNTIME\_DIR=/run/user/1000

S\_COLORS=auto

SSH\_CLIENT=18.206.107.28 50406 22

which\_declare=declare -f

PATH=/home/ec2-user/.local/bin:/home/ec2-user/bin:/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin

SELINUX\_LEVEL\_REQUESTED=

DBUS\_SESSION\_BUS\_ADDRESS=unix:path=/run/user/1000/bus

MAIL=/var/spool/mail/ec2-user

SSH\_TTY=/dev/pts/0

OLDPWD=/test\_dir

BASH\_FUNC\_which%%=() { ( alias;

eval ${which\_declare} ) | /usr/bin/which --tty-only --read-alias --read-functions --show-tilde --show-dot "$@"

}

\_=/usr/bin/printenv

# checking the value attached to variable “MY\_VAR”

**[ec2-user@ip-172-31-36-56 /]$** echo $MY\_VAR

# assigning a value “Hello, Linux!” to the variable “MY\_VAR”

**[ec2-user@ip-172-31-36-56 /]$** export MY\_VAR="Hello, Linux!"

**[ec2-user@ip-172-31-36-56 /]$** echo $MY\_VAR

Hello, Linux!