

Title: Linux Command List Assessment

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20BKT0073

VIT VELLORE (CSE WITH SPECIALIZATION IN
BLOCKCHAIN TECHNOLOGY)

DRIVE LINK :

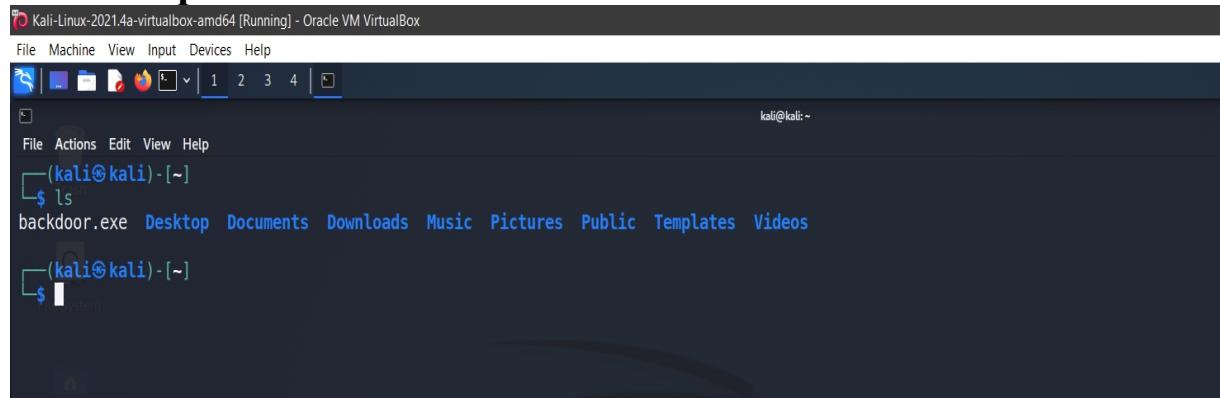
<https://drive.google.com/file/d/1p2YQDaSQ0DLobEDlgVJ5cyyVTrt8541m/view?usp=sharing>

File and Directory Operations:

1- ls

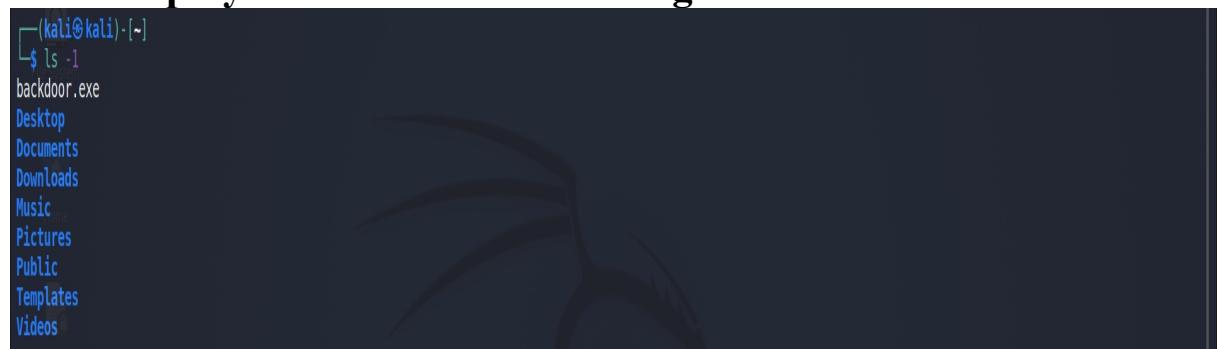
ls is a Linux shell command that lists directory contents of files and directories.

Output:



The screenshot shows a terminal window titled "Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox". The terminal prompt is "(kali㉿kali)-[~]". The user has run the command "ls" which lists the contents of the current directory. The output shows several files and directories: "backdoor.exe", "Desktop", "Documents", "Downloads", "Music", "Pictures", "Public", "Templates", and "Videos". The terminal interface includes a menu bar with File, Machine, View, Input, Devices, and Help, and a toolbar with icons for file operations.

Display One File Per Line Using ls -1



The screenshot shows a terminal window with the same setup as the previous one. The user has run the command "ls -1" which lists the contents of the current directory, one file per line. The output is identical to the previous "ls" command, showing the same files and directories: "backdoor.exe", "Desktop", "Documents", "Downloads", "Music", "Pictures", "Public", "Templates", and "Videos".

Display File Size Using ls -lh

```
(kali㉿kali)-[~]
└─$ ls -lh
total 108K
-rw-r--r-- 1 kali kali 73K Mar 30 14:52 backdoor.exe
drwxr-xr-x 2 kali kali 4.0K Apr 19 2022 Desktop
drwxr-xr-x 2 kali kali 4.0K Dec 20 2021 Documents
drwxr-xr-x 2 kali kali 4.0K Mar 1 12:03 Downloads
drwxr-xr-x 2 kali kali 4.0K Dec 20 2021 Music
drwxr-xr-x 2 kali kali 4.0K Dec 20 2021 Pictures
drwxr-xr-x 2 kali kali 4.0K Dec 20 2021 Public
drwxr-xr-x 2 kali kali 4.0K Dec 20 2021 Templates
drwxr-xr-x 2 kali kali 4.0K Dec 20 2021 Videos
```

2- cd

The cd command in Linux stands for change directory. It is used to change the current directory of the terminal. The terminal, by default, opens the home directory.

```
(kali㉿kali)-[~]
└─$ cd Desktop

(kali㉿kali)-[~/Desktop]
└─$ ls
hydra1.txt  hydra.txt  password.txt

(kali㉿kali)-[~/Desktop]
└─$ █
```

3-pwd

The pwd command writes to standard output the full path name of your current directory (from the root directory). All directories are separated by a / (slash). The root directory is represented by the first /, and the last directory named is your current directory.

```
(kali㉿kali)-[~/Desktop]
└─$ pwd
/home/kali/Desktop
hydra1.txt
(kali㉿kali)-[~/Desktop]
└─$ cd \
>
(kali㉿kali)-[~]
└─$ pwd
/home/kali
(kali㉿kali)-[~]
└─$ █
```

4-mkdir

The command `mkdir` stands for “make directory”. It creates each directory specified on the command line in the order given.

```
(kali㉿kali) - [~]
$ ls
backdoor.exe Desktop Documents Downloads Music Pictures Public Templates Videos
password.txt
(kali㉿kali) - [~]
└─$ ls Desktop
hydra1.txt hydra.txt password.txt

(kali㉿kali) - [~]
└─$ cd Desktop

(kali㉿kali) - [~/Desktop]
$ mkdir assessment_1
hydra.txt
(kali㉿kali) - [~/Desktop]
└─$ ls
assessment_1 hydra1.txt hydra.txt password.txt
```

5-touch

The `touch` command updates the access and modification times of each file specified by the `File` parameter of each directory specified by the `Directory` parameter. If you do not specify a value for the `Time` variable, the `touch` command uses the current time. If you specify a file that does not exist, the `touch` command creates the file unless you specify the `-c` flag.

```
(kali㉿kali) - [~]
└─$ cd Desktop

(kali㉿kali) - [~/Desktop]
└─$ ls
assessment_1 hydra1.txt hydra.txt password.txt
hydra.txt
(kali㉿kali) - [~/Desktop]
└─$ cd assessment_1

(kali㉿kali) - [~/Desktop/assessment_1]
└─$ ls
(kali㉿kali) - [~/Desktop/assessment_1]
$ touch smartbridge.txt

(kali㉿kali) - [~/Desktop/assessment_1]
└─$ ls
smartbridge.txt

(kali㉿kali) - [~/Desktop/assessment_1]
└─$
```

6-cp

cp stands for a copy. This command is used to copy files or groups of files or directories. It creates an exact image of a file on a disk with a different file name. cp command requires at least two filenames in its arguments.

```
(kali㉿kali)-[~/Desktop]
└─$ ls
assessment_1  hydra1.txt  hydra.txt  new  password.txt

(kali㉿kali)-[~/Desktop]
└─$ ls new

(kali㉿kali)-[~/Desktop]
└─$ cp hydra1.txt hydra.txt new

(kali㉿kali)-[~/Desktop]
└─$ ls new
hydra1.txt  hydra.txt
```

7-mv

The mv command moves files and directories from one directory to another or renames a file or directory.

```
(kali㉿kali)-[~]
└─$ cd Desktop

(kali㉿kali)-[~/Desktop]
└─$ mv hydra1.txt /home
mv: cannot move 'hydra1.txt' to '/home/hydra1.txt': Permission denied

(kali㉿kali)-[~/Desktop]
└─$ sudo mv hydra1.txt /home

(kali㉿kali)-[~/Desktop]
└─$ ls
assessment_1  new  password.txt
```

8-rm

The rm command removes the entries for a specified file, group of files, or certain select files from a list within a directory. User confirmation, read permission, and write permission are not required before a file is removed when you use the rm command.

```
(kali㉿kali) - [~]
$ cd Desktop
password.txt
(kali㉿kali) - [~/Desktop]
$ ls
assessment_1  new  password.txt

(kali㉿kali) - [~/Desktop]
$ cd new

(kali㉿kali) - [~/Desktop/new]
$ ls
hydra1.txt  hydra.txt

(kali㉿kali) - [~/Desktop/new]
$ rm hydra1.txt

(kali㉿kali) - [~/Desktop/new]
$ ls
hydra.txt

(kali㉿kali) - [~/Desktop/new]
$
```

9-Find

The find command in UNIX is a command line utility for walking a file hierarchy. It can be used to find files and directories and perform subsequent operations on them.

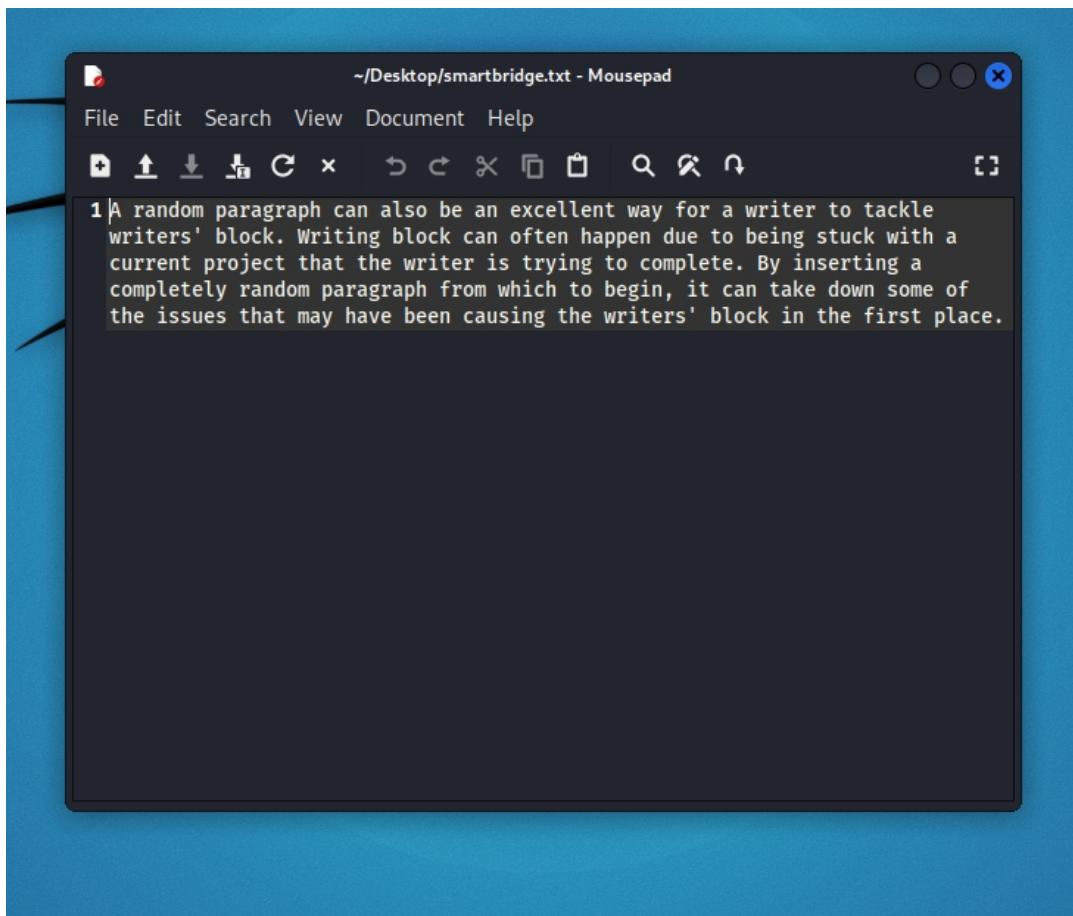
```
(kali㉿kali) - [~]
$ find . -name hydra.txt
./Desktop/new/hydra.txt
```

File Viewing and Editing:

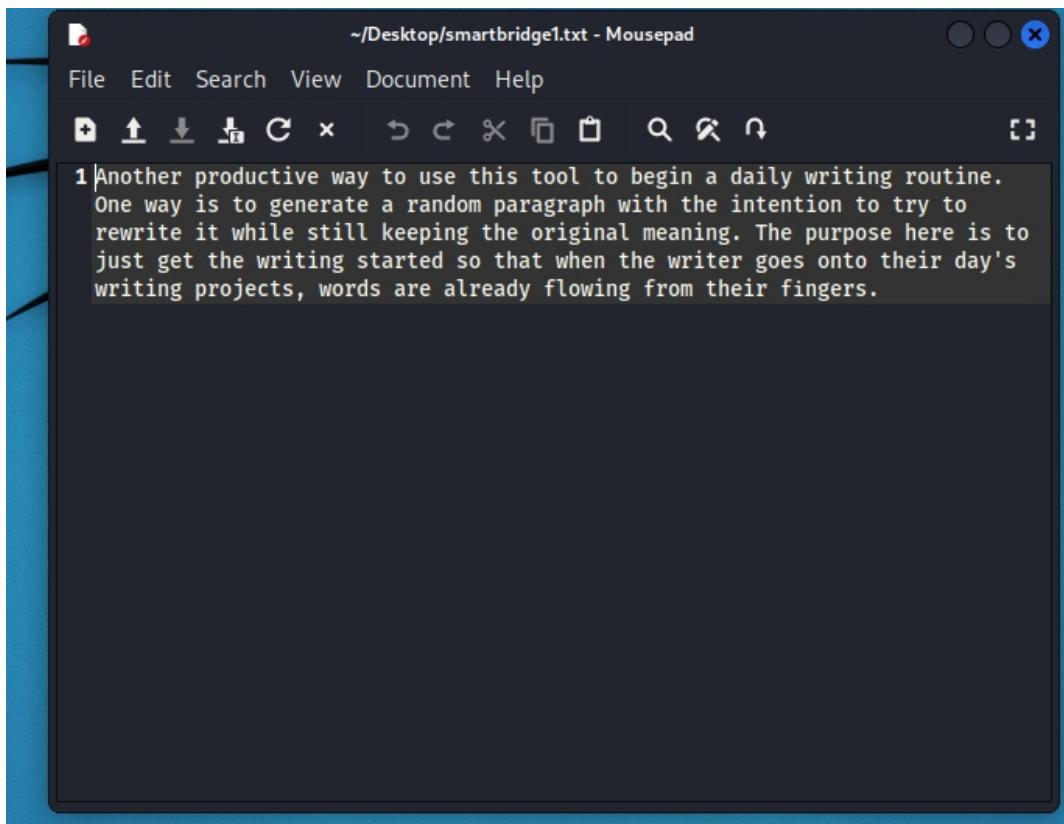
cat:

Concatenate and display file content

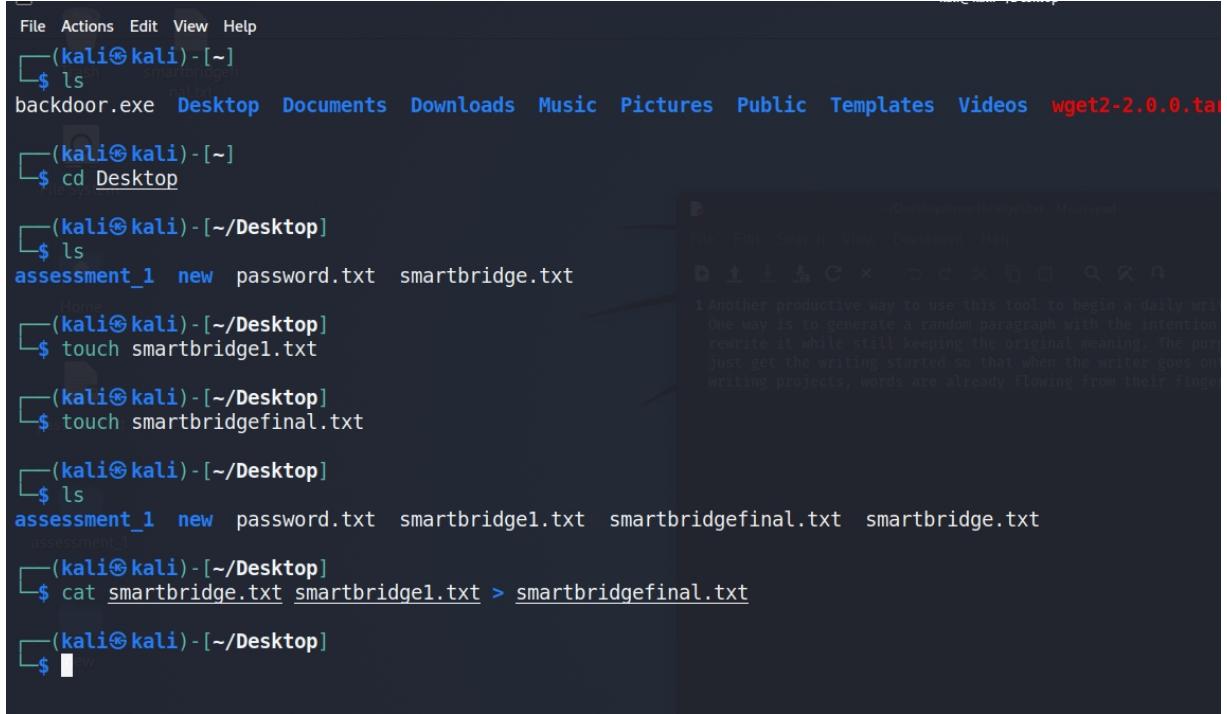
File1



file2

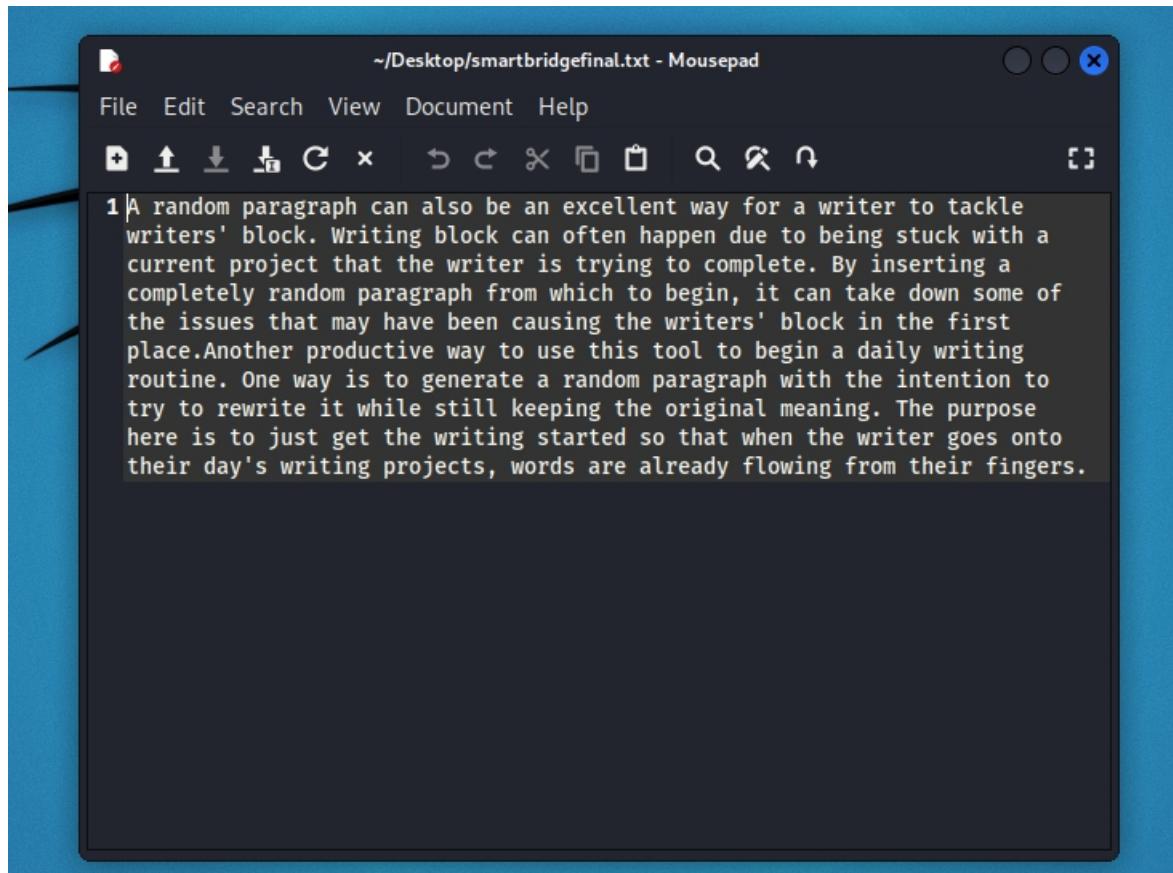


cat command



```
(kali㉿kali)-[~]
$ ls
backdoor.exe Desktop Documents Downloads Music Pictures Public Templates Videos wget2-2.0.0.tar
(kali㉿kali)-[~]
$ cd Desktop
(kali㉿kali)-[~/Desktop]
$ ls
assessment_1 new password.txt smartbridge.txt
(kali㉿kali)-[~/Desktop]
$ touch smartbridge1.txt
(kali㉿kali)-[~/Desktop]
$ touch smartbridgefinal.txt
(kali㉿kali)-[~/Desktop]
$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt
(kali㉿kali)-[~/Desktop]
$ cat smartbridge.txt smartbridge1.txt > smartbridgefinal.txt
(kali㉿kali)-[~/Desktop]
$
```

Finalfile



less:

View file content with pagination

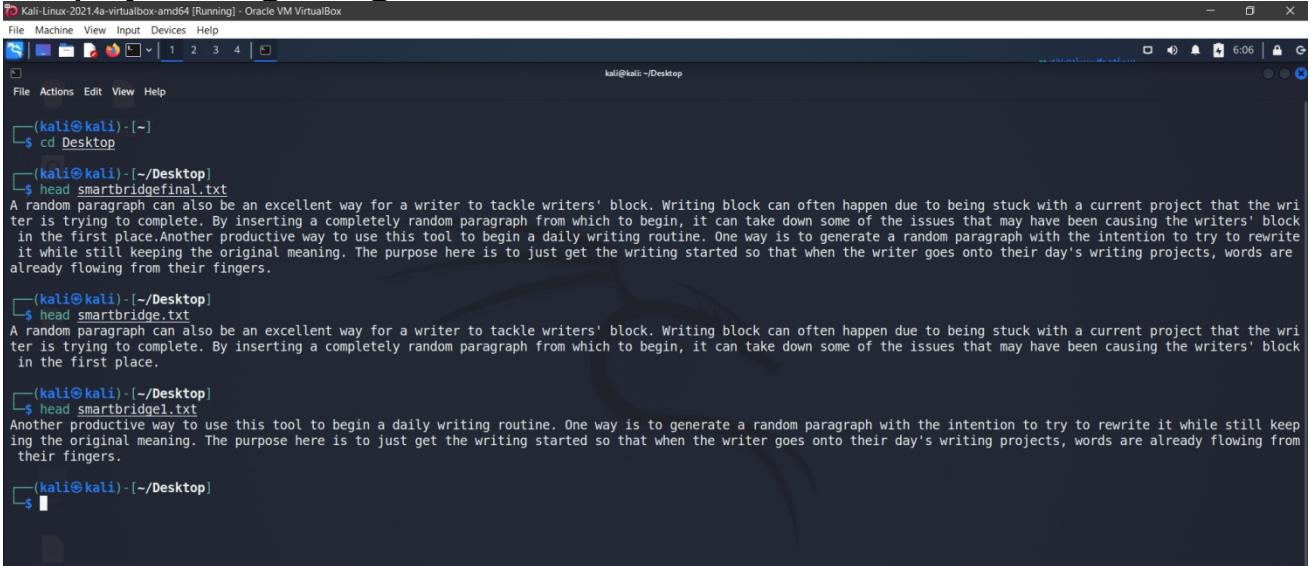


Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
kali@kali: ~/Desktop

```
A random paragraph can also be an excellent way for a writer to tackle writers' block. Writing block can often happen due to being stuck with a current project that the writer is trying to complete. By inserting a completely random paragraph from which to begin, it can take down some of the issues that may have been causing the writers' block in the first place. Another productive way to use this tool to begin a daily writing routine. One way is to generate a random paragraph with the intention to try to rewrite it while still keeping the original meaning. The purpose here is to just get the writing started so that when the writer goes onto their day's writing projects, words are already flowing from their fingers.  
(END)
```

head:

Display the beginning of a file

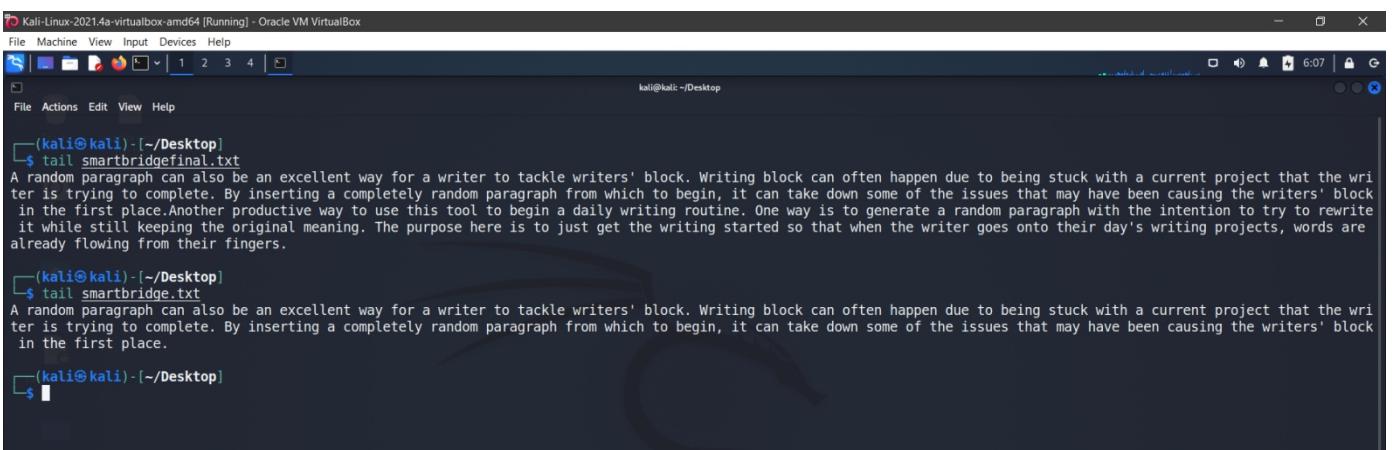


Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
kali@kali: ~/Desktop

```
(kali㉿kali)-[~]  
$ cd Desktop  
  
(kali㉿kali)-[~/Desktop]  
$ head smartbridgefinal.txt  
A random paragraph can also be an excellent way for a writer to tackle writers' block. Writing block can often happen due to being stuck with a current project that the writer is trying to complete. By inserting a completely random paragraph from which to begin, it can take down some of the issues that may have been causing the writers' block in the first place. Another productive way to use this tool to begin a daily writing routine. One way is to generate a random paragraph with the intention to try to rewrite it while still keeping the original meaning. The purpose here is to just get the writing started so that when the writer goes onto their day's writing projects, words are already flowing from their fingers.  
  
(kali㉿kali)-[~/Desktop]  
$ head smartbridge.txt  
A random paragraph can also be an excellent way for a writer to tackle writers' block. Writing block can often happen due to being stuck with a current project that the writer is trying to complete. By inserting a completely random paragraph from which to begin, it can take down some of the issues that may have been causing the writers' block in the first place.  
  
(kali㉿kali)-[~/Desktop]  
$ head smartbridge1.txt  
Another productive way to use this tool to begin a daily writing routine. One way is to generate a random paragraph with the intention to try to rewrite it while still keeping the original meaning. The purpose here is to just get the writing started so that when the writer goes onto their day's writing projects, words are already flowing from their fingers.  
  
(kali㉿kali)-[~/Desktop]
```

tail:

Display the end of a file

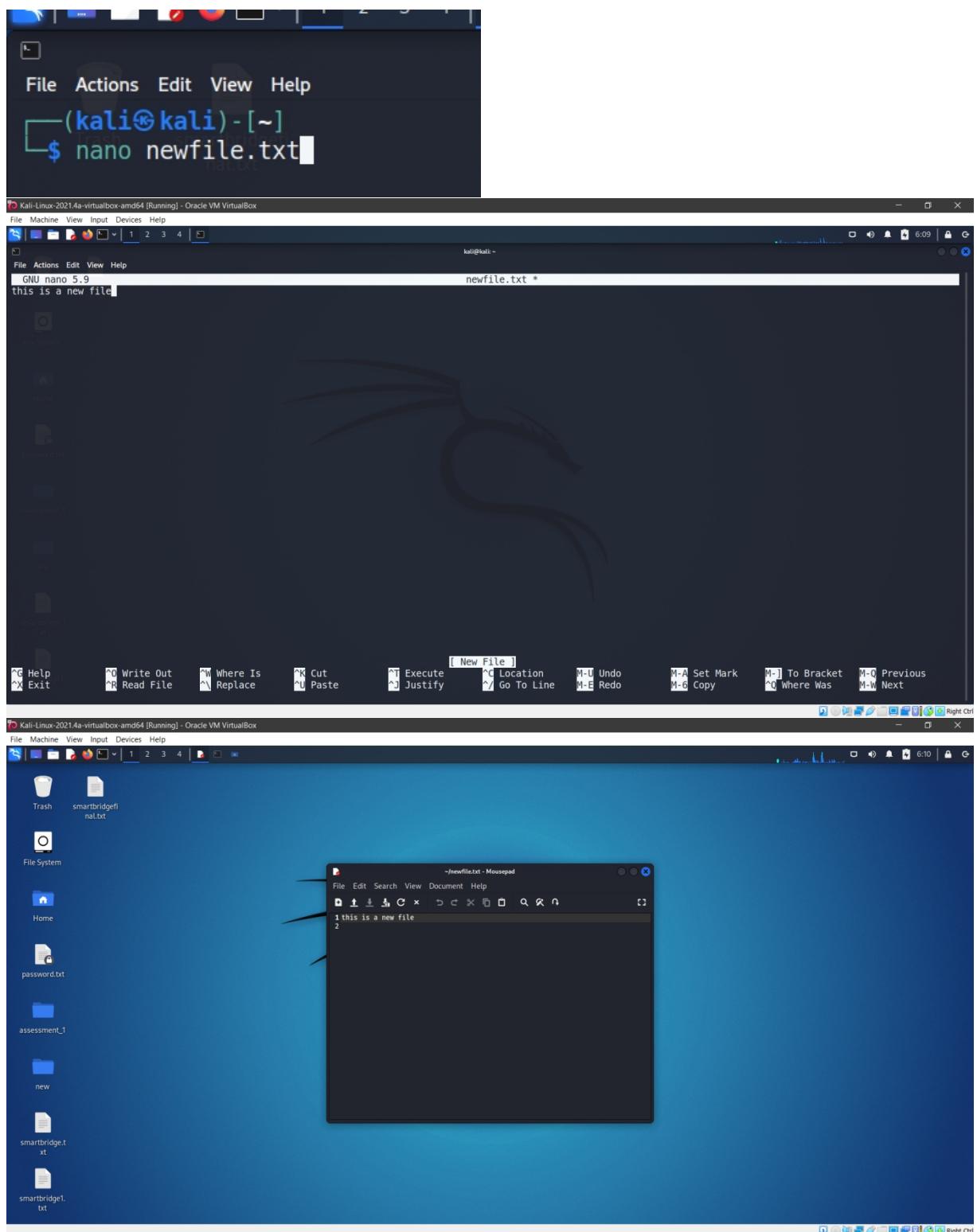


Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
kali@kali: ~/Desktop

```
(kali㉿kali)-[~/Desktop]  
$ tail smartbridgefinal.txt  
A random paragraph can also be an excellent way for a writer to tackle writers' block. Writing block can often happen due to being stuck with a current project that the writer is trying to complete. By inserting a completely random paragraph from which to begin, it can take down some of the issues that may have been causing the writers' block in the first place. Another productive way to use this tool to begin a daily writing routine. One way is to generate a random paragraph with the intention to try to rewrite it while still keeping the original meaning. The purpose here is to just get the writing started so that when the writer goes onto their day's writing projects, words are already flowing from their fingers.  
  
(kali㉿kali)-[~/Desktop]  
$ tail smartbridge.txt  
A random paragraph can also be an excellent way for a writer to tackle writers' block. Writing block can often happen due to being stuck with a current project that the writer is trying to complete. By inserting a completely random paragraph from which to begin, it can take down some of the issues that may have been causing the writers' block in the first place.  
  
(kali㉿kali)-[~/Desktop]
```

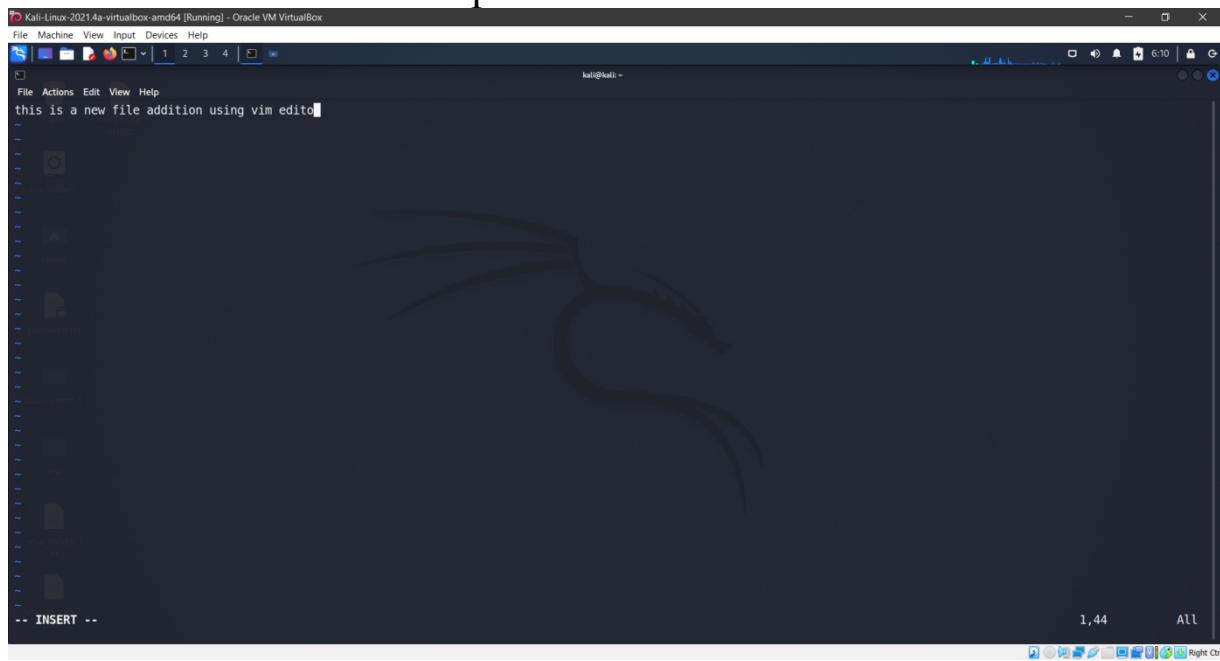
nano:

Text editor for creating and editing files



vi/vim:

Powerful text editor for experienced users

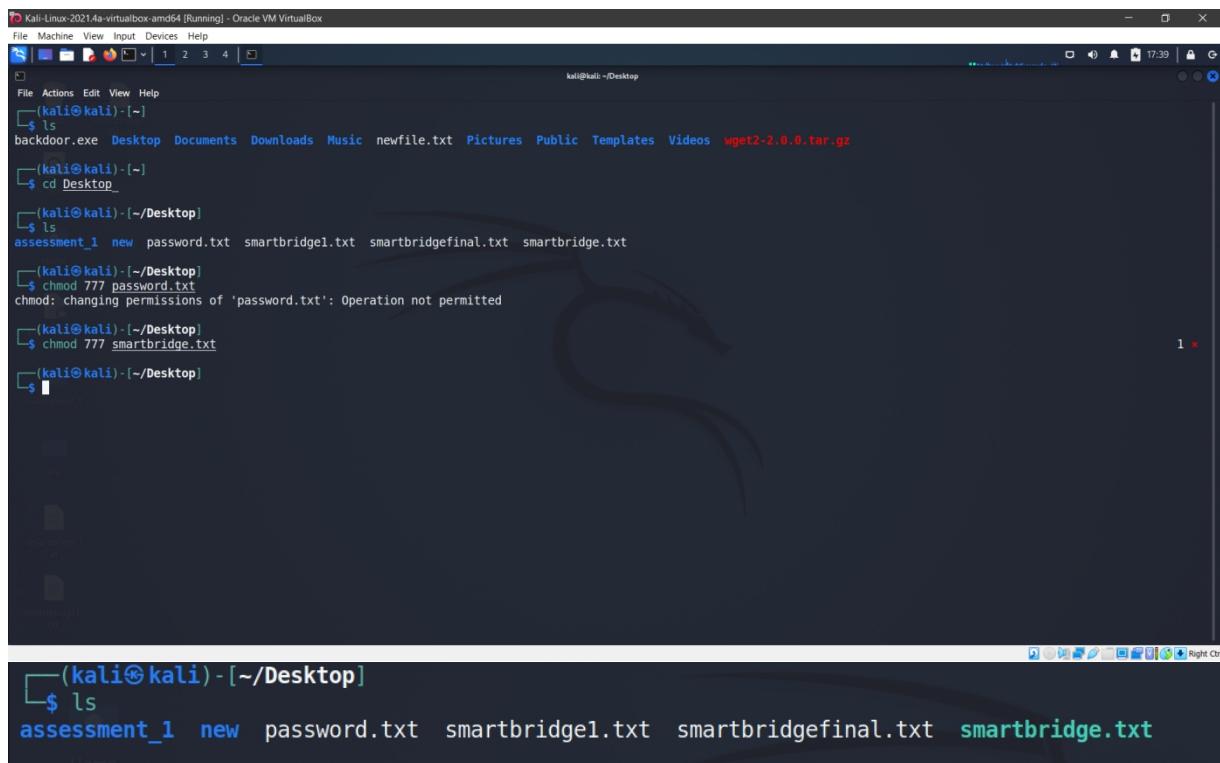


Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
this is a new file addition using vim edito...
-- INSERT --
1,44 All
Right Ctrl

File Permissions:

chmod:

Change file permissions



Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
(kali㉿kali)-[~]
└─\$ ls
backdoor.exe Desktop Documents Downloads Music newfile.txt Pictures Public Templates Videos wget2-2.0.0.tar.gz
└─\$ cd Desktop
└─\$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt
└─\$ chmod 777 password.txt
chmod: changing permissions of 'password.txt': Operation not permitted
└─\$ chmod 777 smartbridge.txt
└─\$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt
└─\$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt

chown:

Change file owner

```
(kali㉿kali)-[~/Desktop]
$ chown kali smartbridge.txt
assessment_1
(kali㉿kali)-[~/Desktop]
$
```

chgrp:

Change file group

```
(kali㉿kali)-[~/Desktop]
$ sudo addgroup admin_priv
Adding group `admin_priv' (GID 1003) ...
Done.

(kali㉿kali)-[~/Desktop]
$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt

(kali㉿kali)-[~/Desktop]
$ sudo chgrp admin_priv smartbridge1.txt

(kali㉿kali)-[~/Desktop]
$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt
```

File Compression and Archiving:

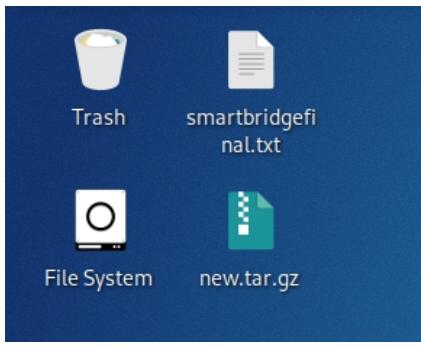
tar:

Archive files

```
(kali㉿kali)-[~/Desktop]
$ ls
assessment_1 new password.txt smartbridge1.txt smartbridgefinal.txt smartbridge.txt

(kali㉿kali)-[~/Desktop]
$ tar -czvf new.tar.gz smartbridge1.txt smartbridge.txt smartbridgefinal.txt
smartbridge1.txt
smartbridge.txt
smartbridgefinal.txt
```

Tar zip created on desktop

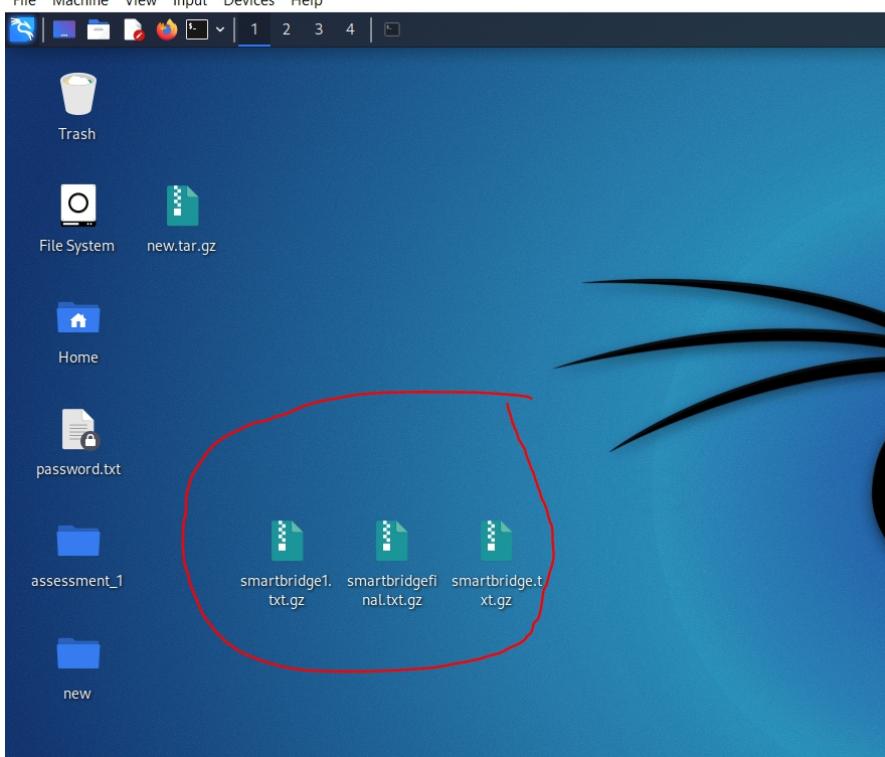


gzip:
Compress files

```
(kali㉿kali)-[~/Desktop]
$ gzip smartbridge1.txt smartbridge.txt smartbridgefinal.txt

(kali㉿kali)-[~/Desktop]
$
```

The terminal window shows the command \$ gzip smartbridge1.txt smartbridge.txt smartbridgefinal.txt being run. The output shows the creation of a compressed file named new.tar.gz. The terminal has tabs 1, 2, 3, 4 open, and the current tab is tab 1. The title bar indicates it's running on Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox.



unzip:

Extract files from a ZIP archive

```
zip error: zip file structure invalid (sample.pdf)
└─(kali㉿kali)-[~/Downloads] smartbridgefl smartbridge.t
$ ls
      txt.gz      nat.txt.gz      xt.gz
Nessus-10.4.2-ubuntu1404_amd64.deb  sample.pdf

└─(kali㉿kali)-[~/Downloads]
$ zip sample.zip sample.pdf
adding: sample.pdf (deflated 70%)

└─(kali㉿kali)-[~/Downloads]
$ unzip sample.zip
Archive:  sample.zip
replace sample.pdf? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
inflating: sample.pdf
```

Process Management:

ps:

List running processes

```
└─(kali㉿kali)-[~]
$ ps
    PID TTY          TIME CMD
 1203 pts/0        00:00:15 zsh
 15352 pts/0        00:00:00 ps

└─(kali㉿kali)-[~]
$ █
```

top:

Display real-time system information and processes

```

Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Actions Edit View Help
top - 04:18:34 up 58 min, 1 user, load average: 0.08, 0.08, 0.08
Tasks: 148 total, 1 running, 147 sleeping, 0 stopped, 0 zombie
%CPU(s): 2.0 us, 1.0 sy, 0.0 ni, 96.9 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MIB Mem : 1982.0 total, 994.0 free, 571.5 used, 416.4 buff/cache
MIB Swap: 975.0 total, 975.0 free, 0.0 used. 1248.2 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
527 root 20 0 472208 154504 60280 S 1.7 7.6 0:49.62 Xorg
918 kali 20 0 355380 34520 20720 S 1.0 1.7 0:33.74 panel-13-cpugra
921 kali 20 0 342808 27508 19932 S 0.7 1.4 0:16.93 panel-15-genmon
1260 kali 20 0 406080 84100 59396 S 0.7 4.1 0:10.01 qterminal
1534 kali 20 0 1040 538 5056 R 0.7 0.2 0:00.13 qterminal
826 kali 20 0 152988 2860 2388 S 0.3 0.1 0:10.91 VBoxClient
875 kali 20 0 915856 84340 64240 S 0.3 4.2 0:15.41 xfwm4
2555 root 20 0 0 0 0 I 0.3 0.0 0:02.39 kworker/1:0-events
1 root 20 0 164736 10636 7880 S 0.0 0.5 0:01.47 systemd
2 root 20 0 0 0 0 S 0.0 0.0 0:00.01 kthreadd
3 root 0 -20 0 0 0 I 0.0 0.0 0:00.01 rcu_gp
4 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 rcu_gp
6 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/0:0H-events_highpri
9 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 mm_percpu_wq
10 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu_tasks_rude
11 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu_tasks_trace
12 root 20 0 0 0 0 S 0.0 0.0 0:00.06 ksoftirqd/0
13 root 20 0 0 0 0 S 0.0 0.0 0:00.00 ksoftirqd/1
14 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 migration/0
15 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuhp/0
16 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuhp/1
17 root rt 0 0 0 0 S 0.0 0.0 0:00.17 migration/1
18 root 20 0 0 0 0 S 0.0 0.0 0:00.12 ksoftirqd/1
20 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/1:0H-events_highpri
23 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kdevtmpfs
24 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 ksoftirqd/0
25 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 inet_frag_wq
26 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kauditd
27 root 20 0 0 0 0 S 0.0 0.0 0:00.00 khungtaskd

```

kill:

Terminate processes

```

(kali㉿kali)-[~]
└─$ ps
  PID TTY      TIME CMD
1203 pts/0    00:00:16 zsh
16426 pts/0    00:00:00 ps

(kali㉿kali)-[~]
└─$ kill -STOP 16308
Completing process ID
 1000 0.0 ? 00:00:00 /usr/bin/python3 /usr/bin/blueman-applet
 1002 0.0 ? 00:00:00 nm-applet
 1003 0.0 ? 00:00:00 /usr/libexec/dconf-service
 1011 0.0 ? 00:00:00 xiccd
 1013 0.0 ? 00:00:00 xcape -e Super_L Control_L Escape
 1064 0.0 ? 00:00:00 /usr/libexec/gvfs-udisks2-volume-monitor
 1087 0.0 ? 00:00:00 /usr/libexec/gvfs-ghotphoto2-volume-monitor
 1094 0.0 ? 00:00:00 /usr/libexec/gvfs-mtp-volume-monitor
 1098 0.0 ? 00:00:00 /usr/libexec/gvfs-afc-volume-monitor
 1103 0.0 ? 00:00:00 /usr/libexec/gvfs-goa-volume-monitor
 1110 0.0 ? 00:00:00 /usr/libexec/bluetooth/obexd
 1112 0.0 ? 00:00:00 /usr/libexec/gvfsd-trash --spawner :1.15 /org/gtk/gvfs/exec_spaw/0
 1117 0.0 ? 00:00:00 /usr/libexec/gvfsd-metadata
 1200 0.2 ? 00:00:10 /usr/bin/qterminal
 1203 0.4 pts/0 00:00:16 /usr/bin/zsh
16447 0.0 pts/0 00:00:00 /usr/bin/zsh
16450 0.0 pts/0 00:00:00 ps -u kali -o pid,%cpu,tty,cputime,cmd
 722 0.0 ? 00:00:00 /lib/systemd/systemd --user
 723 0.0 ? 00:00:00 (sd-pam)
 742 0.0 ? 00:00:00 /usr/bin/pipewire
 743 0.0 ? 00:00:00 /usr/bin/pipewire-media-session
 745 0.0 ? 00:00:00 /usr/bin/pulseaudio --daemonize=no --log-target=journal
 746 0.0 ? 00:00:01 /usr/bin/dbus-daemon --session --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
 752 0.0 ? 00:00:00 xfce4-session
 805 0.0 ? 00:00:00 /usr/bin/VBoxClient --clipboard
 807 0.0 ? 00:00:00 /usr/bin/VBoxClient --clipboard
 818 0.0 ? 00:00:00 /usr/bin/VBoxClient --seamless
 819 0.0 ? 00:00:00 /usr/bin/VBoxClient --seamless
 825 0.0 ? 00:00:00 /usr/bin/VBoxClient --draganddrop
 826 0.3 ? 00:00:11 /usr/bin/VBoxClient --draganddrop
 829 0.0 ? 00:00:00 /usr/bin/VBoxClient --vmsvga
 831 0.0 ? 00:00:00 /usr/bin/VBoxClient --vmsvga
 834 0.0 ? 00:00:00 /usr/bin/ssh-agent x-session-manager
 847 0.0 ? 00:00:00 /usr/libexec/at-spi-bus-launcher

(kali㉿kali)-[~]
└─$ kill -STOP 831
(kali㉿kali)-[~]
└─$ kill -CONT 831
(kali㉿kali)-[~]
└─$ 

```

bg:

Run processes in the background

```
[└(kali㉿kali)-[~]
└$ jobs
[└(kali㉿kali)-[~]
└$ sleep 500
^Z
zsh: suspended sleep 500
File System
[└(kali㉿kali)-[~]
└$ jobs
[1] + suspended sleep 500
[└(kali㉿kali)-[~]
└$ bg %1
[1] + continued sleep 500
[└(kali㉿kali)-[~]
└$ jobs
[1] + running sleep 500
```

fg:

Bring background processes to the foreground

```
[└(kali㉿kali)-[~]
└$ fg %1
[1] + running sleep 500
```

System Information:

uname:

Print system information

```
[└(kali㉿kali)-[~]
└$ uname
Linux
```

df:

Display disk space usage

```
(kali㉿kali)-[~]
└─$ uname
Linux

(kali㉿kali)-[~]
└─$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
udev              972456      0   972456   0% /dev
tmpfs             202952    936   202016   1% /run
/dev/sdal       81000912 10300132 66540168 14% /
tmpfs             1014760      0  1014760   0% /dev/shm
tmpfs               5120      0    5120   0% /run/lock
tmpfs             202952     64   202888   1% /run/user/1000
```

free:

```
Display memory usage
tmpfs            5120      0    5120   0% /run/lock
tmpfs            202952     64   202888   1% /run/user/1000
```

```
(kali㉿kali)-[~]
└─$ free
      total        used        free      shared  buff/cache   available
Mem:   2029520      587012     1015184      19004      427324     1276380
Swap:  998396          0     998396
```

uptime:

Show system uptime

```
(kali㉿kali)-[~]
└─$ free
      total        used        free      shared  buff/cache   available
Mem:   2029520      587012     1015184      19004      427324     1276380
Swap:  998396          0     998396

(kali㉿kali)-[~]
└─$ uptime
04:34:30 up  1:14,  1 user,  load average: 0.10, 0.08, 0.08
```

who:

Display logged-in users

```
(kali㉿kali)-[~]
└─$ who
kali    tty7        2023-05-21 03:20 (:0)
```

w:

Display logged-in users and their activities

```
(kali㉿kali)-[~]
└─$ w
04:34:34 up  1:14,  1 user,  load average: 0.10, 0.08, 0.08
USER     TTY     FROM           LOGIN@    IDLE    JCPU    PCPU WHAT
kali     tty7     :0           03:20     1:14m  59.20s  0.37s xfce4-session
```

Networking:

ifconfig:

Configure network interfaces

```
(kali㉿kali)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
        inet6 fe80::a00:27ff:fe50:4c14 prefixlen 64 scopeid 0x20<link>
            ether 08:00:27:50:4c:14 txqueuelen 1000 (Ethernet)
                RX packets 1 bytes 590 (590.0 B)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 19 bytes 1638 (1.5 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 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
                RX packets 12 bytes 600 (600.0 B)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 12 bytes 600 (600.0 B)
                TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

ping:

Send ICMP echo requests to a network host

```
(kali㉿kali)-[~]
$ ping vit.ac.in
PING vit.ac.in (136.233.9.13) 56(84) bytes of data.
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=1 ttl=243 time=100 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=2 ttl=243 time=59.6 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=3 ttl=243 time=60.7 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=4 ttl=243 time=60.0 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=5 ttl=243 time=59.7 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=6 ttl=243 time=59.3 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=7 ttl=243 time=59.6 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=8 ttl=243 time=59.8 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=9 ttl=243 time=60.0 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=10 ttl=243 time=60.0 ms
64 bytes from 136.233.9.13 (136.233.9.13): icmp_seq=11 ttl=243 time=60.3 ms
^C
--- vit.ac.in ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 10011ms
rtt min/avg/max/mdev = 59.337/63.561/100.126/11.567 ms
```

wget:

Download files from the web

```
(kali㉿kali)-[~]
└─$ wget http://ftp.gnu.org/gnu/wget/wget2-2.0.0.tar.gz
--2023-05-21 04:41:00-- http://ftp.gnu.org/gnu/wget/wget2-2.0.0.tar.gz
Resolving ftp.gnu.org (ftp.gnu.org)... 209.51.188.20, 2001:470:142:3::b
Connecting to ftp.gnu.org (ftp.gnu.org)|209.51.188.20|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3565643 (3.4M) [application/x-gzip]
Saving to: 'wget2-2.0.0.tar.gz'

wget2-2.0.0.tar.gz      100%[=====] 3.40M  1.35MB/s   in 2.5s

2023-05-21 04:41:03 (1.35 MB/s) - 'wget2-2.0.0.tar.gz' saved [3565643/3565643]
```

System Administration:

sudo:

Execute commands with superuser privileges

```
(kali㉿kali)-[~]
└─$ sudo apt update
Get:1 http://kali.download/kali kali-rolling InRelease [41.2 kB]
Err:1 http://kali.download/kali kali-rolling InRelease
      The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
Fetched 41.2 kB in 11s (3,754 B/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
1161 packages can be upgraded. Run 'apt list --upgradable' to see them.
W: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: http://kali.download/kali kali-rolling InRelease: The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
W: Failed to fetch http://http.kali.org/kali/dists/kali-rolling/InRelease  The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
W: Some index files failed to download. They have been ignored, or old ones used instead.
```

apt-get:

Package management for Debian-based distributions

```
(kali㉿kali)-[~]
└─$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  fonts-roboto-slab libgdg-pixbuf-xlib-2.0.0 libgdg-pixbuf2-2.0.0 python3-ipaddr python3-twisted-bin ruby-atomic ruby-thread-safe
Use 'sudo apt autoremove' to remove them.
The following packages have been kept back:
  apache2 apache2-bin apache2-data apache2-utils cherrytree clang clang-11 cpp-11 curl default-mysql-server dirmngr firefox-esr ftp g++-11 gcc-11 gcc-11-base geoclue-2.0
  gir1.2-javascriptcoregtk-4.0 gir1.2-soup-2.4 gir1.2-webkit2-4.0 gnupg gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client gpg-wks-server gpgconf gpgsm gpgv
  gstreamer1.0-plugins-bad gvfs gvfs-backends gvfs-common gvfs-daemons gvfs-fuse gvfs-libs intel-media-va-driver kali-desktop-base kali-linux-headless kali-themes
  kali-themes-common kali-wallpapers-2020 kali-waltpapers-2021.4 libabdb-mariadb-perl libdbi-perl libeql-mesa0 libfcgi-perl libfido2-1 libfile-fcntllock-perl libgbm
  libaprutil1-ldap libapt-pkg-perl libasano libatomic1 libavcodec58 libavfilter7 libavformat58 libavutil56 libcurl1-0 libclang-common-11-dev libclang-cpp11 libclang1-11
  libcommon-sense-perl libcrypt-ssleay-perl libcurl3-gnutls libcurl4 libdbd-mariadb-perl libdbi-perl libeql-mesa0 libfcgi-perl libfido2-1 libfile-fcntllock-perl libgbm
  libgcc-11-dev libgcc-11 libgd3 libgeos-c1v5 libgeotiff5 libgfortran5 libgl1-mesa-dri libglapi-mesa libglx-mesa libgomp1 libgstreamer-plugins-bad1.0-0
  libgvcc6 libhtml-parser-perl libinput10 libipc-shareable-perl libitm1 libjavascriptcoregtk-4.0-18 libjson-xs-perl libldb2 liblist-moreutils-xs-perl
  liblvm1 liblvm12 liblocale-gettext-perl liblsan0 libmagickcore-6.q16-6 libmagickcore-6.q16-6-extra libmf1 libmm-glib0 libnet-dbus-perl libnet-dns-sec-perl
  libnet-libidn-perl libnet-ssleay-perl libobjc4 libobddoc1 libopenconnect5 libpolkit-agent-1-0 libpolkit-gobject-1-0 libpoppler-glib8 libpostproc5 libpods5
  libpulse-mainloop-glib0 libpulse0 libpulsedsp libqmi-proxy libqtstest5 libqtwebkit5 libquadmath0 libsan1 libsd12-2.0.0 libsmclient
  libsnmp40 libsocket6-perl libsoup-gnome2.4-1 libsoup2.4-1 libspatialite7 libstdc++-11-dev libstdc++6 libwsresample3 libwscale5 libterm-readkey-perl
  libtesseract-ocr-perl libtext-iconv-perl libtiff5 libtsan0 libusbsan0 libwacom-bin libwacom-common libwbcclient0 libwebkit2gtk-4.0-37 libwebpdmux2 libwebpmux3
  libwmf0.2-7 libxatracker2 libxml-parser-perl linux-image-amd64 l1vml-11 l1vml-11-linker-tools l1vml-11-runtime l1vml-11-tools mesa-va-drivers
  mesa-vdpau-drivers mesa-vulkan-drivers metasploit-framework modemmanager mousepad network-manager-gnome network-manager-openconnect network-manager-openconnect-gnome
  network-manager-openvpn network-manager-openvpn-gnome network-manager-pptp network-manager-ppp-gnome network-manager-vpnc network-manager-vpnc-gnome nfs-common
  odbcinst odbcinstdebian2 openconnect passing-the-hash perl perl-base php php-common php-mysql plocate policykit-1 postgresql-14 postgresql-client-14 pulseaudio
  pulseaudio-module-bluetooth pulseaudio-utils pyqt5-dev-tools python3-aiohttp python3-autobahn python3-bottleneck python3-dropbox python3-flagger
  python3-flask python3-gdal python3-jaraco.text python3-ldb python3-matplotlib python3-mpltoolkits.basemap python3-numexpr python3-numpy python3-pandas
  python3-pandas-lib python3-pil python3-pycurl python3-pyproj python3-pypykatz python3-pyqt5 python3-requests python3-samba python3-scipy python3-sqlalchemy
  python3-sqlalchemy-ext python3-tables python3-tables-lib python3-tzlocal python3-yara ruby ruby-atomic ruby-cms-scanner ruby-dev ruby-ethon ruby-ffi ruby-nokogiri
  ruby-yajl samba samba-common-bin samba-dsdb-modules samba-libs samba-vfs-modules sane-utils smbclient snmpd theharvester tshark vboot-kernel-utils
```

yum:

Package management for Red Hat-based distributions

systemctl: Manage system services

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
proc-sys-fs-binfmt_misc.autounmount	loaded	active	running	Arbitrary Executable File Formats File System Autounmount
sys-devices-pci0000:00-0000:00:01.1-ata2-host1-target1:0:0:1:0:0:0-block-sr0.device	loaded	active	plugged	VBOX CD-ROM
sys-devices-pci0000:00-0000:00:03.0-net-eth0.device	loaded	active	plugged	82540EM Gigabit Ethernet Controller (PRO/1000 MT Desktop)
sys-devices-pci0000:00-0000:00:05.0-sound-card0-control0.device	loaded	active	plugged	/sys/devices/pci0000:00/0000:00:05.0/sound/card0/control0
sys-devices-pci0000:00-0000:00:0d.0-atal-host0-target0:0:0:0:0:0-block-sda-sda1.device	loaded	active	plugged	VBOX HARDDISK 1
sys-devices-pci0000:00-0000:00:0d.0-atal-host0-target0:0:0:0:0:0-block-sda-sda2.device	loaded	active	plugged	VBOX HARDDISK 2
sys-devices-pci0000:00-0000:00:0d.0-atal-host0-target0:0:0:0:0:0-block-sda-sda5.device	loaded	active	plugged	VBOX HARDDISK 5
sys-devices-pci0000:00-0000:00:0d.0-atal-host0-target0:0:0:0:0:0-block-sda.device	loaded	active	plugged	VBOX HARDDISK
sys-devices-platform-serial8250-tty-ttyS0.device	loaded	active	plugged	/sys/devices/platform/serial8250/tty/ttyS0
sys-devices-platform-serial8250-tty-ttyS1.device	loaded	active	plugged	/sys/devices/platform/serial8250/tty/ttyS1
sys-devices-platform-serial8250-tty-ttyS2.device	loaded	active	plugged	/sys/devices/platform/serial8250/tty/ttyS2
sys-devices-platform-serial8250-tty-ttyS3.device	loaded	active	plugged	/sys/devices/platform/serial8250/tty/ttyS3
sys-devices-virtual-misc-rfkill.device	loaded	active	plugged	/sys/devices/virtual/misc/rfkill
sys-module-configs.device	loaded	active	plugged	/sys/module/configs
sys-module-fuse.device	loaded	active	plugged	/sys/module/fuse
sys-subsystem-net-devices-eth0.device	loaded	active	plugged	82540EM Gigabit Ethernet Controller (PRO/1000 MT Desktop)
- .mount	loaded	active	mounted	Root Mount
dev-hugepages.mount	loaded	active	mounted	Huge Pages File System
dev-mqueue.mount	loaded	active	mounted	POSIX Message Queue File System
proc-sys-fs-binfmt_misc.mount	loaded	active	mounted	Arbitrary Executable File Formats File System
run-credentials-systemd-x2dssusers.service.mount	loaded	active	mounted	/run/credentials/systemd-susers.service
run-rpc_pipefs.mount	loaded	active	mounted	RPC Pipe File System
run-user-1000.gvfs.mount	loaded	active	mounted	/run/user/1000/gvfs
run-user-1000.mount	loaded	active	mounted	/run/user/1000
sys-fs-fuse-connections.mount	loaded	active	mounted	FUSE Control File System
sys-kernel-config.mount	loaded	active	mounted	Kernel Configuration File System
sys-kernel-debug.mount	loaded	active	mounted	Kernel Debug File System
sys-kernel-tracing.mount	loaded	active	mounted	Kernel Trace File System
systemd-ask-password-plymouth.path	loaded	active	waiting	Forward Password Requests to Plymouth Directory Watch
systemd-ask-password-wall.path	loaded	active	waiting	Forward Password Requests to Wall Directory Watch

Systemstl list-unit-files command

UNIT FILE	STATE	VENDOR	PRESET
proc-sys-fs-binfmt_misc.autounmount	static	-	-
- .mount	generated	-	-
dev-hugepages.mount	static	-	-
dev-mqueue.mount	static	-	-
media-cdrom0.mount	generated	-	-
proc-fs-nfsd.mount	static	-	-
proc-sys-fs-binfmt_misc.mount	disabled	disabled	disabled
run-rpc_pipefs.mount	static	-	-
sys-fs-fuse-connections.mount	static	-	-
sys-kernel-config.mount	static	-	-
sys-kernel-debug.mount	static	-	-
sys-kernel-tracing.mount	static	-	-
systemd-ask-password-console.path	static	-	-
systemd-ask-password-plymouth.path	static	-	-
systemd-ask-password-wall.path	static	-	-
session-2.scope	transient	-	-
apache-htcacheload.service	disabled	disabled	disabled
apache-htcacheload@.service	disabled	disabled	disabled
apache2.service	disabled	disabled	disabled
apache2@.service	disabled	disabled	disabled
apparmor.service	disabled	disabled	disabled
apt-daily-upgrade.service	static	-	-
apt-daily.service	static	-	-
atftpd.service	indirect	disabled	disabled
auth-rpcgss-module.service	static	-	-
autovt@.service	alias	-	-
avahi-daemon.service	disabled	disabled	disabled
binfmt-support.service	enabled	enabled	enabled
blueman-mechanism.service	disabled	disabled	disabled

Systemctl rescue command can be used to troubleshoot debian system

crontab:

Schedule recurring tasks

```
(kali㉿kali)-[~]
$ crontab -e
no crontab for kali - 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]: /bin/nano
Choose 1-3 [1]: 1
No modification made

# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezone.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
```

useradd:

Add a new user

```
File Actions Edit View Help
(kali㉿kali)-[~]
$ sudo useradd test_user
[sudo] password for kali:
```

passwd:

Change user password

```
(kali㉿kali)-[~] $ passwd
Changing password for kali.
Current password:
New password:
Retype new password:
The password has not been changed.
New password:
Retype new password:
passwd: password updated successfully
```

SUBMITTED BY: ANUJ GUPTA

20BKT0073

**VIT VELLORE (CSE WITH SPECIALIZATION IN
BLOCKCHAIN TECHNOLOGY)**