

Title: Linux Command List Assignment-1

Instructions:

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

File and Directory Operations:

ls: List files and directories

```
(kali㉿kali)-[~]  
$ ls  
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
```

cd: Change directory

```
(kali㉿kali)-[~]  
$ cd Documents
```

pwd: Print working directory

```
(kali㉿kali)-[~/Documents]  
$ pwd  
/home/kali/Documents
```

mkdir: Make directory

```
(kali㉿kali)-[~/Documents]  
$ mkdir my_directory
```

touch: Create an empty file

```
(kali㉿kali)-[~/Documents]  
$ touch myfile.txt
```

cp: Copy files and directories

```
(kali㉿kali)-[~/Documents]  
$ cp myfile.txt /home/kali/Downloads
```

```
(kali㉿kali)-[~/Documents]  
$ cp -r my_directory /home/kali/Downloads
```

mv: Move or rename files and directories

```
(kali㉿kali)-[~/Documents]  
$ mv myfile.txt /home/kali/Downloads
```

```
(kali㉿kali)-[~/Documents]  
$ mv my_directory /home/kali/Downloads
```

rm: Remove files and directories

```
(kali㉿kali)-[~/Downloads]  
$ rm myfile.txt
```

```
(kali㉿kali)-[~/Downloads]  
$ rm -r my_directory
```

find: Search for files and directories

```
(kali㉿kali)-[~/Downloads]  
$ find /home -name myfile.txt  
/home/kali/Downloads/myfile.txt
```

File Viewing and Editing:

cat: Concatenate and display file content

```
(kali㉿kali)-[~/Downloads]  
$ cat myfile.txt  
suiiiiiiii
```

less: View file content with pagination

```
(kali㉿kali)-[~/Downloads]  
$ less myfile.txt
```

```
suiiiiiiii
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```
(END)
```

head: Display the beginning of a file

```
(kali㉿kali)-[~/Downloads]  
$ head myfile.txt  
suiiiiiiii
```

tail: Display the end of a file

```
(kali㉿kali)-[~/Downloads]  
$ tail myfile.txt  
suiiiiiiii  
  
krishna ronaldo
```

nano: Text editor for creating and editing files

```
(kali㉿kali)-[~/Downloads]  
$ nano myfile.txt
```

```
GNU nano 7.2 myfile.txt *  
hi my name is suiii
```

vi/vim: Powerful text editor for experienced users

```
(kali㉿kali)-[~]  
$ vi myfile.txt
```

File Permissions:

chmod: Change file permissions

```
(kali㉿kali)-[~/Downloads]  
$ chmod 755 myfile.txt
```

chown: Change file owner

```
(kali㉿kali)-[~/Downloads]  
$ chown kali myfile.txt
```

chgrp: Change file group

```
(kali㉿kali)-[~/Downloads]  
$ chgrp kali myfile.txt
```

File Compression and Archiving:

tar: Archive files

```
(kali㉿kali)-[~/Downloads]  
$ tar -cvf archive.tar myfile.txt  
myfile.txt
```

gzip: Compress files

```
(kali㉿kali)-[~/Downloads]  
$ gzip myfile.txt
```

unzip: Extract files from a ZIP archive

```
└─$ unzip myfilee
Archive:  myfilee
  End-of-central-directory signature not found.  Either this file is not
  a zipfile, or it constitutes one disk of a multi-part archive.  In the
  latter case the central directory and zipfile comment will be found on
  the last disk(s) of this archive.
Archive:  myfilee.zip
replace myfilee? [y]es, [n]o, [A]ll, [N]one, [r]ename: r
new name: mfyf
extracting: mfyf
```

Process Management:

ps: List running processes

```
(kali㉿kali)-[~/Downloads]
└─$ ps aux
```

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
root	1	0.0	0.4	167744	12132	?	Ss	12:37	0:01	/sbin/init
root	2	0.0	0.0	0	0	?	S	12:37	0:00	[kthreadd]
root	3	0.0	0.0	0	0	?	I<	12:37	0:00	[rcu_gp]
root	4	0.0	0.0	0	0	?	I<	12:37	0:00	[rcu_par_g
root	5	0.0	0.0	0	0	?	I<	12:37	0:00	[slub_flus
root	6	0.0	0.0	0	0	?	I<	12:37	0:00	[netns]
root	8	0.0	0.0	0	0	?	I<	12:37	0:00	[kworker/0
root	10	0.0	0.0	0	0	?	I<	12:37	0:00	[mm_percpu
root	11	0.0	0.0	0	0	?	I	12:37	0:00	[rcu_tasks
root	12	0.0	0.0	0	0	?	I	12:37	0:00	[rcu_tasks
root	13	0.0	0.0	0	0	?	I	12:37	0:00	[rcu_tasks
root	14	0.0	0.0	0	0	?	S	12:37	0:00	[ksoftirqd
root	15	0.0	0.0	0	0	?	I	12:37	0:04	[rcu_preem
root	16	0.0	0.0	0	0	?	S	12:37	0:00	[migration
root	18	0.0	0.0	0	0	?	S	12:37	0:00	[cpuhp/0]
root	19	0.0	0.0	0	0	?	S	12:37	0:00	[cpuhp/1]
root	20	0.0	0.0	0	0	?	S	12:37	0:00	[migration
root	21	0.0	0.0	0	0	?	S	12:37	0:00	[ksoftirqd
root	24	0.0	0.0	0	0	?	S	12:37	0:00	[cpuhp/2]
root	25	0.0	0.0	0	0	?	S	12:37	0:00	[migration
root	26	0.0	0.0	0	0	?	S	12:37	0:00	[ksoftirqd
root	27	0.0	0.0	0	0	?	I	12:37	0:05	[kworker/2
root	28	0.0	0.0	0	0	?	I<	12:37	0:00	[kworker/2
root	32	0.0	0.0	0	0	?	S	12:37	0:00	[kdevtmpfs

top: Display real-time system information and processes

```
(kali㉿kali)-[~/Downloads]
$ top
top - 14:50:33 up 2:12, 1 user, load average: 0.49, 0.21, 0.19
Tasks: 155 total, 1 running, 154 sleeping, 0 stopped, 0 zombie
%Cpu(s): 2.1 us, 1.4 sy, 0.0 ni, 96.3 id, 0.1 wa, 0.0 hi, 0.1 si, 0.0
MiB Mem : 2929.2 total, 1876.2 free, 777.4 used, 433.9 buff/cache
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used. 2151.8 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+
571	root	20	0	449012	120784	62900	S	5.3	4.0	1:43.23
40242	kali	20	0	456120	102112	83152	S	1.7	3.4	0:01.54
889	kali	20	0	217960	2448	2104	S	0.7	0.1	0:34.18
939	kali	20	0	585788	100180	77468	S	0.7	3.3	0:26.11
970	kali	20	0	231508	29244	19412	S	0.7	1.0	0:01.64
993	kali	20	0	207076	34624	19072	S	0.7	1.2	0:17.77
987	kali	20	0	461836	82124	40272	S	0.3	2.7	0:07.10
994	kali	20	0	340000	28984	17728	S	0.3	1.0	0:00.33
995	kali	20	0	350296	30712	20800	S	0.3	1.0	0:13.02
1075	kali	20	0	192516	26676	17228	S	0.3	0.9	0:00.51
1	root	20	0	167744	12132	9024	S	0.0	0.4	0:01.16
2	root	20	0	0	0	0	S	0.0	0.0	0:00.01
3	root	0	-20	0	0	0	I	0.0	0.0	0:00.00
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00

kill: Terminate processes

```
(kali㉿kali)-[~]
$ kill 965
```

bg: Run processes in the background

```
(kali㉿kali)-[~/Downloads]
$ command &
[1] 44555
[1] + done          command
```

fg: Bring background processes to the foreground

```
(kali㉿kali)-[~/Downloads]
$ fg
fg: no current job
```

System Information:

uname: Print system information

```
(kali㉿kali)-[~/Downloads]
$ uname -a
Linux kali 6.1.0-kali5-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.12-1kali2 (2023-02-23) x86_64 GNU/Linux
```

df: Display disk space usage

```
(kali㉿kali)-[~/Downloads]
$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.4G   0    1.4G   0% /dev
tmpfs           293M  912K   293M   1% /run
/dev/sda1       79G   13G   62G   18% /
tmpfs           1.5G   0    1.5G   0% /dev/shm
tmpfs           5.0M   0    5.0M   0% /run/lock
tmpfs           293M   84K   293M   1% /run/user/1000
```

free: Display memory usage

```
(kali㉿kali)-[~/Downloads]
$ free -m
              total        used        free      shared  buff/cache   availa
ble
Mem:           2929         797        1856          10         433         2
131
Swap:          1023           0         1023
```

uptime: Show system uptime

```
(kali㉿kali)-[~/Downloads]
$ uptime
14:54:38 up 2:16, 1 user, load average: 0.03, 0.16, 0.17
```

who: Display logged-in users

```
(kali㉿kali)-[~/Downloads]
$ who
kali      tty7                2023-05-28 12:38 (:0)
```


w: Display logged-in users and their activities

```
(kali㉿kali)-[~/Downloads]
$ w
14:55:13 up 2:17, 1 user, load average: 0.02, 0.14, 0.16
USER      TTY      FROM          LOGIN@      IDLE   JCPU   PCPU   WHAT
kali      tty7      :0             12:38       2:17m  1:49   0.52s  xfce4-sessio
```

Networking:

ifconfig: Configure network interfaces

```
(kali㉿kali)-[~/Downloads]
$ 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::b036:c6e3:d0d2:ac5e prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:c7:e1:36 txqueuelen 1000 (Ethernet)
    RX packets 1 bytes 590 (590.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 33 bytes 4964 (4.8 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 4 bytes 240 (240.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 4 bytes 240 (240.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

ping: Send ICMP echo requests to a network host

```
(kali㉿kali)-[~/Downloads]
$ ping google.com
PING google.com (142.250.183.174) 56(84) bytes of data.
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=1 ttl=52
time=81.4 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=2 ttl=52
time=104 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=3 ttl=52
time=24.7 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=4 ttl=52
time=148 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=5 ttl=52
time=68.4 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=6 ttl=52
time=90.8 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=7 ttl=52
time=115 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=8 ttl=52
time=138 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=9 ttl=52
time=57.7 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=10 ttl=52
time=79.7 ms
```

ssh: Securely connect to a remote system

```
(kali㉿kali)-[~/Downloads]  
$ ssh kali@192.168.0.7  
█
```

scp: Securely copy files between systems

```
(kali㉿kali)-[~]  
$ scp myfilee.txt kali@192.168.0.7:/C:/Windows/System64/█
```

wget: Download files from the web

```
(kali㉿kali)-[~]  
$ wget http://www.google.com/  
--2023-05-28 15:00:10-- http://www.google.com/  
Resolving www.google.com (www.google.com)... 172.217.174.228, 2404:6800:4009:801::2004  
Connecting to www.google.com (www.google.com)|172.217.174.228|:80... connecte  
d.  
HTTP request sent, awaiting response... 200 OK  
Length: unspecified [text/html]  
Saving to: 'index.html'  
  
index.html          [  =>  ] 19.05K  --.-KB/s    in 0s  
  
2023-05-28 15:00:10 (118 MB/s) - 'index.html' saved [19509]
```

System Administration:

sudo: Execute commands with superuser privileges

```
(kali㉿kali)-[~/Downloads]  
$ sudo su  
[sudo] password for kali:  
(root㉿kali)-[/home/kali/Downloads]  
# █
```

apt-get: Package management for Debian-based distributions

```
(root@kali)-[/home/kali/Downloads]
# apt-get update
Get:1 http://kali.download/kali kali-rolling InRelease [41.2 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [19.3 MB]
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [44.7 MB]
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [115 kB]
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [17 2 kB]
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [217 kB]
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [9 28 kB]
Fetched 65.4 MB in 26s (2,554 kB/s)
Reading package lists ... Done
```

yum: Package management for Red Hat-based distributions

```
(root@kali)-[/home/kali/Downloads]
# yum info vsftpd
Command 'yum' not found, did you mean:
  command 'sum' from deb coreutils
  command 'num' from deb quickcal
  command 'zum' from deb perforate
  command 'uum' from deb freewnn-jserver
Try: apt install <deb name>
```

systemctl: Manage system services

```
(root@kali)-[/home/kali/Downloads]
# systemctl list-unit-files --type=service --all
```

UNIT	FILE	STATE	PRESET
apache-htcacheclean.service		disabled	disabled
apache-htcacheclean@.service		disabled	disabled
apache2.service		disabled	disabled
apache2@.service		disabled	disabled
apparmor.service		disabled	disabled
apt-daily-upgrade.service		static	-
apt-daily.service		static	-
atftpd.service		indirect	disabled
auth-rpcgss-module.service		static	-
autovt@.service		alias	-
avahi-daemon.service		disabled	disabled
blueman-mechanism.service		disabled	disabled
bluetooth.service		disabled	disabled
colord.service		static	-
console-getty.service		disabled	disabled
console-setup.service		enabled	enabled
container-getty@.service		static	-
cron.service		enabled	enabled
cryptdisks-early.service		masked	disabled
cryptdisks.service		masked	disabled

crontab: Schedule recurring tasks

```
(root@kali)-[/home/kali/Downloads]
# crontab -e
no crontab for root - 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]: k
Choose 1-3 [1]: 1
No modification made
```

useradd: Add a new user

```
(root@kali)-[/home/kali/Downloads]
# useradd new
```

passwd: Change user password

```
(root@kali)-[/home/kali/Downloads]
# passwd new
New password:
Retype new password:
passwd: password updated successfully
```

Submitted by:

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VIT-AP