Assessment -1
Title: Linux Command List Assessment

Instructions:-

The following assessment aims to test your understanding and practical knowledge of various Linux commands. Perform the tasks given below using the appropriate commands. Write down the command(s) used to complete each task. You can use any Linux distribution or command-line interface of your choice. Ensure that you provide the correct output or results for each task.

Note: It is recommended to perform this assessment on a Linux machine or virtual environment.

Ensure that you provide the correct command(s) used to accomplish each task. Write your answers below each task.

Once you have completed the assessment, review your answers and verify that the output or results are correct.

Make this in document format and send them with images

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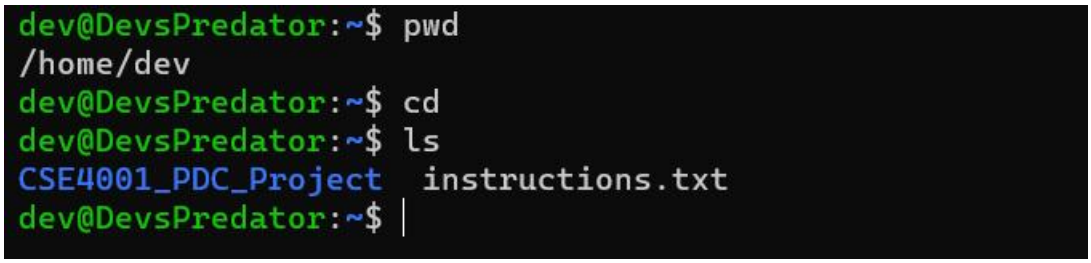
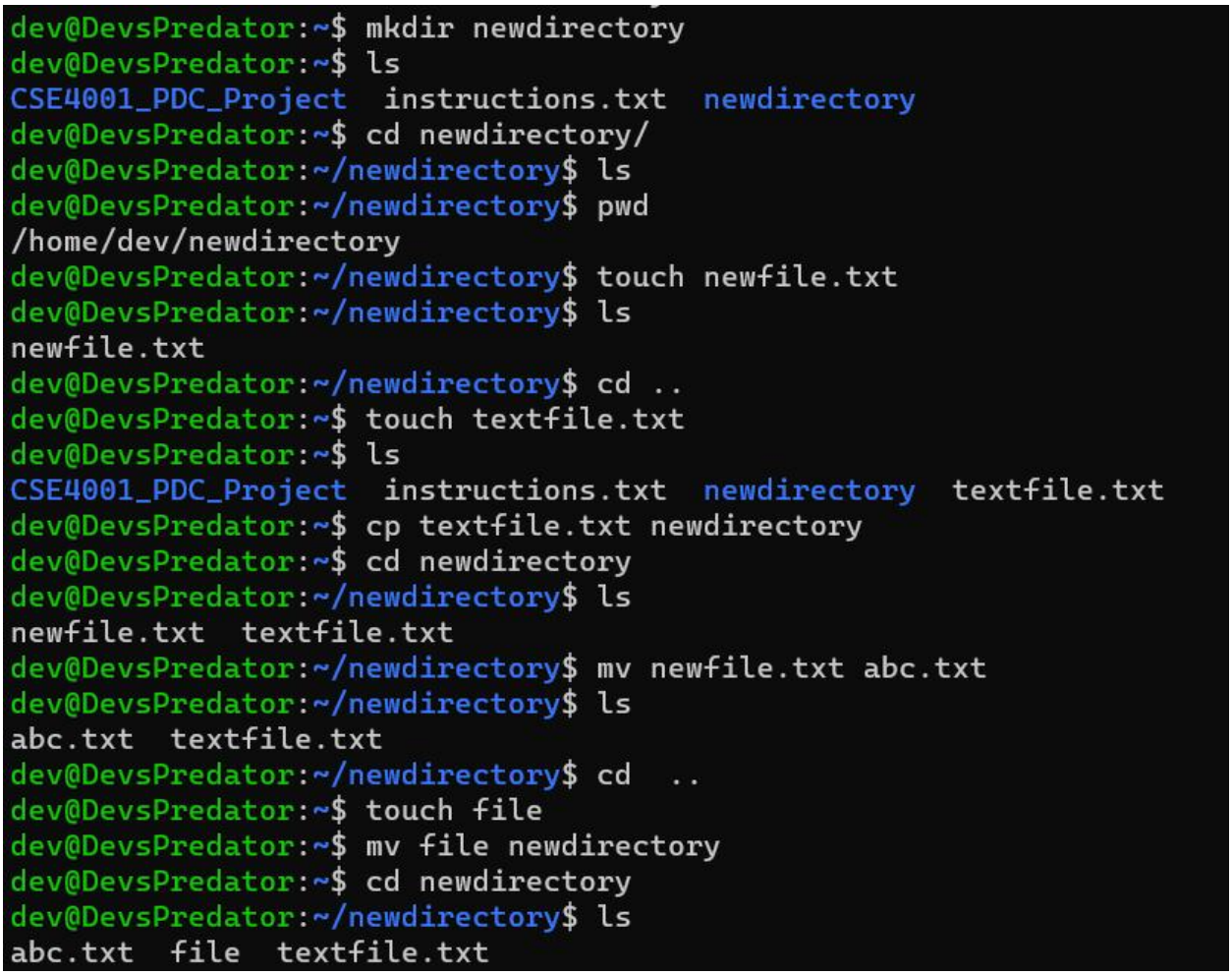
File and Directory Operations:



pwd: Print working directory
As shown the current working directory is home and the user is dev.

cd: Change directory
Changed directory from user home directory to root

ls: List files and directories
lists the files and directories present in the root directory



mkdir: Make directory

Created new directory inside user home directory as newdirectory

touch: Create an empty file

Created a file named textfile.txt inside home and a file newfile.txt in newdirectory.

cp: Copy files and directories

Copies textfile.txt into newdirectory

mv: Move or rename files and directories

Renames newfile.txt as abc.txt

Moves a file named “file” from user home directory to newdirectory.

```
dev@DevsPredator:~$ rm -rf newdirectory && rm textfile.txt
dev@DevsPredator:~$ ls
CSE4001_PDC_Project  instructions.txt
```

rm: Remove files and directories

Removes directory “newdirectory” -rf deletes subdirectories if any and deletes file “textfile.txt”

```
dev@DevsPredator:~$ ls
CSE4001_PDC_Project  instructions.txt
dev@DevsPredator:~$ find abc.txt
find: ‘abc.txt’: No such file or directory
dev@DevsPredator:~$ find instructions.txt
instructions.txt
dev@DevsPredator:~$
```

find: Search for files and directories

instructions.txt is present and is shown; while abc.txt is not present in the Directory

File Viewing and Editing:

```
dev@DevsPredator:~$ cat instructions.txt
1) open terminal
2) open ubuntu
3) cd CSE4001_PDC_Project
4) g++ main.cpp -o main -fopenmp && ./main <no_of_threads> p2p-Gnutella08.txt -v
```

cat: Concatenate and display file content

Displays the content of the file instructions.txt

```
dev@DevsPredator:~$ less instructions.txt

[1]+  Stopped                 less instructions.txt
dev@DevsPredator:~$
```

```
1) open terminal
2) open ubuntu
3) cd CSE4001_PDC_Project
4) g++ main.cpp -o main -fopenmp && ./main <no_of_threads> p2p-Gnutella08.txt -v
5) ouiiiiiiiiiiiiii
instructions.txt (END)
```

less: View file content with pagination

Opens instructions.txt with pagination

```
dev@DevsPredator:~$ head instructions.txt
1) open terminal
2) open ubuntu
3) cd CSE4001_PDC_Project
4) g++ main.cpp -o main -fopenmp && ./main <no_of_threads> p2p-Gnutella08.txt -v
5) ouiiiiiiiiiiiiii
dev@DevsPredator:~$ tail instructions.txt
1) open terminal
2) open ubuntu
3) cd CSE4001_PDC_Project
4) g++ main.cpp -o main -fopenmp && ./main <no_of_threads> p2p-Gnutella08.txt -v
5) ouiiiiiiiiiiiiii
```

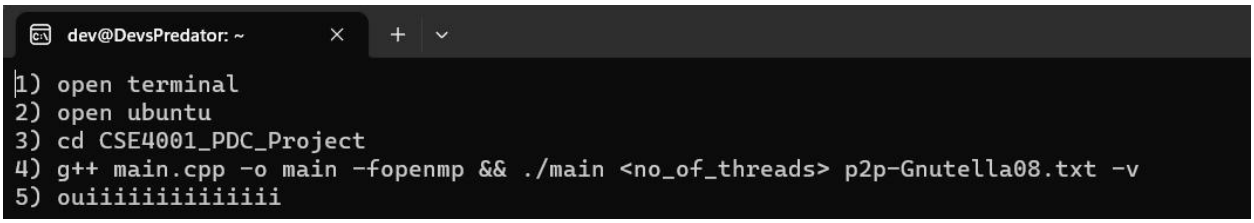
head: Display the beginning of a file

tail: Display the end of a file

```
dev@DevsPredator:~$ nano instructions.txt


Use "fg" to return to nano.

[2]+  Stopped                 nano instructions.txt
```

nano: Text editor for creating and editing files

```
dev@DevsPredator:~$ vim instructions.txt

[3]+  Stopped                 vim instructions.txt
```



vi/vim: Powerful text editor for experienced users

File Permissions:

```
dev@DevsPredator:~$ touch demo.txt
dev@DevsPredator:~$ chmod 644 demo.txt
dev@DevsPredator:~$ ls -l
total 8
drwxr-xr-x 3 dev dev 4096 Apr  3 12:14 CSE4001_PDC_Project
-rw-r--r-- 1 dev dev    0 May 29 16:37 demo.txt
-rw-r--r-- 1 dev dev  159 Mar  9 21:39 instructions.txt
dev@DevsPredator:~$ chmod 755 demo.txt
dev@DevsPredator:~$ ls -l
total 8
drwxr-xr-x 3 dev dev 4096 Apr  3 12:14 CSE4001_PDC_Project
-rwxr-xr-x 1 dev dev    0 May 29 16:37 demo.txt
-rw-r--r-- 1 dev dev  159 Mar  9 21:39 instructions.txt
```

chmod: Change file permissions

Permission of demo.txt changed to owner can read write and execute.

```
dev@DevsPredator:~$ sudo chown devendra demo.txt
[sudo] password for dev:
```

chown: Change file owner

Owner is changed from “dev” to “devendra”

```
dev@DevsPredator:~/new$ sudo addgroup ethical
Adding group `ethical' (GID 1001) ...
Done.
dev@DevsPredator:~/new$ sudo chgrp ethical demo.txt
dev@DevsPredator:~/new$ ls -l
total 0
-rw-r--r-- 1 dev ethical 0 May 29 16:41 demo.txt
```

chgrp: Change file group

Created a group using addgroup “ethical” and changed the group for demo.txt from dev to ethical.

File Compression and Archiving:

```
dev@DevsPredator:~/new$ tar -czvf compress.tar.gz demo.txt
demo.txt
dev@DevsPredator:~/new$ ls
compress.tar.gz  demo.txt
```

tar: Archive files

```
┌──(cyborg㉿kali)-[~/newdirectory]
└─$ ls
arch.zip.gz  compress.tar.gz  file.tar  newfile.txt

┌──(cyborg㉿kali)-[~/newdirectory]
└─$ gzip newfile.txt

┌──(cyborg㉿kali)-[~/newdirectory]
└─$ ls
arch.zip.gz  compress.tar.gz  file.tar  newfile.txt.gz
```

Figure 16

gzip: Compress files

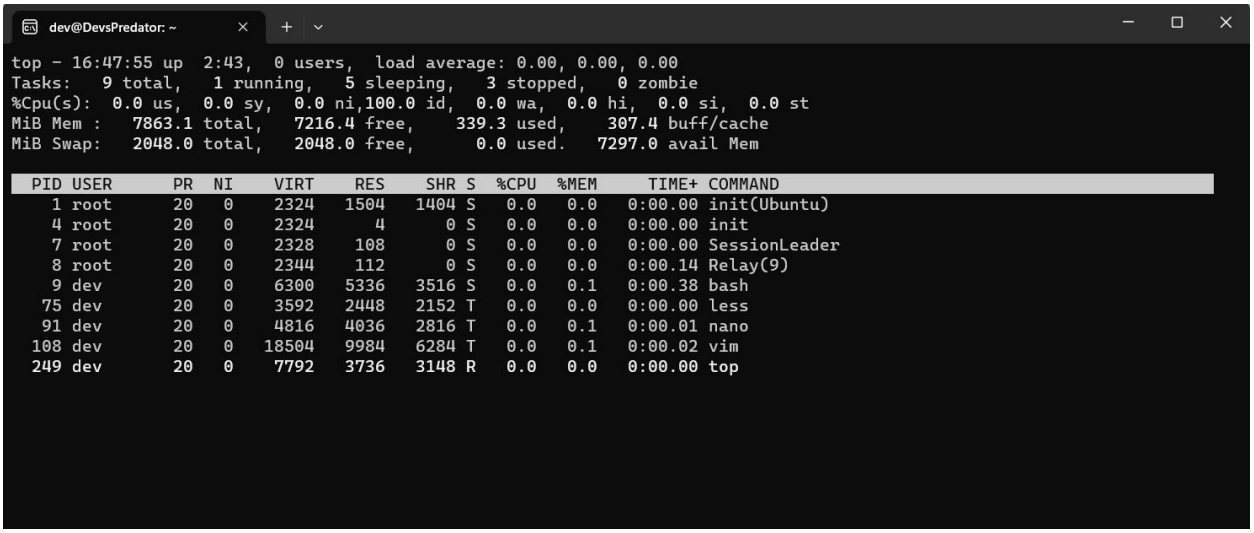
```
dev@DevsPredator:~/new$ zip deve.zip demo.txt
  adding: demo.txt (stored 0%)
dev@DevsPredator:~/new$ ls
compress.tar.gz  demo.txt  deve.zip
dev@DevsPredator:~/new$ unzip deve.zip
Archive:  deve.zip
replace demo.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
 extracting: demo.txt
dev@DevsPredator:~/new$ ls
compress.tar.gz  demo.txt  deve.zip
```

unzip: Extract files from a ZIP archive

Process Management:

```
dev@DevsPredator:~$ ps
  PID TTY          TIME CMD
    9 pts/0    00:00:00 bash
   75 pts/0    00:00:00 less
   91 pts/0    00:00:00 nano
  108 pts/0    00:00:00 vim
  248 pts/0    00:00:00 ps
```

ps: List running processes

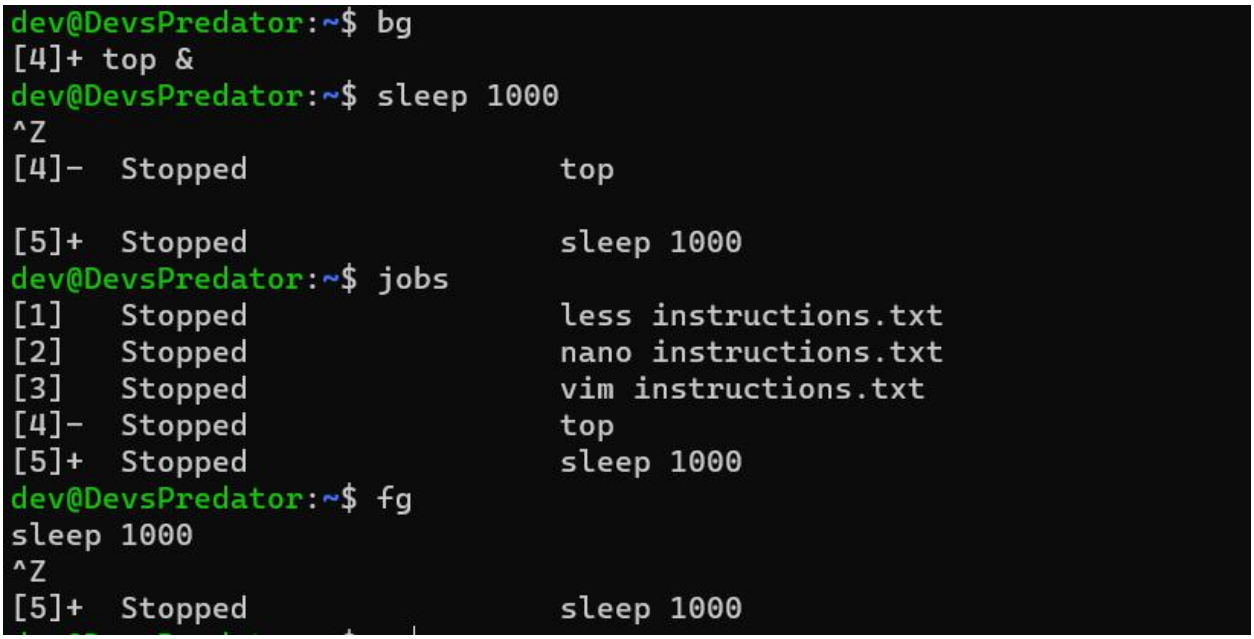


top: Display real-time system information and processes details.

```
dev@DevsPredator:~$ kill
kill: usage: kill [-s sigspec | -n signum | -sigspec] pid | jobspec ... or kill -l [sigspec]
dev@DevsPredator:~$ kill 10
-bash: kill: (10) - No such process
dev@DevsPredator:~$
```

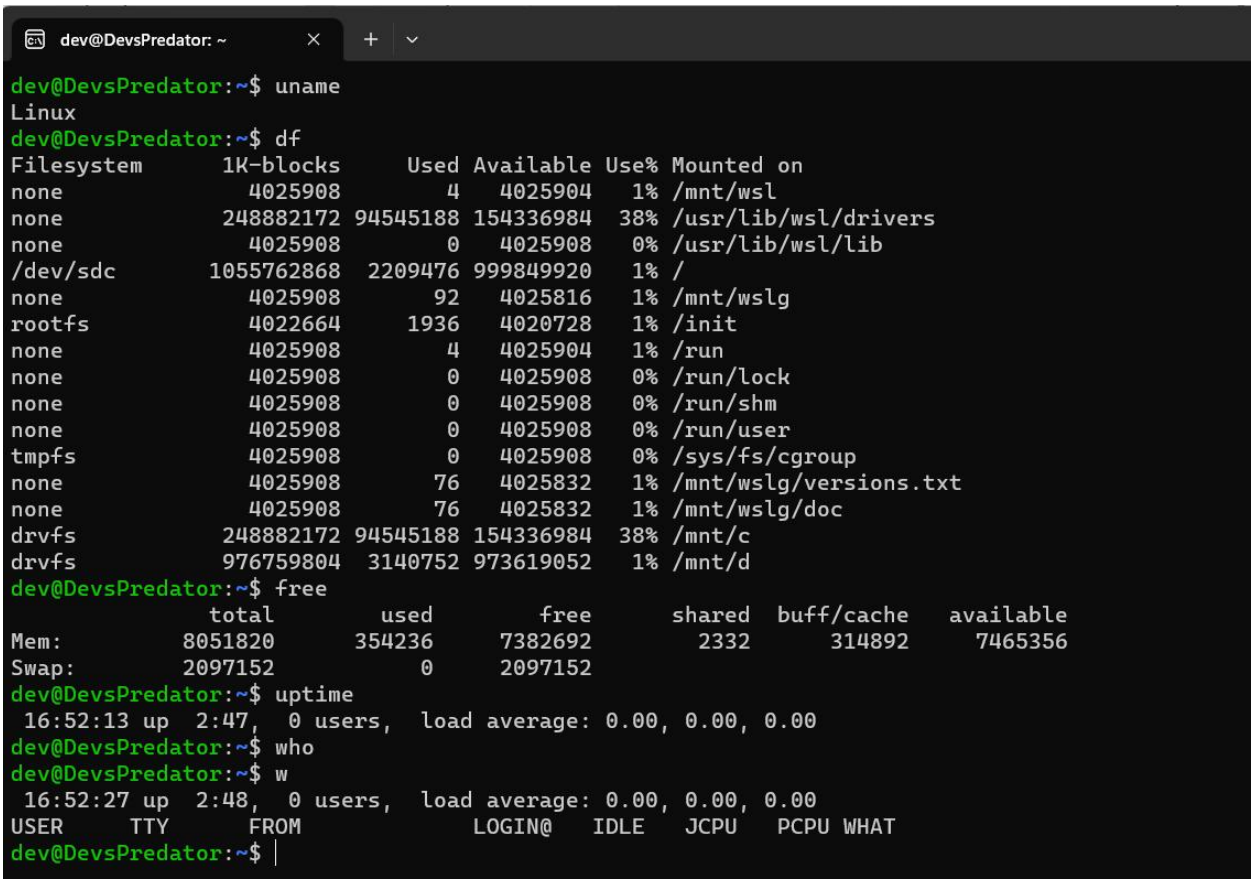
kill: Terminate processes

kill 10 doesn’t execute because there is no process with ID 10.



bg: Run processes in the background
fg: Bring background processes to the foreground

System Information:



uname: Print system information
df: Display disk space usage
free: Display memory usage
uptime: Show system uptime
who: Display logged-in users
w: Display logged-in users and their activities

Networking:

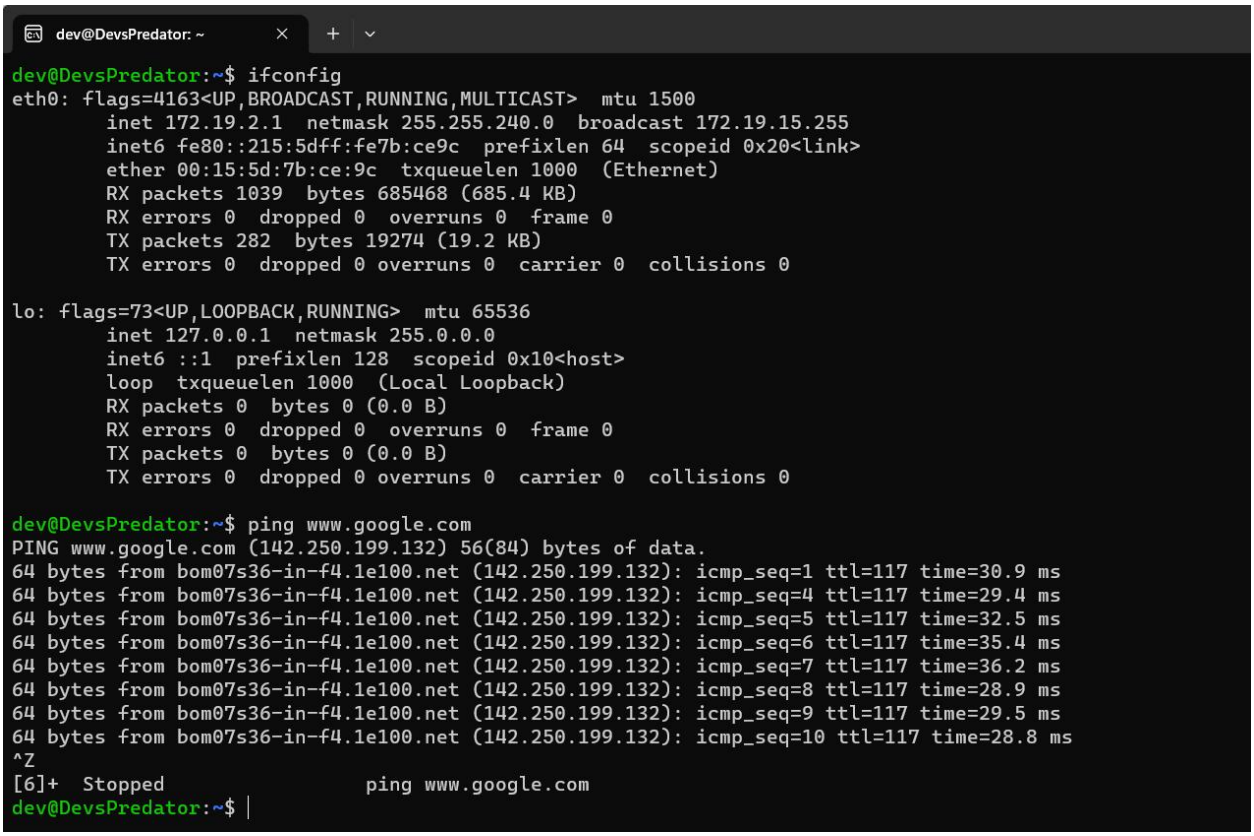
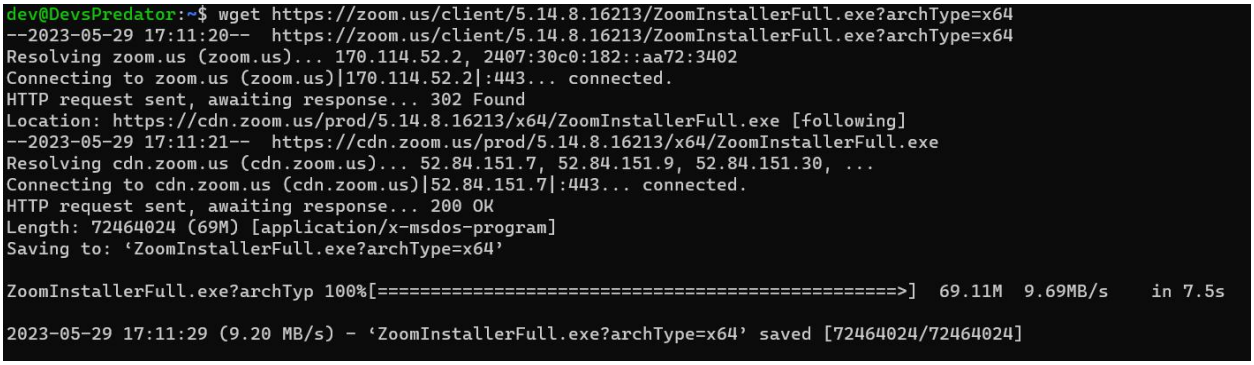


Figure 22

ifconfig: Configure network interfaces
ping: Send ICMP echo requests to a network host

ssh: Securely connect to a remote system
scp: Securely copy files between systems



wget: Download files from the web by taking the url as input.

System Administration:

```
dev@DevsPredator:~$ sudo useradd -m devendra
[sudo] password for dev:
dev@DevsPredator:~$ cd ..
dev@DevsPredator:/home$ ls
dev  devendra
```

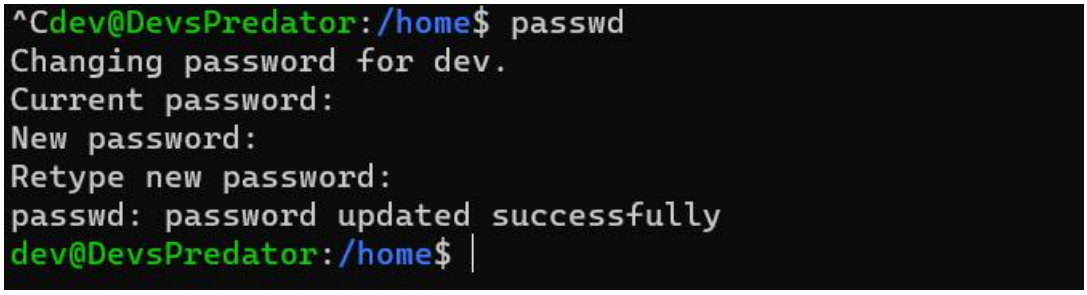
sudo: Execute commands with superuser privileges
useradd: Add a new user

```
dev@DevsPredator:/home$ sudo apt-get install unzip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
unzip is already the newest version (6.0-26ubuntu3.1).
unzip set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 62 not upgraded.
```

apt-get: Package management for Debian-based distributions
Virtual Box Kali Linux is Debian-based
yum: Package management for Red Hat-based distributions

```
dev@DevsPredator:/home$ systemctl
System has not been booted with systemd as init system (PID 1). Can't operate.
Failed to connect to bus: Host is down
dev@DevsPredator:/home$ crontab
^Z
^Cdev@DevsPredator:/home$
```

systemctl: Manage system services
crontab: Schedule recurring tasks



passwd: Change user password