

# Assessment-1

## Title: Linux Command List Assessment

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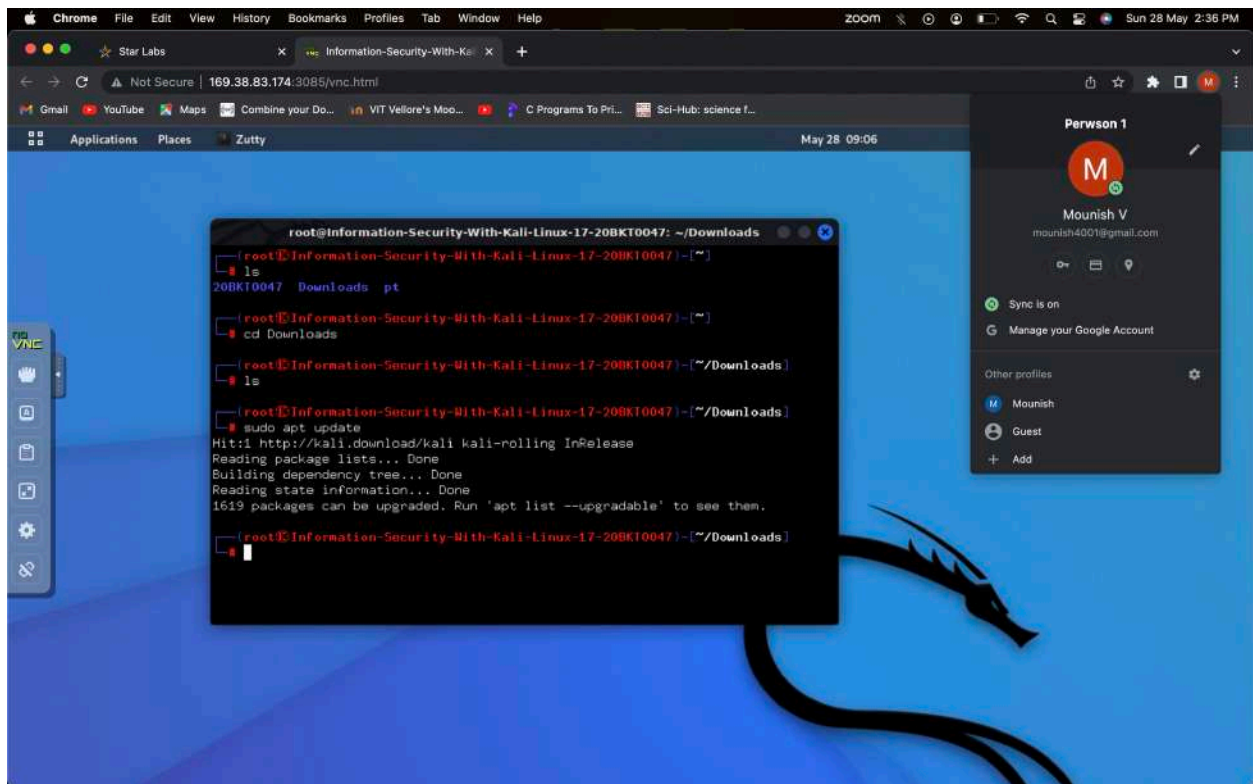
**Name: B Venkata Mounish Reddy**

**Reg No: 20BDS0149**

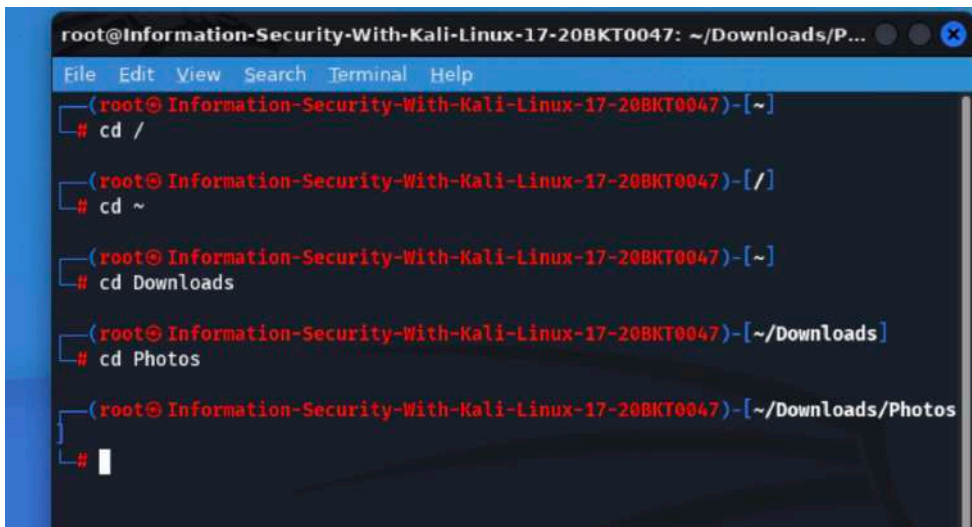
**Campus: VIT Vellore**

### File and Directory Operations:

ls: List files and directories

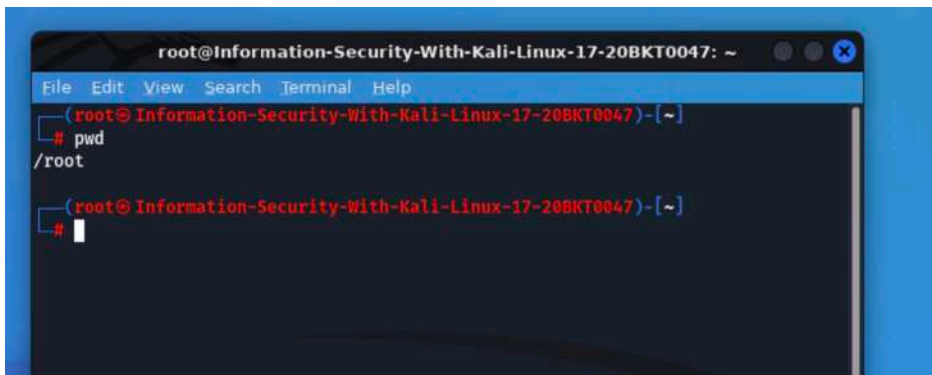


cd: Change directory



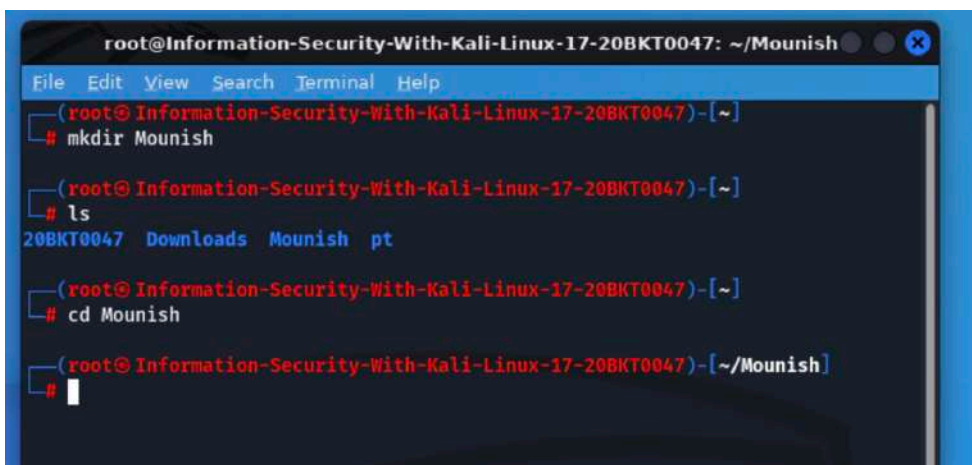
```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads/P...
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd /
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[/]
# cd ~
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# cd Photos
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Photos]
#
```

pwd: Print working directory



```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# pwd
/root
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```

mkdir: Make directory



```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Mounish
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# mkdir Mounish
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ls
20BKT0047 Downloads Mounish pt
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Mounish
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Mounish]
#
```

touch: Create an empty file

```
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# touch file

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ls
20BKT0047 Downloads file Mounish pt

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```

cp: Copy files and directories

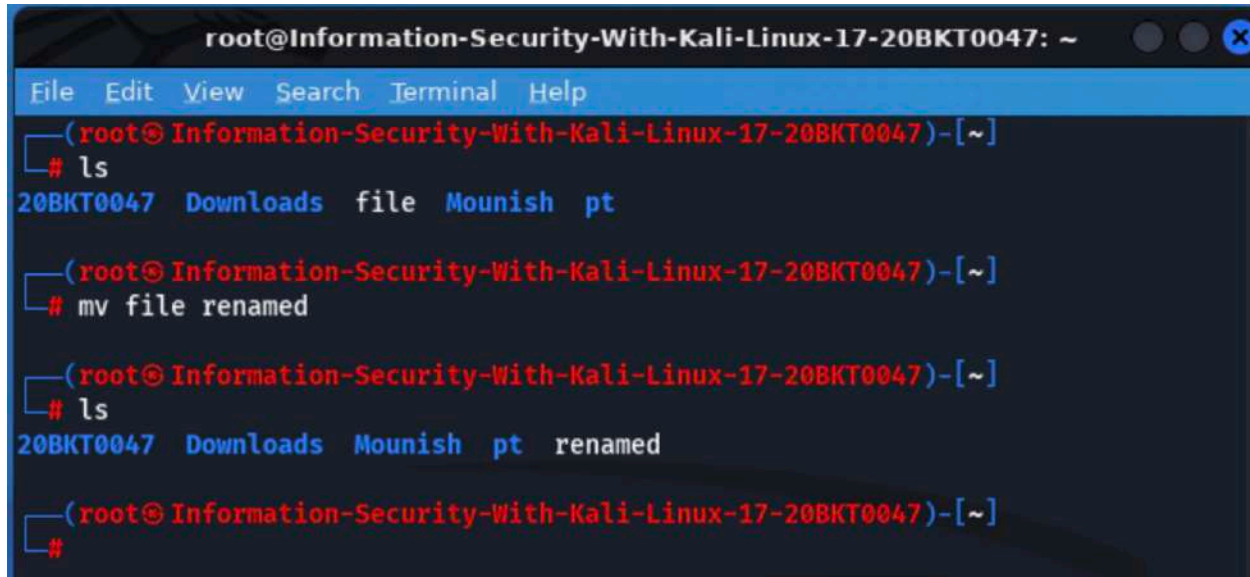
```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Mounish
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ls
20BKT0047 Downloads file Mounish pt

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cp file Mounish && cd Mounish

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Mounish]
# ls
file

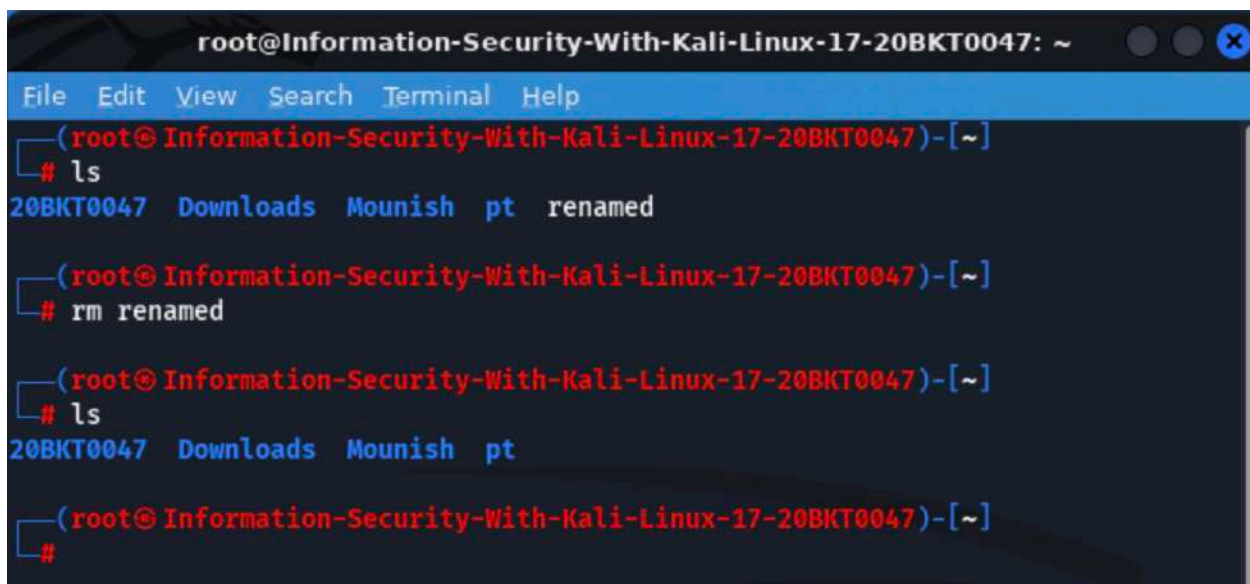
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Mounish]
#
```

mv: Move or rename files and directories

A terminal window titled 'root@Information-Security-With-Kali-Linux-17-20BKT0047: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows a sequence of commands: 'ls' followed by 'mv file renamed', and then 'ls' again. The output of the second 'ls' command shows the file 'file' has been renamed to 'renamed'.

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~  
File Edit View Search Terminal Help  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# ls  
20BKT0047 Downloads file Mounish pt  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# mv file renamed  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# ls  
20BKT0047 Downloads Mounish pt renamed  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
#
```

rm: Remove files and directories

A terminal window titled 'root@Information-Security-With-Kali-Linux-17-20BKT0047: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows a sequence of commands: 'ls' followed by 'rm renamed', and then 'ls' again. The output of the second 'ls' command shows that the file 'renamed' has been removed. The file 'file' from the previous screenshot is now missing from the directory listing.

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~  
File Edit View Search Terminal Help  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# ls  
20BKT0047 Downloads Mounish pt renamed  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# rm renamed  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# ls  
20BKT0047 Downloads Mounish pt  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
#
```



find: Search for files and directories

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ls
20BKT0047 Downloads Mounish pt

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# find Mounish
Mounish
Mounish/file

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```

## File Viewing and Editing:

cat: Concatenate and display file content

```
File Edit View Search Terminal Help
# ls
text.txt

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# cat text
cat: text: No such file or directory

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# cat text.txt
hi this is Mounish, i'm from Bangalore

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# cat -n text.txt
 1 hi this is Mounish, i'm from Bangalore
 2

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
#
```

less: View file content with pagination

head: Display the beginning of a file

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# cd Movies

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# ls
text.txt

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# cat text.txt
hi this is Mounish, i'm from Bangalore. $ less

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# head text.txt
hi this is Mounish, i'm from Bangalore. $ less

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
#
```

tail: Display the end of a file

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads/M...
File Edit View Search Terminal Help

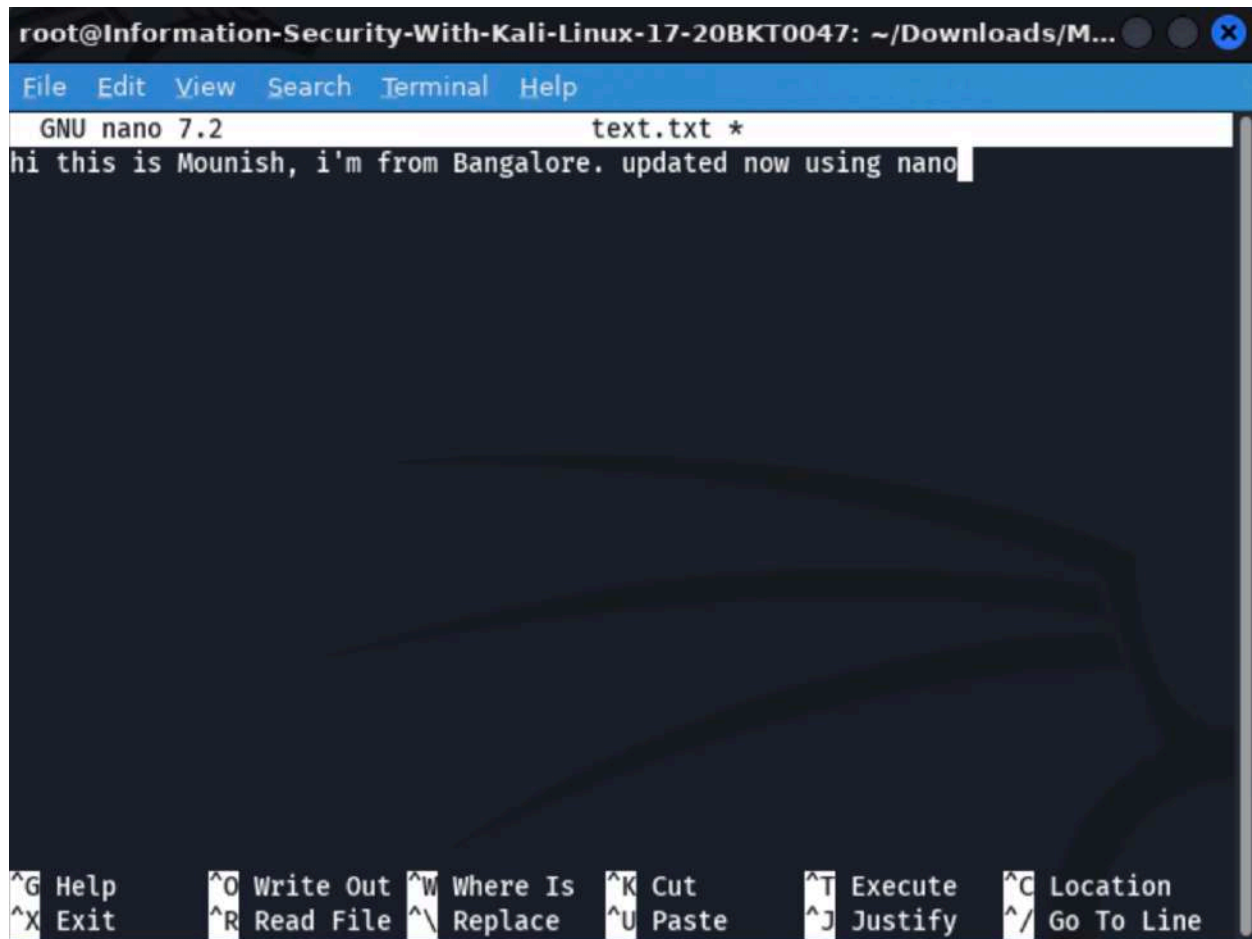
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# cd Movies

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# ls
text.txt

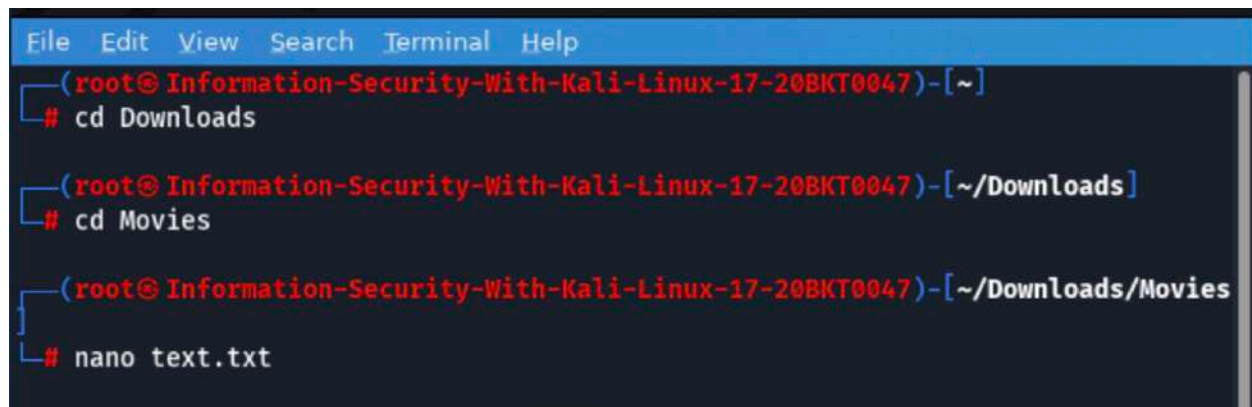
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# tail text.txt
hi this is Mounish, i'm from Bangalore. $ less
```

nano: Text editor for creating and editing files



```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads/M...
File Edit View Search Terminal Help
GNU nano 7.2 text.txt *
hi this is Mounish, i'm from Bangalore. updated now using nano

^G Help      ^O Write Out ^W Where Is  ^K Cut      ^T Execute  ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify  ^/ Go To Line
```



```
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads

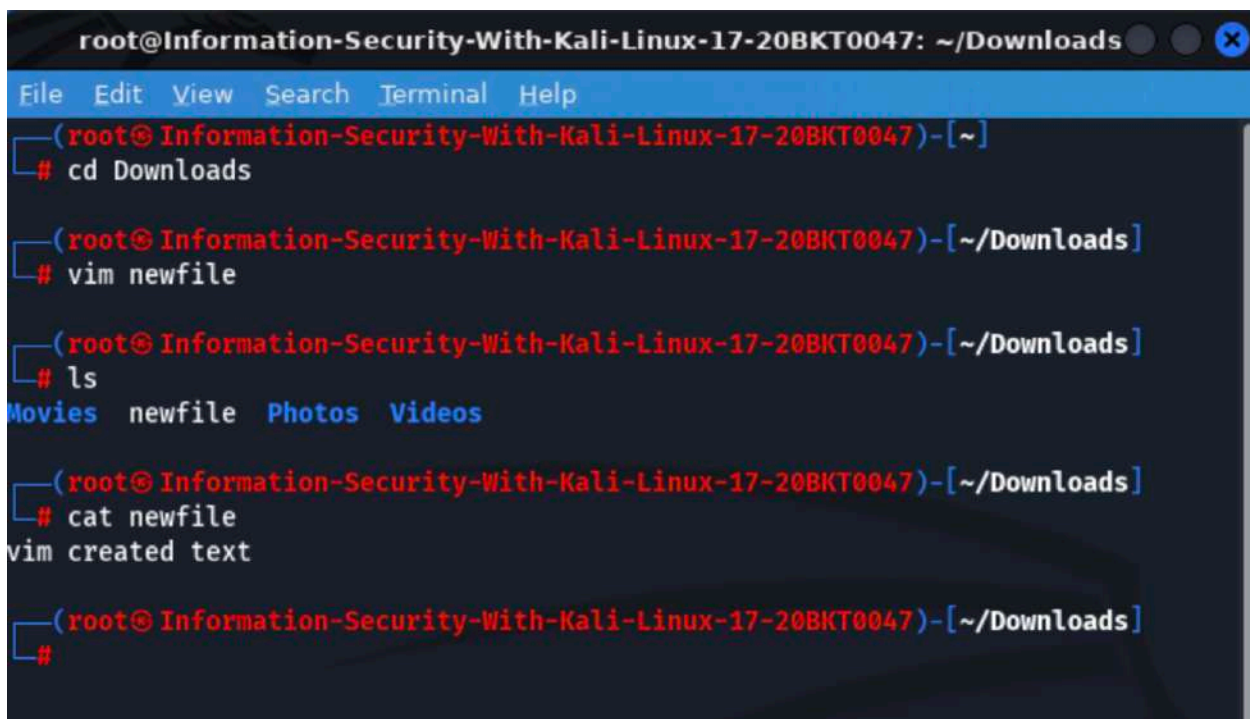
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# cd Movies

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads/Movies]
# nano text.txt
```

vi/vim: Powerful text editor for experienced users



A screenshot of the Vim text editor interface. The title bar at the top reads "root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads". Below the title bar is a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The main editing area is dark blue with a faint, stylized tree-like graphic. The text "vim created text" is visible at the top left of the editing area. The bottom status bar shows "-- INSERT --" on the left, "1,17" in the center, and "All" on the right.



A screenshot of a terminal window showing the steps to create and view a new file. The title bar at the top reads "root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads". The terminal output is as follows:

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# vim newfile

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# ls
Movies  newfile  Photos  Videos

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# cat newfile
vim created text

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
#
```



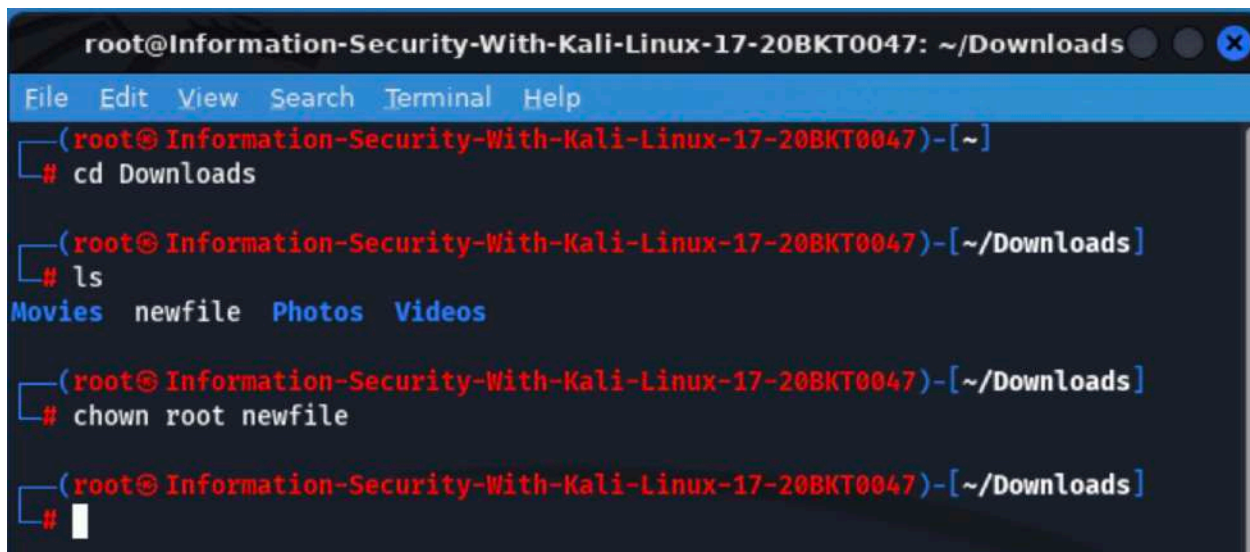
## File Permissions:

chmod: Change file permissions

A terminal window titled 'root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal shows the following commands and output:

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# cd Downloads  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
# ls  
Movies  newfile  Photos  Videos  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
# chmod u-rwx newfile  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
# chmod a=r newfile  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
#
```

chown: Change file owner

A terminal window titled 'root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal shows the following commands and output:

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# cd Downloads  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
# ls  
Movies  newfile  Photos  Videos  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
# chown root newfile  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]  
#
```

chgrp: Change file group

```
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# addgroup sample
Adding group `sample' (GID 1000) ...
Done.

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# chgroup 1001 new
Command 'chgroup' not found, did you mean:
  command 'c4group' from deb openclonk
Try: apt install <deb name>

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# sudo su
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# addgroup sample
addgroup: The group `sample' already exists.

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# chgroup 1001 new
```

## File Compression and Archiving:

tar: Archive files

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads
File Edit View Search Terminal Help
Movies newfile Photos Videos

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# tarp -cf arch newfile
Command 'tarp' not found, did you mean:
  command 'tar' from deb tar
  command 'arp' from deb net-tools
  command 'rarp' from deb net-tools
  command 'warp' from deb libghc-wai-app-static-dev
  command 'tap' from deb node-tap
Try: apt install <deb name>

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# tar -cf arch newfile

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# tar -xf arch

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# ls
arch Movies newfile Photos Videos

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
#
```

gzip: Compress files

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads
File Edit View Search Terminal Help

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# gzip newfile

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
#
```

unzip: Extract files from a ZIP archive

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~/Downloads
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# ls
arch  Movies  newfile.gz  Photos  Videos
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# gunzip newfile.gz
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# ls
arch  Movies  newfile  Photos  Videos
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
#
```

## Process Management:

ps: List running processes

```
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ps
  PID TTY          TIME CMD
 12373 pts/1        00:00:00 bash
 12390 pts/1        00:00:00 ps
```



top: Display real-time system information and processes

File Edit View Search Terminal Help											
top - 10:01:06 up 2:38, 0 users, load average: 0.16, 0.13, 0.17											
Tasks: 74 total, 1 running, 73 sleeping, 0 stopped, 0 zombie											
%Cpu(s): 2.7 us, 0.0 sy, 0.0 ni, 97.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st											
MiB Mem : 3814.7 total, 2701.4 free, 642.6 used, 470.7 buff/cache											
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 3172.1 avail Mem											
PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
327	root	20	0	157272	50112	8336	S	1.3	1.3	1:03.06	nessusd
10636	root	20	0	3335728	323192	99120	S	0.7	8.3	0:26.14	gnome-s+
10632	root	20	0	274512	89572	44356	S	0.3	2.3	0:08.02	Xtigerv+
12346	root	20	0	698644	38664	27204	S	0.3	1.0	0:00.27	gnome-t+
1	root	20	0	168676	10460	6168	S	0.0	0.3	0:01.02	systemd
75	root	20	0	33144	12360	10996	S	0.0	0.3	0:03.45	systemd+
94	root	20	0	23496	4600	2856	S	0.0	0.1	0:00.07	systemd+
111	root	20	0	8252	4232	1100	S	0.0	0.1	0:00.40	haveged
124	root	20	0	236844	4760	3888	S	0.0	0.1	0:00.26	account+
125	root	20	0	6600	1628	1384	S	0.0	0.0	0:00.04	cron
126	message+	20	0	10848	4820	2572	S	0.0	0.1	0:01.77	dbus-da+
131	polkitd	20	0	240372	7968	4572	S	0.0	0.2	0:00.10	polkitd
132	syslog	20	0	156496	3116	2532	S	0.0	0.1	0:00.27	rsyslogd
133	root	20	0	16880	5988	4912	S	0.0	0.2	0:00.10	systemd+
134	root	20	0	6916	2132	1828	S	0.0	0.1	0:00.77	bash
141	root	20	0	258092	11828	9180	S	0.0	0.3	0:00.16	Network+
232	root	20	0	5860	2588	1752	S	0.0	0.1	0:00.01	dhclient

kill: Terminate processes



```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# kill
kill: usage: kill [-s sigspec | -n signum | -sigspec] pid | jobspec ... or kill
-l [sigspec]

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# kill -l
1) SIGHUP      2) SIGINT      3) SIGQUIT     4) SIGILL      5) SIGTRAP
6) SIGABRT     7) SIGBUS      8) SIGFPE      9) SIGKILL     10) SIGUSR1
11) SIGSEGV    12) SIGUSR2    13) SIGPIPE    14) SIGALRM     15) SIGTERM
16) SIGSTKFLT  17) SIGCHLD    18) SIGCONT    19) SIGSTOP     20) SIGTSTP
21) SIGTTIN    22) SIGTTOU    23) SIGURG     24) SIGXCPU     25) SIGXFSZ
26) SIGVTALRM  27) SIGPROF    28) SIGWINCH   29) SIGIO        30) SIGPWR
31) SIGSYS     34) SIGRTMIN   35) SIGRTMIN+1 36) SIGRTMIN+2 37) SIGRTMIN+3
38) SIGRTMIN+4 39) SIGRTMIN+5 40) SIGRTMIN+6 41) SIGRTMIN+7 42) SIGRTMIN+8
43) SIGRTMIN+9 44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6 59) SIGRTMAX-5 60) SIGRTMAX-4  61) SIGRTMAX-3  62) SIGRTMAX-2
63) SIGRTMAX-1 64) SIGRTMAX

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```

bg: Run processes in the background

fg: Bring background processes to the foreground

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# bg
bash: bg: current: no such job

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# jobs

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# fg
bash: fg: current: no such job

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# jobs

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```

### System Information:

uname: Print system information

df: Display disk space usage

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~  
File Edit View Search Terminal Help  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# uname  
Linux  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# df
```

Filesystem				Used	Available	Use%	Mounted on	1K-blocks
				887440512				
	8022144	879418368	1%	/				
none								492
	4	488	1%	/dev				
udev								124721436
	0	124721436	0%	/dev/tty				
tmpfs								100
	0	100	0%	/dev/lxd				
tmpfs								100
	0	100	0%	/dev/.lxd-mounts				
tmpfs								124738904
	0	124738904	0%	/dev/shm				
tmpfs								49895564
	836	49894728	1%	/run				
tmpfs								5120
	0	5120	0%	/run/lock				

free: Display memory usage

uptime: Show system uptime

who: Display logged-in users

w: Display logged-in users and their activities

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# free
              total        used        free      shared  buff/cache   available
Mem:           3906248       657260       2766840        11284        482148       3248988
Swap:              0              0              0

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# uptime
10:05:03 up  2:42,  0 users,  load average: 0.04, 0.09, 0.15

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# who

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# w
10:05:10 up  2:42,  0 users,  load average: 0.04, 0.09, 0.15
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```



## Networking:

ifconfig: Configure network interfaces

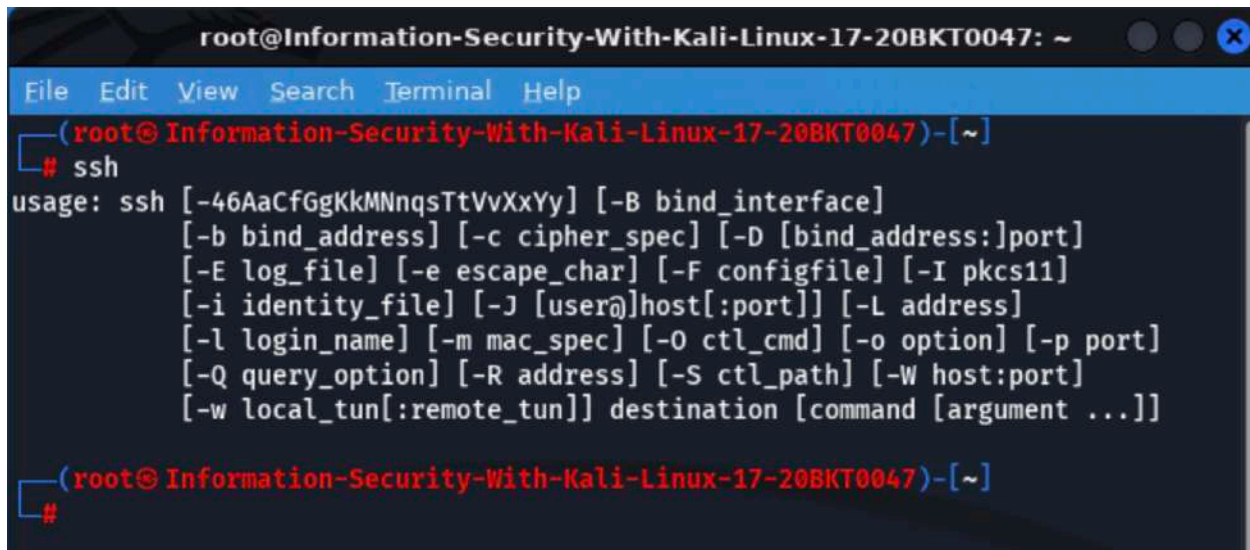
```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.12.197.185 netmask 255.255.0.0 broadcast 10.12.255.255
    inet6 fe80::216:3eff:fe64:6548 prefixlen 64 scopeid 0x20<link>
    ether 00:16:3e:64:65:48 txqueuelen 1000 (Ethernet)
    RX packets 126023 bytes 10523825 (10.0 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 97464 bytes 178180942 (169.9 MiB)
    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 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 162264 bytes 179993769 (171.6 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 162264 bytes 179993769 (171.6 MiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

ping: Send ICMP echo requests to a network host

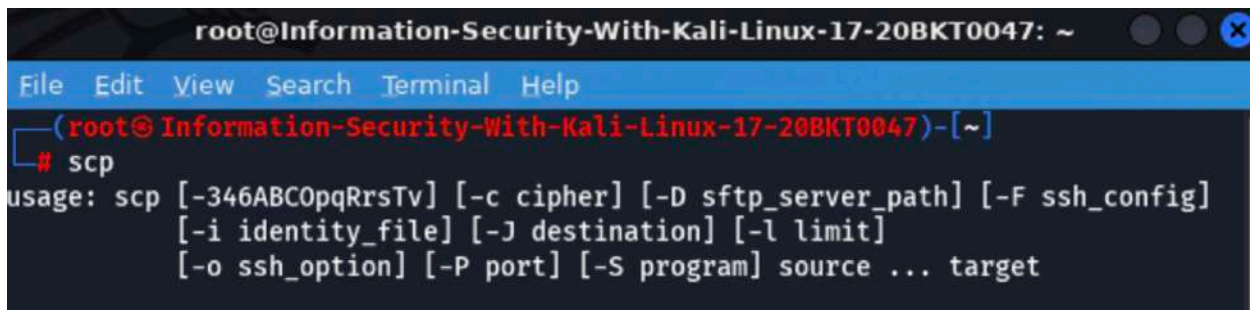
```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ping www.google.com
PING www.google.com (142.250.182.68): 56 data bytes
64 bytes from 142.250.182.68: icmp_seq=0 ttl=116 time=33.690 ms
64 bytes from 142.250.182.68: icmp_seq=1 ttl=116 time=32.716 ms
64 bytes from 142.250.182.68: icmp_seq=2 ttl=116 time=32.717 ms
64 bytes from 142.250.182.68: icmp_seq=3 ttl=116 time=32.727 ms
64 bytes from 142.250.182.68: icmp_seq=4 ttl=116 time=32.709 ms
64 bytes from 142.250.182.68: icmp_seq=5 ttl=116 time=32.679 ms
64 bytes from 142.250.182.68: icmp_seq=6 ttl=116 time=32.681 ms
64 bytes from 142.250.182.68: icmp_seq=7 ttl=116 time=32.654 ms
64 bytes from 142.250.182.68: icmp_seq=8 ttl=116 time=32.685 ms
64 bytes from 142.250.182.68: icmp_seq=9 ttl=116 time=32.690 ms
64 bytes from 142.250.182.68: icmp_seq=10 ttl=116 time=32.723 ms
64 bytes from 142.250.182.68: icmp_seq=11 ttl=116 time=32.712 ms
64 bytes from 142.250.182.68: icmp_seq=12 ttl=116 time=32.681 ms
64 bytes from 142.250.182.68: icmp_seq=13 ttl=116 time=32.689 ms
64 bytes from 142.250.182.68: icmp_seq=14 ttl=116 time=32.739 ms
```

ssh: Securely connect to a remote system

A terminal window titled 'root@Information-Security-With-Kali-Linux-17-20BKT0047: ~'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The prompt is '(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]'. The user has entered '# ssh'. The terminal displays the usage for the ssh command: 'usage: ssh [-46AaCfGgKkMnqsTtVvXxYy] [-B bind\_interface] [-b bind\_address] [-c cipher\_spec] [-D [bind\_address:]port] [-E log\_file] [-e escape\_char] [-F configfile] [-I pkcs11] [-i identity\_file] [-J [user@]host[:port]] [-L address] [-l login\_name] [-m mac\_spec] [-O ctl\_cmd] [-o option] [-p port] [-Q query\_option] [-R address] [-S ctl\_path] [-W host:port] [-w local\_tun[:remote\_tun]] destination [command [argument ...]]'. The prompt is again '(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]' and the user has entered '#'.

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# ssh
usage: ssh [-46AaCfGgKkMnqsTtVvXxYy] [-B bind_interface]
          [-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
          [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
          [-i identity_file] [-J [user@]host[:port]] [-L address]
          [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
          [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
          [-w local_tun[:remote_tun]] destination [command [argument ...]]
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```

scp: Securely copy files between systems

A terminal window titled 'root@Information-Security-With-Kali-Linux-17-20BKT0047: ~'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The prompt is '(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]'. The user has entered '# scp'. The terminal displays the usage for the scp command: 'usage: scp [-346ABCOpqRrsTv] [-c cipher] [-D sftp\_server\_path] [-F ssh\_config] [-i identity\_file] [-J destination] [-l limit] [-o ssh\_option] [-P port] [-S program] source ... target'. The prompt is again '(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]' and the user has entered '#'.

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# scp
usage: scp [-346ABCOpqRrsTv] [-c cipher] [-D sftp_server_path] [-F ssh_config]
          [-i identity_file] [-J destination] [-l limit]
          [-o ssh_option] [-P port] [-S program] source ... target
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
#
```



wget: Download files from the web

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~  
File Edit View Search Terminal Help  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# wget www.google.com  
--2023-05-28 10:09:31-- http://www.google.com/  
Resolving www.google.com (www.google.com)... 142.250.182.68, 2404:6800:4007:820:  
:2004  
Connecting to www.google.com (www.google.com)|142.250.182.68|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: unspecified [text/html]  
Saving to: 'index.html'  
  
index.html          [ <=>          ] 19.64K  --.-KB/s    in 0.04s  
  
2023-05-28 10:09:32 (556 KB/s) - 'index.html' saved [20115]  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# find -name index.html  
./index.html  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
#
```

## System Administration:

sudo: Execute commands with superuser privileges

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~  
File Edit View Search Terminal Help  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# sudo  
usage: sudo -h | -K | -k | -V  
usage: sudo -v [-ABknS] [-g group] [-h host] [-p prompt] [-u user]  
usage: sudo -l [-ABknS] [-g group] [-h host] [-p prompt] [-U user] [-u user]  
[command]  
usage: sudo [-ABbEHknPS] [-r role] [-t type] [-C num] [-D directory] [-g group]  
[-h host] [-p prompt] [-R directory] [-T timeout] [-u user]  
[VAR=value] [-i|-s] [<command>]  
usage: sudo -e [-ABknS] [-r role] [-t type] [-C num] [-D directory] [-g group]  
[-h host] [-p prompt] [-R directory] [-T timeout] [-u user] file ...  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# sudo su
```

apt-get: Package management for Debian-based distributions

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# sudo apt-get update
Hit:1 http://kali.download/kali kali-rolling InRelease
Reading package lists... Done
```

yum: Package management for Red Hat-based distributions

```
File Edit View Search Terminal Help
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# apt-get install yum -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package yum is not available, but is referred to by another package.
This may mean that the package is missing, has been obsoleted, or
is only available from another source

E: Package 'yum' has no installation candidate
```

systemctl: Manage system services

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# systemctl
```

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
sys-devices-virtual-net-eth0.device	loaded	active	plugged	/sys/devices/vi>
sys-subsystem-net-devices-eth0.device	loaded	active	plugged	/sys/subsystem/>
-.mount	loaded	active	mounted	Root Mount
dev-.lxd\x2dmounts.mount	loaded	active	mounted	/dev/.lxd-mounts
dev-full.mount	loaded	active	mounted	/dev/full
dev-fuse.mount	loaded	active	mounted	/dev/fuse
dev-lxd.mount	loaded	active	mounted	/dev/lxd
dev-mqueue.mount	loaded	active	mounted	POSIX Message Q>
dev-net-tun.mount	loaded	active	mounted	/dev/net/tun
dev-null.mount	loaded	active	mounted	/dev/null
dev-ptmx.mount	loaded	active	mounted	/dev/ptmx
dev-random.mount	loaded	active	mounted	/dev/random
dev-tty.mount	loaded	active	mounted	/dev/tty
dev-urandom.mount	loaded	active	mounted	/dev/urandom
dev-zero.mount	loaded	active	mounted	/dev/zero
proc-cpuinfo.mount	loaded	active	mounted	/proc/cpuinfo
proc-diskstats.mount	loaded	active	mounted	/proc/diskstats
proc-loadavg.mount	loaded	active	mounted	/proc/loadavg
proc-meminfo.mount	loaded	active	mounted	/proc/meminfo



crontab: Schedule recurring tasks

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# crontab -i
crontab: usage error: file name must be specified for replace
usage: crontab [-u user] file
       crontab [ -u user ] [ -i ] { -e | -l | -r }
           (default operation is replace, per 1003.2)
       -e      (edit user's crontab)
       -l      (list user's crontab)
       -r      (delete user's crontab)
       -i      (prompt before deleting user's crontab)

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# cd Downloads

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
# crontab -i newfile
"newfile":0: bad minute
errors in crontab file, can't install.

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~/Downloads]
#
```

useradd: Add a new user

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~
File Edit View Search Terminal Help

(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]
# useradd
Usage: useradd [options] LOGIN
       useradd -D
       useradd -D [options]

Options:
  --badname          do not check for bad names
  -b, --base-dir BASE_DIR  base directory for the home directory of the
                           new account
  --btrfs-subvolume-home  use BTRFS subvolume for home directory
  -c, --comment COMMENT  GECOS field of the new account
  -d, --home-dir HOME_DIR  home directory of the new account
  -D, --defaults        print or change default useradd configuration
  -e, --expiredate EXPIRE_DATE  expiration date of the new account
  -f, --inactive INACTIVE  password inactivity period of the new account
  -F, --add-subids-for-system  add entries to sub[uid]id even when adding a system user
  -g, --gid GROUP        name or ID of the primary group of the new
                           account
  -G, --groups GROUPS    list of supplementary groups of the new
                           account
  -h, --help            display this help message and exit
  -k, --skel SKEL_DIR    use this alternative skeleton directory
```

passwd: Change user password

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# passwd  
New password:  
Retype new password:  
passwd: password updated successfully
```

```
root@Information-Security-With-Kali-Linux-17-20BKT0047: ~  
File Edit View Search Terminal Help  
  
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# adduser new  
Adding user `new' ...  
Adding new group `new' (1001) ...  
Adding new user `new' (1001) with group `new (1001)' ...  
Creating home directory `/home/new' ...  
Copying files from `/etc/skel' ...  
New password:  
Retype new password:  
passwd: password updated successfully  
Changing the user information for new  
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]  
Adding new user `new' to supplemental / extra groups `users' ...  
Adding user `new' to group `users' ...
```

```
(root@Information-Security-With-Kali-Linux-17-20BKT0047)-[~]  
# passwd new  
New password:  
Retype new password:  
passwd: password updated successfully
```