

## Week 2: Linux Fundamentals

### Linux Administrative Tasks Report

1. Created a directory named `my_project` and navigated into it:

```
mkdir my_project  
cd my_project
```

A screenshot of a terminal window titled "kali@kali: ~/my\_project". The terminal shows the command "mkdir my\_project" being run, followed by "cd my\_project". The prompt then changes to show the path "~/my\_project". The background of the terminal shows a GitHub repository page for "clickjacking-tester" with various stats like 138 stars, 14 watching, and 81 forks.

2. Created an empty file named `notes.txt`:

```
touch notes.txt
```

A screenshot of a terminal window titled "kali@kali: ~/my\_project". The terminal shows the command "touch notes.txt" being run. The prompt then changes to show the path "~/my\_project". The background of the terminal shows a GitHub repository page for "clickjacking-tester" with various stats like 138 stars, 14 watching, and 81 forks.

3. Copied `notes.txt` to `backup_notes.txt` and moved it into a subdirectory:

```
mkdir backup  
cp notes.txt backup_notes.txt  
mv backup_notes.txt backup/
```

A terminal window titled "kali@kali: ~/my\_project". The session shows the following commands:

- \$ touch notes.txt
- \$ mkdir backup
- \$ cp notes.txt backup\_notes.txt
- \$ mv backup\_notes.txt backup/

The terminal window has a dark background with light-colored text. It includes a top bar with icons and a status bar at the bottom right showing the date and time.

4. Deleted the `backup` directory along with its contents:

```
rm -r backup
```

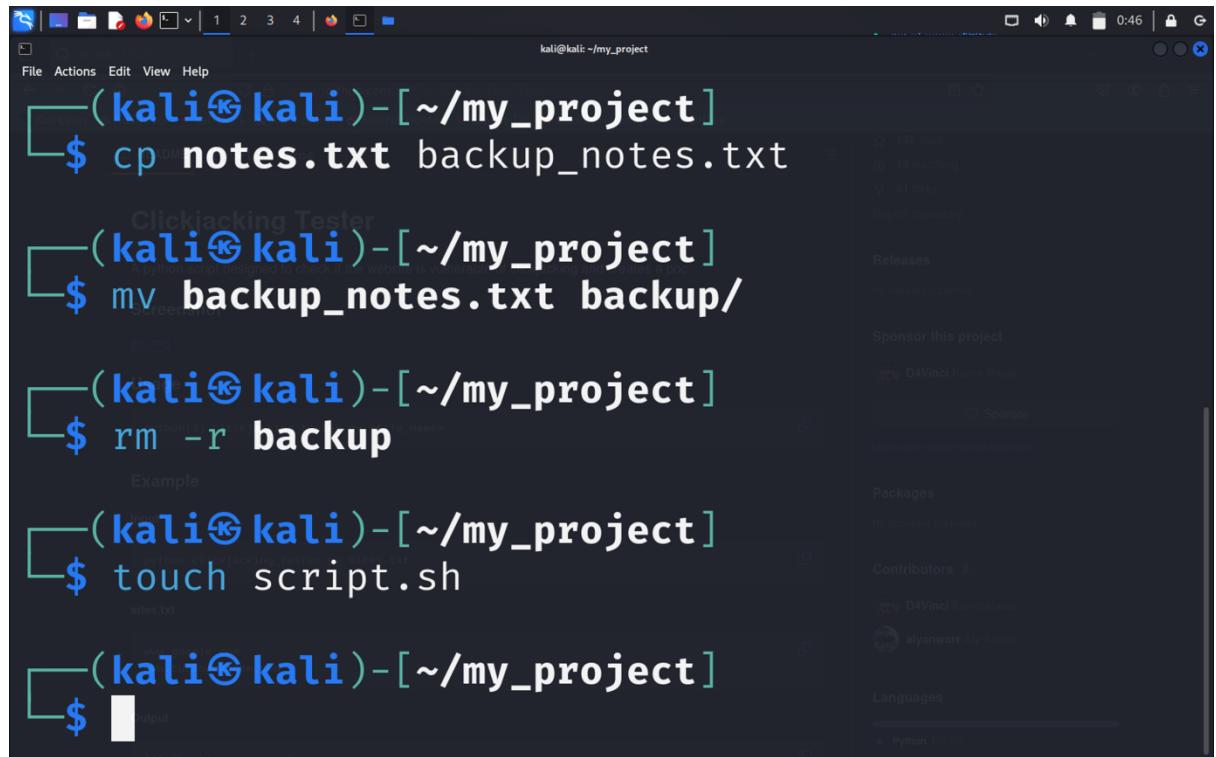
A terminal window titled "kali@kali: ~/my\_project". The session shows the following command:

- \$ rm -r backup

The terminal window has a dark background with light-colored text. It includes a top bar with icons and a status bar at the bottom right showing the date and time.

## 5. Created a script file `script.sh`:

```
touch script.sh
```



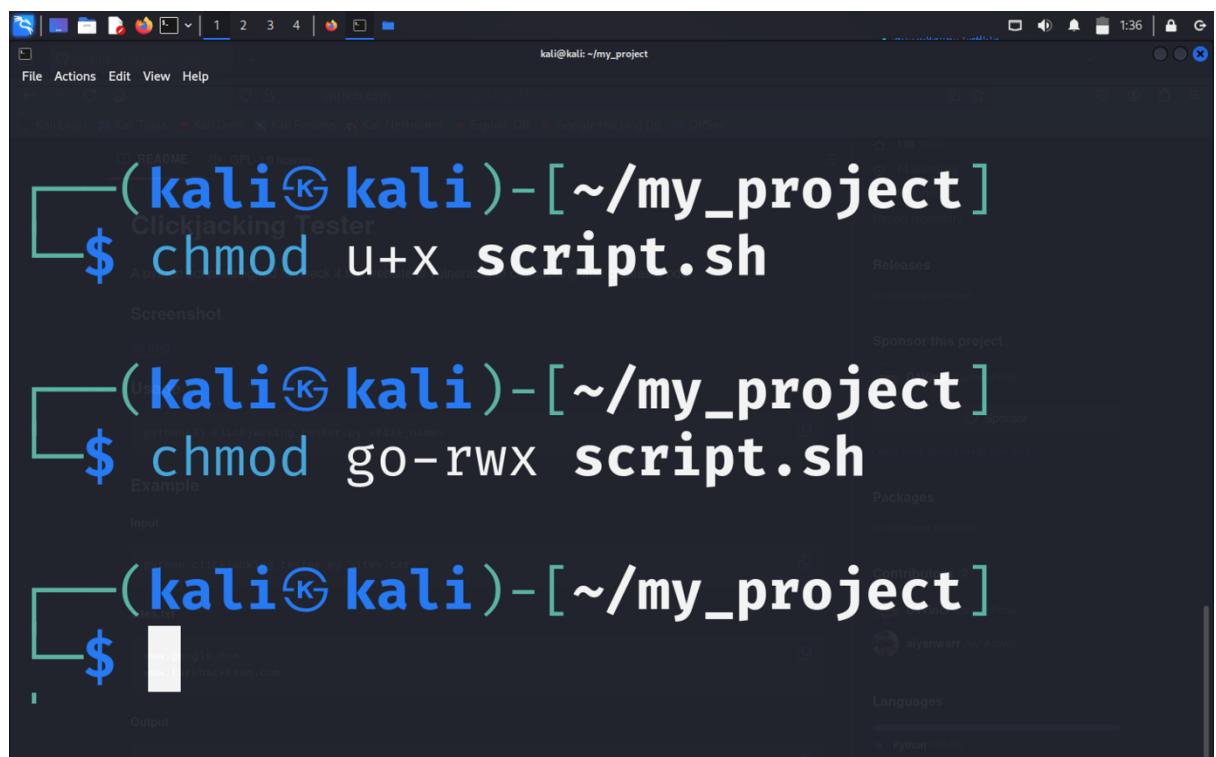
A terminal window titled "kali@kali: ~/my\_project". The session shows the following commands:

```
(kali㉿kali)-[~/my_project]
$ cp notes.txt backup_notes.txt
(kali㉿kali)-[~/my_project]
$ mv backup_notes.txt backup/
(kali㉿kali)-[~/my_project]
$ rm -r backup
(kali㉿kali)-[~/my_project]
$ touch script.sh
(kali㉿kali)-[~/my_project]
```

The terminal has tabs at the top labeled 1, 2, 3, 4. The right side of the window shows a GitHub repository page for "Clickjacking Tester" with details like 138 stars, 14 watching, 64 forks, and releases.

**Granted executable permissions and restricted access:**

```
chmod u+x script.sh
chmod go-rwx script.sh
```



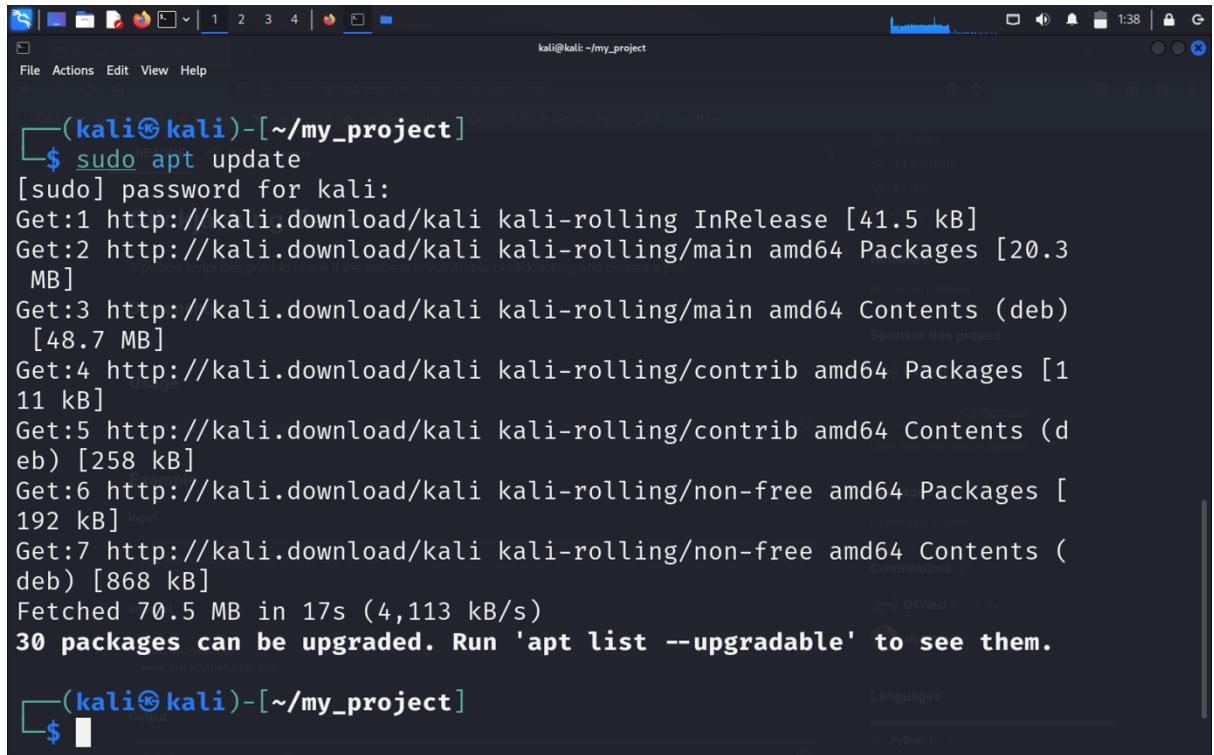
A terminal window titled "kali@kali: ~/my\_project". The session shows the following commands:

```
(kali㉿kali)-[~/my_project]
$ chmod u+x script.sh
(kali㉿kali)-[~/my_project]
$ chmod go-rwx script.sh
(kali㉿kali)-[~/my_project]
```

The terminal has tabs at the top labeled 1, 2, 3, 4. The right side of the window shows a GitHub repository page for "Clickjacking Tester" with details like 138 stars, 14 watching, 64 forks, and releases.

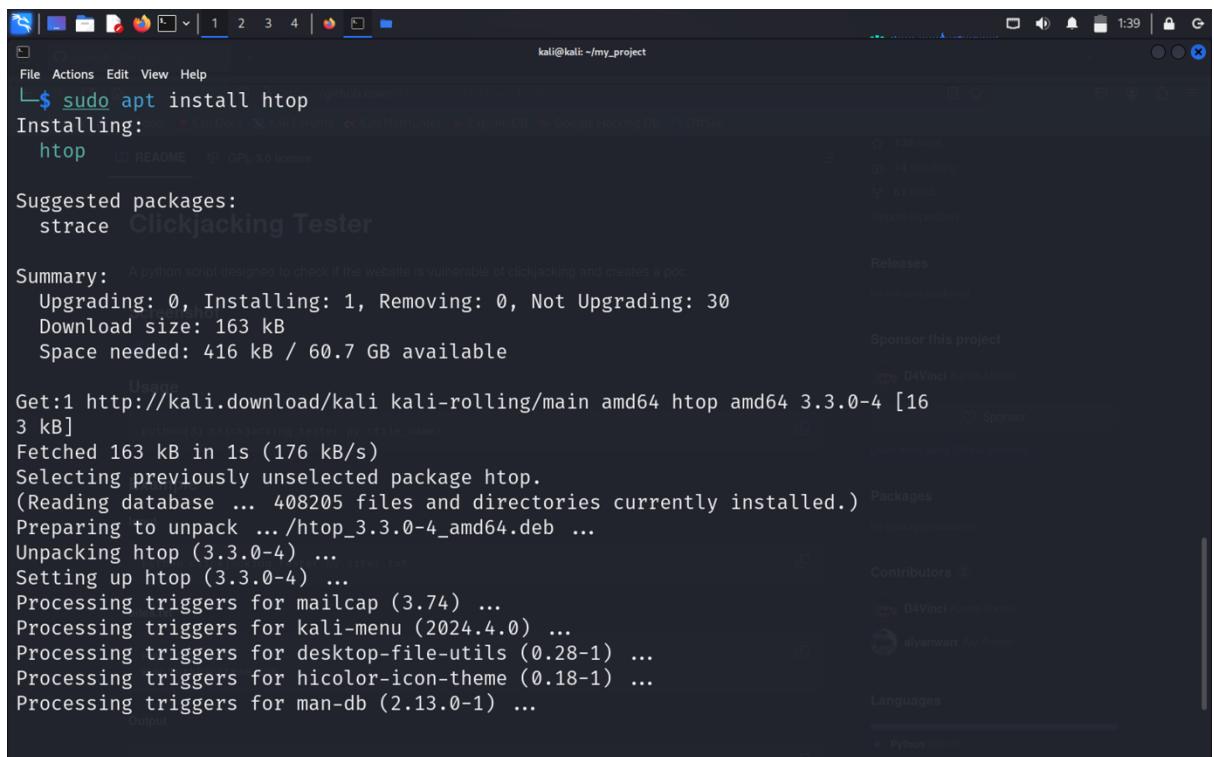
## 6. Updated the package manager and installed htop:

```
sudo apt update  
sudo apt install htop
```



A screenshot of a terminal window titled "kali@kali: ~/my\_project". The window shows the command \$ sudo apt update being run, followed by a list of packages being fetched from the Kali repository. The output ends with a message stating 30 packages can be upgraded. The terminal has tabs at the top and a status bar at the bottom.

```
(kali㉿kali)-[~/my_project]  
$ sudo apt update  
[sudo] password for kali:  
Get:1 http://kali.download/kali kali-rolling InRelease [41.5 kB]  
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [20.3 MB]  
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [48.7 MB]  
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [11 kB]  
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [258 kB]  
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [192 kB]  
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [868 kB]  
Fetched 70.5 MB in 17s (4,113 kB/s)  
30 packages can be upgraded. Run 'apt list --upgradable' to see them.  
(kali㉿kali)-[~/my_project]
```

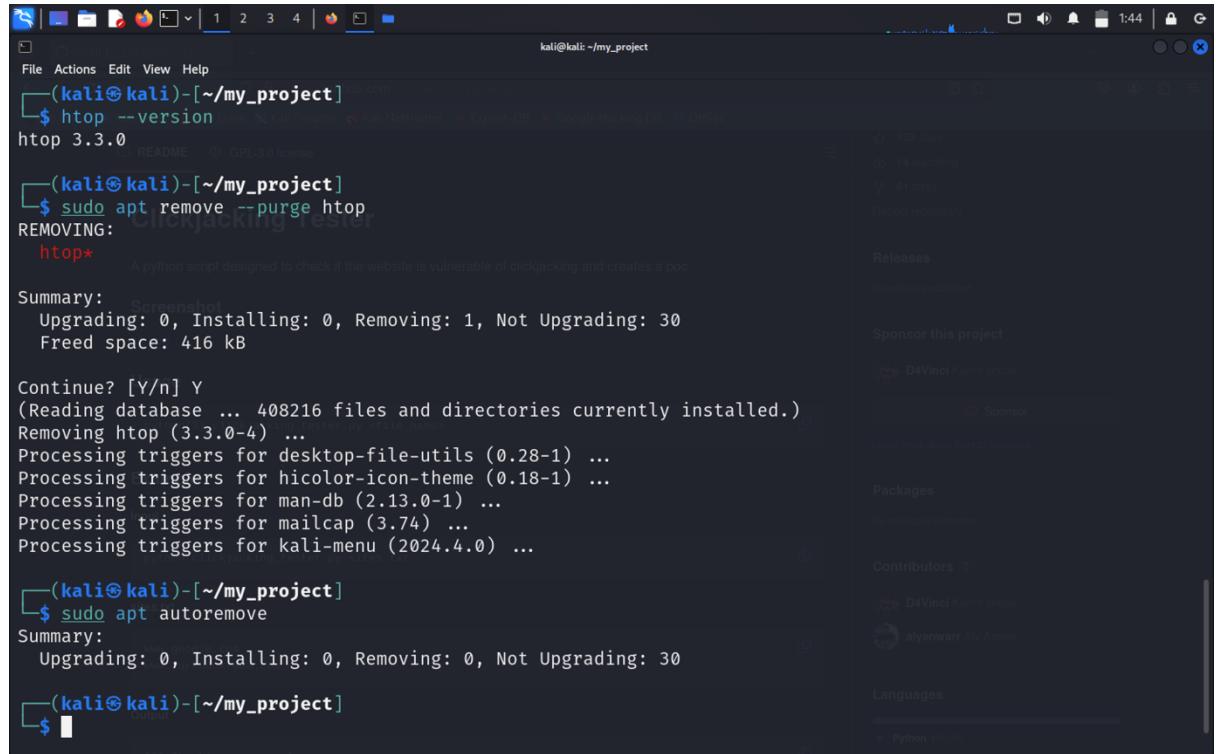


A screenshot of a terminal window titled "kali@kali: ~/my\_project". The window shows the command \$ sudo apt install htop being run, followed by the package being installed. The terminal has tabs at the top and a status bar at the bottom.

```
(kali㉿kali)-[~/my_project]  
$ sudo apt install htop  
Installing:  
  htop  
Suggested packages:  
  strace Clickjacking Tester  
Summary: A python script designed to check if the website is vulnerable of clickjacking and creates a poc.  
Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 30  
Download size: 163 kB  
Space needed: 416 kB / 60.7 GB available  
Get:1 http://kali.download/kali kali-rolling/main amd64 htop amd64 3.3.0-4 [163 kB]  
Fetched 163 kB in 1s (176 kB/s)  
Selecting previously unselected package htop.  
(Reading database ... 408205 files and directories currently installed.)  
Preparing to unpack .../htop_3.3.0-4_amd64.deb ...  
Unpacking htop (3.3.0-4) ...  
Setting up htop (3.3.0-4) ...  
Processing triggers for mailcap (3.74) ...  
Processing triggers for kali-menu (2024.4.0) ...  
Processing triggers for desktop-file-utils (0.28-1) ...  
Processing triggers for hicolor-icon-theme (0.18-1) ...  
Processing triggers for man-db (2.13.0-1) ...  
dpkg: error processing archive /var/cache/apt/archives/htop_3.3.0-4_amd64.deb: cannot be extracted (file is broken)  
dpkg-deb: error: subprocess dpkg returned an error exit status  
Errors were encountered while processing:  
/var/cache/apt/archives/htop_3.3.0-4_amd64.deb
```

## Verified the installation and uninstalled htop:

```
htop --version  
sudo apt remove --purge htop  
sudo apt autoremove
```



```
htop --version  
sudo apt remove --purge htop  
sudo apt autoremove
```

REMOVING:  
**htop\***

Summary:  
Upgrading: 0, Installing: 0, Removing: 1, Not Upgrading: 30  
Freed space: 416 kB

Continue? [Y/n] Y  
(Reading database ... 408216 files and directories currently installed.)  
Removing htop (3.3.0-4) ...  
Processing triggers for desktop-file-utils (0.28-1) ...  
Processing triggers for hicolor-icon-theme (0.18-1) ...  
Processing triggers for man-db (2.13.0-1) ...  
Processing triggers for mailcap (3.74) ...  
Processing triggers for kali-menu (2024.4.0) ...

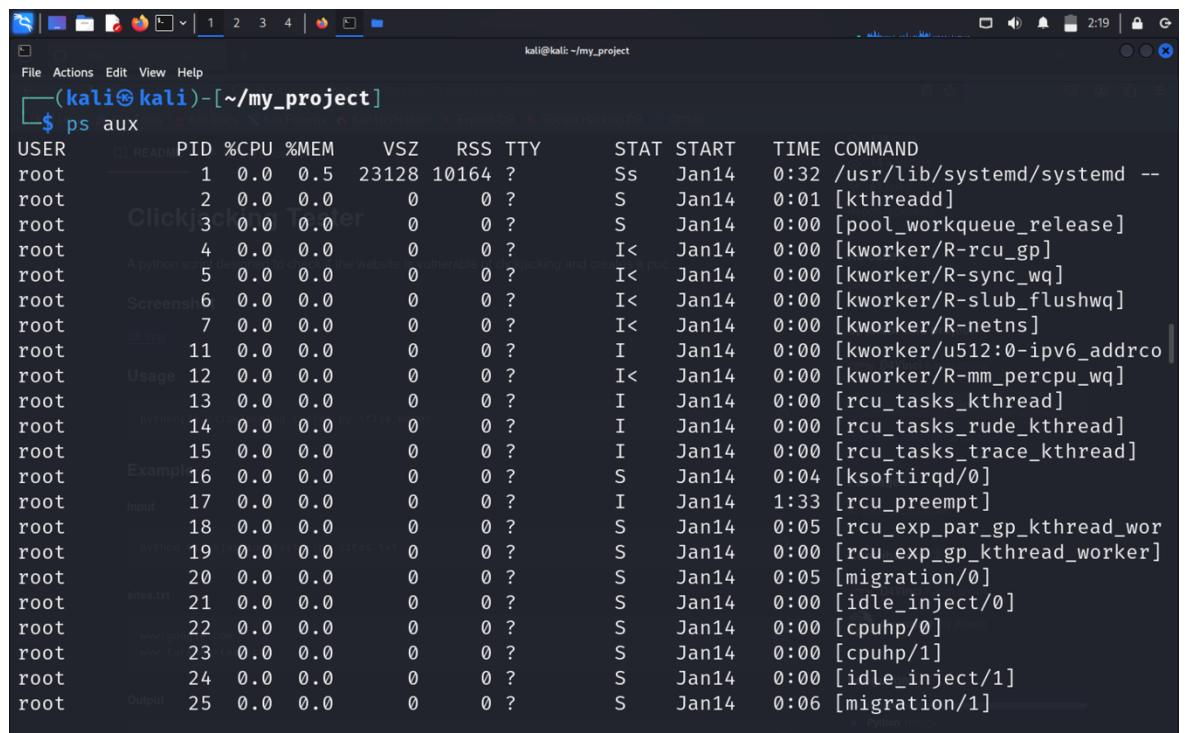
```
htop --version  
$ sudo apt remove --purge htop  
REMOVING:  
htop*  
A python script designed to check if the website is vulnerable of clickjacking and creates a poc.  
Summary:  
Upgrading: 0, Installing: 0, Removing: 1, Not Upgrading: 30  
Freed space: 416 kB  
Continue? [Y/n] Y  
(Reading database ... 408216 files and directories currently installed.)  
Removing htop (3.3.0-4) ...  
Processing triggers for desktop-file-utils (0.28-1) ...  
Processing triggers for hicolor-icon-theme (0.18-1) ...  
Processing triggers for man-db (2.13.0-1) ...  
Processing triggers for mailcap (3.74) ...  
Processing triggers for kali-menu (2024.4.0) ...
```

htop --version  
\$ sudo apt autoremove  
Summary:  
Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 30

```
htop --version  
$
```

## 7. Listed all running processes and identified the PID of sleep (if running):

```
ps aux | grep sleep
```



| USER | PID | %CPU | %MEM | VSZ   | RSS   | TTY | STAT | START | TIME | COMMAND                         |
|------|-----|------|------|-------|-------|-----|------|-------|------|---------------------------------|
| root | 1   | 0.0  | 0.5  | 23128 | 10164 | ?   | Ss   | Jan14 | 0:32 | /usr/lib/systemd/systemd --     |
| root | 2   | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:01 | [kthreadd]                      |
| root | 3   | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:00 | [pool_workqueue_release]        |
| root | 4   | 0.0  | 0.0  | 0     | 0     | ?   | I<   | Jan14 | 0:00 | [kworker/R-rcu_gp]              |
| root | 5   | 0.0  | 0.0  | 0     | 0     | ?   | I<   | Jan14 | 0:00 | [kworker/R-sync_wq]             |
| root | 6   | 0.0  | 0.0  | 0     | 0     | ?   | I<   | Jan14 | 0:00 | [kworker/R-slub_flushwq]        |
| root | 7   | 0.0  | 0.0  | 0     | 0     | ?   | I<   | Jan14 | 0:00 | [kworker/R-netns]               |
| root | 11  | 0.0  | 0.0  | 0     | 0     | ?   | I    | Jan14 | 0:00 | [kworker/u512:0-ipv6_addrco]    |
| root | 12  | 0.0  | 0.0  | 0     | 0     | ?   | I<   | Jan14 | 0:00 | [kworker/R-mm_percpu_wq]        |
| root | 13  | 0.0  | 0.0  | 0     | 0     | ?   | I    | Jan14 | 0:00 | [rcu_tasks_kthread]             |
| root | 14  | 0.0  | 0.0  | 0     | 0     | ?   | I    | Jan14 | 0:00 | [rcu_tasks_rude_kthread]        |
| root | 15  | 0.0  | 0.0  | 0     | 0     | ?   | I    | Jan14 | 0:00 | [rcu_tasks_trace_kthread]       |
| root | 16  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:04 | [ksoftirqd/0]                   |
| root | 17  | 0.0  | 0.0  | 0     | 0     | ?   | I    | Jan14 | 1:33 | [rcu_preempt]                   |
| root | 18  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:05 | [rcu_exp_par_gp_kthread_worker] |
| root | 19  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:00 | [rcu_exp_gp_kthread_worker]     |
| root | 20  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:05 | [migration/0]                   |
| root | 21  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:00 | [idle_inject/0]                 |
| root | 22  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:00 | [cpuhp/0]                       |
| root | 23  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:00 | [cpuhp/1]                       |
| root | 24  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:00 | [idle_inject/1]                 |
| root | 25  | 0.0  | 0.0  | 0     | 0     | ?   | S    | Jan14 | 0:06 | [migration/1]                   |

| root | 25        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:06  | [migration/1]              |                        |
|------|-----------|-----|-----|-----|---|---|----|-------|-------|----------------------------|------------------------|
| root | 26        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:07  | [ksoftirqd/1]              |                        |
| root | 29        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:00  | [cpuhp/2]                  |                        |
| root | 30        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:00  | [idle_inject/2]            |                        |
| root | 31        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:06  | [migration/2]              |                        |
| root | 32        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:03  | [ksoftirqd/2]              |                        |
| root | 35        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:00  | [cpuhp/3]                  |                        |
| root | 36        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:00  | [idle_inject/3]            |                        |
| root | 37        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:05  | [migration/3]              |                        |
| root | 38        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:05  | [ksoftirqd/3]              |                        |
| root | 40        | 0.0 | 0.0 | 0   | 0 | ? | I< | Jan14 | 0:01  | [kworker/3:0H-kblockd]     |                        |
| root | Usage     | 46  | 0.0 | 0.0 | 0 | 0 | ?  | S     | Jan14 | 0:00                       | [kdevtmpfs]            |
| root | 47        | 0.0 | 0.0 | 0   | 0 | ? | I< | Jan14 | 0:00  | [kworker/R-inet_frag_wq]   |                        |
| root | 49        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:00  | [kaudittd]                 |                        |
| root | 50        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 0:02  | [khungtaskd]               |                        |
| root | Example   | 51  | 0.0 | 0.0 | 0 | 0 | ?  | S     | Jan14 | 0:00                       | [oom_reaper]           |
| root | Input     | 53  | 0.0 | 0.0 | 0 | 0 | ?  | I<    | Jan14 | 0:00                       | [kworker/R-writeback]  |
| root | 54        | 0.0 | 0.0 | 0   | 0 | ? | S  | Jan14 | 1:21  | [kcompactd0]               |                        |
| root | 55        | 0.0 | 0.0 | 0   | 0 | ? | SN | Jan14 | 0:00  | [ksmd]                     |                        |
| root | 56        | 0.0 | 0.0 | 0   | 0 | ? | SN | Jan14 | 0:11  | [khugepaged]               |                        |
| root | sites.txt | 57  | 0.0 | 0.0 | 0 | 0 | I< | Jan14 | 0:00  | [kworker/R-integrityd]     |                        |
| root | www-data  | 58  | 0.0 | 0.0 | 0 | 0 | I< | Jan14 | 0:00  | [kworker/R-kblockd]        |                        |
| root | www-data  | 59  | 0.0 | 0.0 | 0 | 0 | I< | Jan14 | 0:00  | [kworker/R-blkcg_punt_bio] |                        |
| root | Output    | 60  | 0.0 | 0.0 | 0 | 0 | ?  | S     | Jan14 | 0:00                       | [irq/9-acpi]           |
| root |           | 64  | 0.0 | 0.0 | 0 | 0 | ?  | I<    | Jan14 | 0:00                       | [kworker/R-tpm_dev_wq] |

```
kali@kali: ~/my_project
File Actions Edit View Help
root      99  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/43-pciehp]
root     100  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/44-pciehp]
root     101  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/45-pciehp]
root     102  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/46-pciehp]
root     103  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/47-pciehp]
root     104  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/48-pciehp]
root     105  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/49-pciehp]
root     106  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/50-pciehp]
root     107  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/51-pciehp]
root     108  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/52-pciehp]
root     109  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/53-pciehp]
root     110  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/54-pciehp]
root     111  0.0  0.0    0   0 ?      S   Jan14  0:00 [irq/55-pciehp]
root     112  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-acpi_thermal_pm]
root     113  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-mld]
root     116  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-ipv6_addrconf]
root     118  0.0  0.0    0   0 ?      I   Jan14 0:00 [kworker/u512:1-ipv6_addrco]
root     122  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-kstrt]
root     126  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/u515:0]
root     133  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-cryptd]
root     283  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-ata_sff]
root     286  0.0  0.0    0   0 ?      S   Jan14 0:00 [scsi_eh_0]
root     288  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-scsi_tmf_0]
root     291  0.0  0.0    0   0 ?      S   Jan14 0:00 [scsi_eh_1]
root     292  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-scsi_tmf_1]
```

```
kali@kali: ~/my_project
File Actions Edit View Help
root     292  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-scsi_tmf_1]
root     294  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-mpt_poll_0]
root     295  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-mpt/0]
root     302  0.0  0.0    0   0 ?      S   Jan14 0:00 [irq/16-vmwgfx]
root     303  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-ttm]
root     316  0.0  0.0    0   0 ?      S   Jan14 0:00 [scsi_eh_2]
root     317  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-scsi_tmf_2]
root     349  0.0  0.0    0   0 ?      S   Jan14 0:07 [jbd2/sda1-8]
root     350  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-ext4-rsv-convers
root     397  0.0  0.0    0   0 ?      S   Jan14 0:03 [irq/56-vmw_vmcii]
root     398  0.0  0.0    0   0 ?      S   Jan14 0:00 [irq/57-vmw_vmcii]
root     399  0.0  0.0    0   0 ?      S   Jan14 0:01 [irq/58-vmw_vmcii]
root     570  0.0  0.0  8368 1936 ?    Ss  Jan14 0:16 /usr/sbin/haveged --Foregro
root     585  0.0  0.2 308828 5132 ?    Ssl Jan14 0:01 /usr/libexec/accounts-dae
message+ 587  0.0  0.2 10356 5432 ?    Ss  Jan14 0:33 /usr/bin/dbus-daemon --syst
polkitd  594  0.0  0.4 386372 8680 ?    Ssl Jan14 0:04 /usr/lib/polkit-1/polkitd -
root     597  0.0  0.2 18256 5212 ?    Ss  Jan14 0:04 /usr/lib/systemd/systemd-lo
root     626  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-rpciod]
root     627  0.0  0.0    0   0 ?      I< Jan14 0:00 [kworker/R-xprtiod]
root     639  0.0  0.1   6788 2664 ?    Ss  Jan14 0:02 /usr/sbin/cron -f
root     722  0.0  0.2 390176 4800 ?    Ssl Jan14 0:00 /usr/sbin/ModemManager
root     759  0.0  0.2 380788 4844 ?    SLsl Jan14 0:00 /usr/sbin/lightdm
root     774  0.8 31.9 1083916 633412 tty7  Ssl+ Jan14 25:02 /usr/lib/xorg/Xorg :0 -seat
root     776  0.0  0.1   8100 2204 tty1    Ss+ Jan14 0:00 /sbin/agetty -o -- \u --nor
rtkit    Output 841  0.0  0.1  86964 2820 ?    SNsl Jan14 0:11 /usr/libexec/rtkit-daemon
```



| kali | 1405 | 0.0 | 0.2 | 389064  | 4976   | ? | Ssl | Jan14 | 0:34  | /usr/libexec/gvfs-afc-volum |  |
|------|------|-----|-----|---------|--------|---|-----|-------|-------|-----------------------------|--|
| kali | 1413 | 0.0 | 0.2 | 308684  | 4404   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/gvfs-gphoto2-v |  |
| kali | 1418 | 0.0 | 0.2 | 307632  | 4604   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/gvfs-goa-volum |  |
| kali | 1435 | 0.0 | 0.2 | 533972  | 5520   | ? | Sl  | Jan14 | 0:00  | /usr/libexec/gvfsd-trash -- |  |
| kali | 1445 | 0.0 | 0.2 | 234244  | 4424   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/gvfsd-metadata |  |
| kali | 1451 | 0.0 | 0.1 | 46580   | 2932   | ? | Ss  | Jan14 | 0:00  | /usr/libexec/bluetooth/obex |  |
| kali | 1475 | 0.3 | 6.0 | 3311344 | 119368 | ? | Sl  | Jan14 | 11:02 | /usr/lib/firefox-esr/firefo |  |
| kali | 1548 | 0.0 | 0.3 | 226692  | 7276   | ? | Sl  | Jan14 | 0:00  | /usr/lib/firefox-esr/firefo |  |
| kali | 1551 | 0.0 | 0.3 | 480264  | 6500   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/xdg-desktop-po |  |
| kali | 1562 | 0.0 | 0.2 | 607076  | 4552   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/xdg-document-p |  |
| kali | 1569 | 0.0 | 0.2 | 308524  | 4656   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/xdg-permission |  |
| root | 1577 | 0.0 | 0.0 | 2576    | 1760   | ? | Ss  | Jan14 | 0:00  | fusermount3 -o rw,noexec,no |  |
| kali | 1583 | 0.0 | 0.3 | 406248  | 6944   | ? | Ssl | Jan14 | 0:00  | /usr/libexec/xdg-desktop-po |  |
| kali | 1609 | 0.0 | 1.5 | 2489148 | 31040  | ? | Sl  | Jan14 | 1:03  | /usr/lib/firefox-esr/firefo |  |
| kali | 1681 | 0.0 | 1.1 | 2452992 | 23480  | ? | Sl  | Jan14 | 0:57  | /usr/lib/firefox-esr/firefo |  |
| kali | 1769 | 0.0 | 0.3 | 223900  | 7672   | ? | Sl  | Jan14 | 0:00  | /usr/lib/firefox-esr/firefo |  |
| kali | 1804 | 0.0 | 2.2 | 2497772 | 45008  | ? | Sl  | Jan14 | 1:21  | /usr/lib/firefox-esr/firefo |  |
| kali | 1830 | 0.0 | 0.6 | 2413136 | 13272  | ? | Sl  | Jan14 | 0:45  | /usr/lib/firefox-esr/firefo |  |
| kali | 2063 | 0.0 | 0.6 | 2413720 | 13308  | ? | Sl  | Jan14 | 0:44  | /usr/lib/firefox-esr/firefo |  |
| root | 3154 | 0.0 | 0.0 | 6548    | 1680   | ? | S   | Jan14 | 0:00  | dbus-launch --autolaunch 55 |  |
| root | 3155 | 0.0 | 0.0 | 8344    | 1840   | ? | Ss  | Jan14 | 0:00  | /usr/bin/dbus-daemon --sysl |  |
| root | 3462 | 0.0 | 0.0 | 0       | 0      | ? | I<  | Jan14 | 0:00  | [kworker/R-tls-strp]        |  |
| kali | 4824 | 0.0 | 0.6 | 2413720 | 13224  | ? | Sl  | Jan14 | 0:46  | /usr/lib/firefox-esr/firefo |  |
| kali | 6902 | 0.0 | 0.2 | 460476  | 4712   | ? | Sl  | Jan14 | 0:00  | /usr/libexec/gvfsd-network  |  |
| kali | 6911 | 0.0 | 0.2 | 387928  | 4752   | ? | Sl  | Jan14 | 0:00  | /usr/libexec/gvfsd-dnssd -- |  |

| kali | 6911    | 0.0 | 0.2 | 387928 | 4752  | ?     | Sl  | Jan14 | 0:00 | /usr/libexec/gvfsd-dnssd -- |
|------|---------|-----|-----|--------|-------|-------|-----|-------|------|-----------------------------|
| kali | 6918    | 0.0 | 0.2 | 386272 | 5064  | ?     | Sl  | Jan14 | 0:09 | /usr/libexec/gvfsd-wsdd --s |
| kali | 6923    | 0.0 | 0.8 | 43068  | 16052 | ?     | S   | Jan14 | 0:09 | python3 /usr/bin/wsdd --no- |
| kali | 8157    | 0.0 | 0.2 | 386764 | 4824  | ?     | Sl  | Jan14 | 0:00 | /usr/libexec/gvfsd-computer |
| kali | 9024    | 0.0 | 1.6 | 761472 | 33332 | ?     | Sl  | Jan14 | 0:39 | /usr/bin/qterminal          |
| kali | 9035    | 0.0 | 0.2 | 13920  | 5768  | pts/1 | Ss  | Jan14 | 0:11 | /usr/bin/zsh                |
| root | 556942  | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan14 | 0:00 | [kworker/2:2H-kblockd]      |
| root | 722668  | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/0:1H-kblockd]      |
| root | 922162  | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/3:1H-kblockd]      |
| root | 1138015 | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/u517:2-ttm]        |
| root | 1145190 | 0.0 | 0.8 | 58260  | 16752 | ?     | Ss  | Jan15 | 0:02 | /usr/lib/systemd/systemd-jo |
| root | 1158980 | 0.0 | 0.2 | 29300  | 5612  | ?     | Ss  | Jan15 | 0:00 | /usr/lib/systemd/systemd-ud |
| root | 1158982 | 0.0 | 0.0 | 0      | 0     | ?     | S   | Jan15 | 0:00 | [psimon]                    |
| root | 1159231 | 0.3 | 0.3 | 317748 | 6552  | ?     | Ssl | Jan15 | 2:28 | /usr/bin/vmtoolsd           |
| root | 1164856 | 0.0 | 0.4 | 334496 | 9568  | ?     | Ssl | Jan15 | 0:01 | /usr/sbin/NetworkManager -- |
| root | 1164985 | 0.0 | 0.0 | 152356 | 1480  | ?     | Ssl | Jan15 | 0:00 | vmware-vmblock-fuse /run/vm |
| root | 1174834 | 0.0 | 0.0 | 0      | 0     | ?     | S   | Jan15 | 0:00 | [psimon]                    |
| root | 1189328 | 0.0 | 0.2 | 322484 | 5820  | ?     | Ssl | Jan15 | 0:00 | /usr/sbin/pcscd --foregroun |
| root | 1202041 | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/u516:2-ttm]        |
| root | 1244251 | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/u517:0-ttm]        |
| root | 1272785 | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/1:0H-kblockd]      |
| root | 1309657 | 0.0 | 0.0 | 0      | 0     | ?     | I<  | Jan15 | 0:00 | [kworker/2:0H-kblockd]      |
| root | 1379346 | 0.0 | 0.0 | 0      | 0     | ?     | I   | Jan15 | 0:00 | [kworker/u514:2-events_unbo |
| root | 1388307 | 0.0 | 0.0 | 0      | 0     | ?     | I   | Jan15 | 0:07 | [kworker/3:2-events]        |
| root | 1436253 | 0.0 | 0.0 | 0      | 0     | ?     | I   | 00:11 | 0:00 | [kworker/u513:1-events_unbo |

```

kali@kali: ~/my_project
$ ps aux | grep sleep
kali    1500858  0.0  0.1  6468  2232 pts/1    S+   02:21   0:00 grep --color=auto sleep

```

```

kali@kali: ~/my_project
$ kill 1500858
kill: kill 1500858 failed: no such process

kali@kali: ~/my_project
$ pkill sleep

```

**Terminated the process using kill:**

pkill sleep

```

kali@kali: ~/my_project
$ sudo kill 1262
[sudo] password for kali:

```

## 8. Displayed the machine's IP address:

```
ifconfig
```

The screenshot shows a terminal window titled "kali@kali: ~/my\_project". The command "ifconfig" is run, displaying network interface details. The output shows two interfaces: eth0 (BROADCAST, RUNNING) and lo (LOOPBACK, RUNNING). The eth0 interface has an IP of 172.16.191.128 and a MAC of fe80::f8ab:fb73:6326:5e9c. The lo interface has an IP of 127.0.0.1.

```
kali@kali:~/my_project]$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.16.191.128  netmask 255.255.255.0  broadcast 172.16.191.255
              inet6 fe80::f8ab:fb73:6326:5e9c  prefixlen 64  scopeid 0x20<link>
                ether 00:0c:29:17:47:fc  txqueuelen 1000  (Ethernet)
                  RX packets 1094893  bytes 1558463482 (1.4 GiB)
                  RX errors 0  dropped 347  overruns 0  frame 0
                  TX packets 169433  bytes 14912864 (14.2 MiB)
                  TX errors 0  dropped 18 overruns 0  carrier 0  collisions 0
Usage:          1094893 bytes (1.0 GiB)
lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
              inet6 ::1  prefixlen 128  scopeid 0x10<host>
                loop  txqueuelen 1000  (Local Loopback)
                  RX packets 140  bytes 12719 (12.4 KiB)
                  RX errors 0  dropped 0  overruns 0  frame 0
                  TX packets 140  bytes 12719 (12.4 KiB)
                  TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
sites.txt
kali@kali:~/my_project]$
```

## Verified connectivity to google.com:

```
ping google.com
```

The screenshot shows a terminal window titled "kali@kali: ~/my\_project". The command "ping google.com" is run, displaying a series of ICMP echo requests sent to the IP 142.250.196.14. The output shows 19 packets transmitted, 19 received, with 0% packet loss and a round-trip time of 18042ms. The ping command is terminated with a Control-C (^C).

```
kali@kali:~/my_project]$ ping google.com
PING google.com (142.250.196.14) 56(84) bytes of data.
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=1 ttl=128 time=20.4 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=2 ttl=128 time=20.0 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=3 ttl=128 time=19.0 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=4 ttl=128 time=22.9 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=5 ttl=128 time=24.0 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=6 ttl=128 time=21.0 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=7 ttl=128 time=19.5 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=8 ttl=128 time=19.8 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=9 ttl=128 time=20.2 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=10 ttl=128 time=21.9 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=11 ttl=128 time=19.2 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=12 ttl=128 time=18.0 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=13 ttl=128 time=20.2 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=14 ttl=128 time=19.4 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=15 ttl=128 time=19.2 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=16 ttl=128 time=20.5 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=17 ttl=128 time=20.2 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=18 ttl=128 time=19.9 ms
64 bytes from maa03s44-in-f14.1e100.net (142.250.196.14): icmp_seq=19 ttl=128 time=86.8 ms
^C
--- google.com ping statistics ---
19 packets transmitted, 19 received, 0% packet loss, time 18042ms
rtt min/avg/max/mdev = 18.013/23.778/86.756/14.905 ms
kali@kali:~/my_project]$
```

## Listed all active network connections:

```
netstat -tuln
```

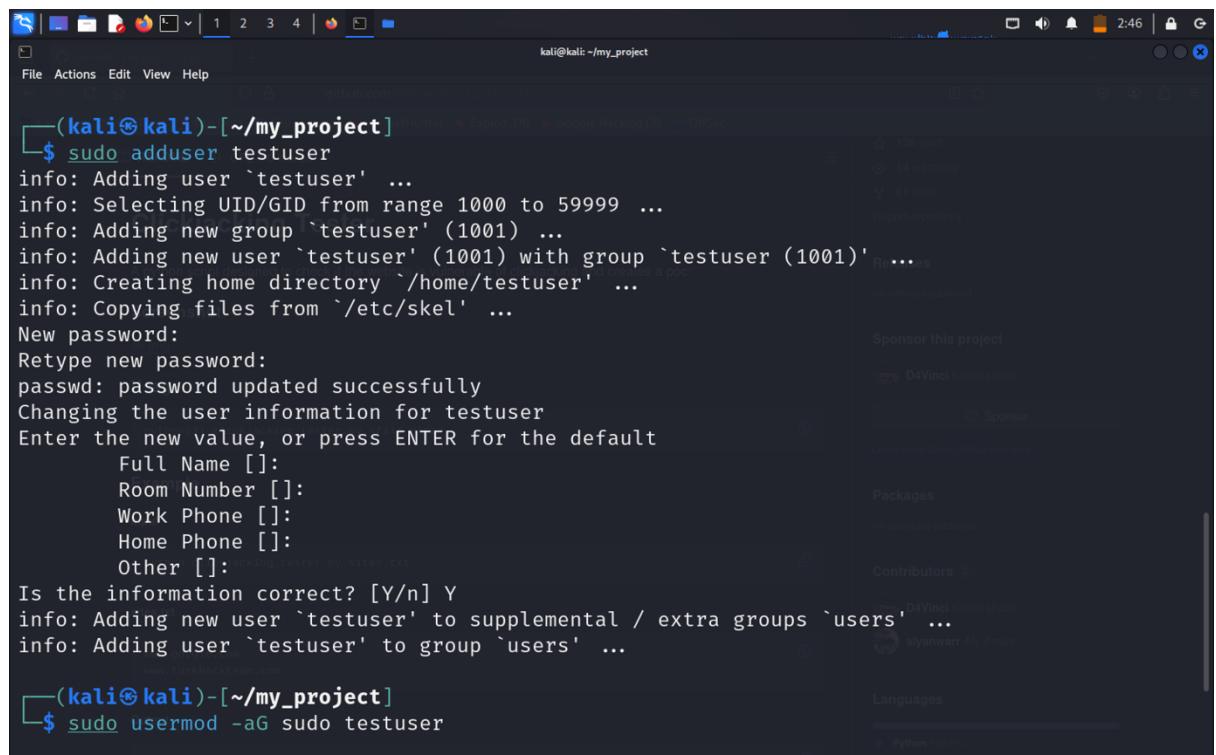


```
(kali㉿kali)-[~/my_project]
$ netstat -tuln
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
udp        0      0 172.16.191.128:3702     0.0.0.0:*
udp        0      0 239.255.255.250:3702    0.0.0.0:*
udp        0      0 0.0.0.0:56243          0.0.0.0:*
udp6       0      0 :::33260              :::*
udp6       0      0 fe80::f8ab:fb73:63:3702  :::*
udp6       0      0 ff02::c:3702          :::*

(kali㉿kali)-[~/my_project]
$
```

## 9. Added a new user named testuser and granted sudo privileges:

```
sudo adduser testuser
sudo usermod -aG sudo testuser
su testuser
```



```
(kali㉿kali)-[~/my_project]
$ sudo adduser testuser
info: Adding user `testuser' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `testuser' (1001) ...
info: Adding new user `testuser' (1001) with group `testuser (1001)'
info: Creating home directory `/home/testuser' ...
info: Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for testuser
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] Y
info: Adding new user `testuser' to supplemental / extra groups `users' ...
info: Adding user `testuser' to group `users' ...

(kali㉿kali)-[~/my_project]
$ sudo usermod -aG sudo testuser
```

The screenshot shows a terminal window with the following session:

```
(kali㉿kali)-[~/my_project]
$ su testuser
Password: jacking Tester
(testuser㉿kali)-[/home/kali/my_project]
$ su kali
Password:
(testuser㉿kali)-[~/my_project]
$ sudo usermod -aG sudo testuser
[sudo] password for testuser:
(testuser㉿kali)-[/home/kali/my_project]
$
```

The terminal is running on a Kali Linux system, and the user has successfully gained root privileges as the testuser.

## 10. Created a shell script `hello.sh` to output "Hello, World!":

```
echo 'echo "Hello, World!"' > hello.sh
chmod +x hello.sh
./hello.sh
```

The screenshot shows a terminal window with the following session:

```
(testuser㉿kali)-[/home/kali/my_project]
$ su kali
Password: jacking Tester
(kali㉿kali)-[~/my_project]
$ echo 'echo "Hello, World!"' > hello.sh
(kali㉿kali)-[~/my_project]
$ chmod +x hello.sh
(kali㉿kali)-[~/my_project]
$ ./hello.sh
Hello, World!
(kali㉿kali)-[~/my_project]
$
```

The terminal is running on a Kali Linux system, and the user has created and executed a shell script named `hello.sh` which outputs "Hello, World!".

## 11. Created a tarball of my\_project, extracted it, and compressed it using gzip:

```
tar -cvf my_project.tar my_project  
tar -xvf my_project.tar  
gzip my_project.tar
```

A terminal window titled 'kali@kali: ~' showing the following commands and output:

```
$ tar cvf my_project.tar my_project  
my_project/  
my_project/my_project.tar  
my_project/script.sh  
my_project/hello.sh  
my_project/notes.txt  
$ tar xvf my_project.tar  
my_project/  
my_project/my_project.tar  
my_project/script.sh  
my_project/hello.sh  
my_project/notes.txt  
$ gzip my_project.tar
```

## 12. Checked disk usage, memory usage, and CPU information:

```
df -h          # Disk usage  
free -h        # Memory usage  
cat /proc/cpuinfo # CPU information
```

A terminal window titled 'kali@kali: ~' showing the following commands and output:

```
$ df -h  
Filesystem      Size  Used Avail Use% Mounted on  
udev            907M    0  907M   0% /dev  
tmpfs           194M  1.2M 193M   1% /run  
/dev/sda1        79G   18G  57G  24% /  
tmpfs           969M  4.0K 969M   1% /dev/shm  
tmpfs            5.0M    0  5.0M   0% /run/lock  
tmpfs           969M  124K 968M   1% /tmp  
tmpfs            1.0M    0  1.0M   0% /run/credentials/getty@tty1.service  
tmpfs            194M  132K 194M   1% /run/user/1000  
tmpfs            1.0M    0  1.0M   0% /run/credentials/systemd-journald.servic  
e  
$ free -h  
              total        used       free      shared  buff/cache   availab  
le  
Mem:       1.9Gi     1.5Gi    170Mi     16Mi     478Mi    437Mi  
Swap:      1.0Gi     690Mi    333Mi
```

```
(kali㉿kali)-[~]
$ cat /proc/cpuinfo
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 142
model name     : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping        : 9
microcode      : 0xf6
cpu MHz        : 2304.000
cache size     : 4096 KB
physical id    : 0
siblings        : 2
core id         : 0
cpu cores      : 2
apicid          : 0
initial apicid : 0
fpu             : yes
fpu_exception   : yes
cpuid level    : 22
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ss ht syscall nx pdpe1gb
rdtscp lm constant_tsc arch_perfmon nopl xtopology tsc_reliable nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 fma cx16 pcid sse4_1 sse
4_2 x2apic movebe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch pti ssbd ibrs ibrp stibp fsgsbase t
sc_adjust bmi1 avx2 smp bmi2 invpcid rdseed adx smap clflushopt xsaveopt xsaves arat md_clear flush_lld arch_capabilities
bugs            : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbs mmio_stale_data retbleed gds bhi
bogomips        : 4608.00
clflush size    : 64
cache_alignment : 64
address sizes   : 45 bits physical, 48 bits virtual
power management:

processor       : 1
vendor_id      : GenuineIntel
cpu family     : 6
model          : 142
model name     : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping        : 9
```

```
(kali㉿kali)-[~]
$ cat /proc/cpuinfo
address sizes  : 45 bits physical, 48 bits virtual
power management:

processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 142
model name     : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping        : 9
microcode      : 0xf6
cpu MHz        : 2304.000
cache size     : 4096 KB
physical id    : 0
siblings        : 2
core id         : 1
cpu cores      : 2
apicid          : 1
initial apicid : 1
fpu             : yes
fpu_exception   : yes
cpuid level    : 22
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ss ht syscall nx pdpe1gb
rdtscp lm constant_tsc arch_perfmon nopl xtopology tsc_reliable nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 fma cx16 pcid sse4_1 sse
4_2 x2apic movebe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch pti ssbd ibrs ibrp stibp fsgsbase t
sc_adjust bmi1 avx2 smp bmi2 invpcid rdseed adx smap clflushopt xsaveopt xsaves arat md_clear flush_lld arch_capabilities
bugs            : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbs mmio_stale_data retbleed gds bhi
bogomips        : 4608.00
clflush size    : 64
cache_alignment : 64
address sizes   : 45 bits physical, 48 bits virtual
power management:

processor       : 1
vendor_id      : GenuineIntel
cpu family     : 6
model          : 142
model name     : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping        : 9
```

```
File Actions Edit View Help
address sizes : 45 bits physical, 48 bits virtual
power management:

processor : 2
vendor_id : GenuineIntel
cpu family : 6
model : 142
model name : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping : 9
microcode : 0xf6
cpu MHz : 2304.000
cache size : 4096 KB
physical id : 1
siblings : 2
core id : 0
cpu cores : 2
apicid : 2
initial apicid : 2
fpu : yes
fpu_exception : yes
cpuid level : 22
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ss ht syscall nx pdpe1gb
rdtscp lm constant_tsc arch_perfmon nopl xtopology tsc_reliable nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 fma cx16 pcid sse4_1 sse
4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch ptib sbbd ibrs ibpb stibp fsgsbase t
sc_adjust bmi1 avx2 smep bmi2 invpcid rdseed adx smap clflushopt xsaveopt xsaves xgetbv1 xsaves arat md_clear flush_lid arch_capabilities
bugs : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbds mmio_stale_data retbleed gds bhi
bogomips : 4608.00
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:

processor : 3
vendor_id : GenuineIntel
cpu family : 6
model : 142
model name : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping : 9
```

```
File Actions Edit View Help
bogomips : 4608.00
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:

processor : 3
vendor_id : GenuineIntel
cpu family : 6
model : 142
model name : Intel(R) Core(TM) i5-7360U CPU @ 2.30GHz
stepping : 9
microcode : 0xf6
cpu MHz : 2304.000
cache size : 4096 KB
physical id : 1
siblings : 2
core id : 1
cpu cores : 2
apicid : 3
initial apicid : 3
fpu : yes
fpu_exception : yes
cpuid level : 22
wp : yes
flags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ss ht syscall nx pdpe1gb
rdtscp lm constant_tsc arch_perfmon nopl xtopology tsc_reliable nonstop_tsc cpuid tsc_known_freq pni pclmulqdq ssse3 fma cx16 pcid sse4_1 sse
4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch ptib sbbd ibrs ibpb stibp fsgsbase t
sc_adjust bmi1 avx2 smep bmi2 invpcid rdseed adx smap clflushopt xsaveopt xsaves xgetbv1 xsaves arat md_clear flush_lid arch_capabilities
bugs : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit srbds mmio_stale_data retbleed gds bhi
bogomips : 4608.00
clflush size : 64
cache_alignment : 64
address sizes : 45 bits physical, 48 bits virtual
power management:
```

(kali㉿kali)-[~]