“Mastering the Command Line”

Top 50 Linux Commands Every User Should Know “ Explained with Real-World Examples”

1. **ls**—The most frequently used command in Linux to list directories

2. **pwd**—Print working directory command in Linux

3. **cd**—Linux command to navigate through directories

4. **mkdir**—Command used to create directories in Linux

5. **mv**—Move or rename files in Linux

6. **cp**—Similar usage as mv but for copying files in Linux

7. **rm**—Delete files or directories

8. **touch**—Create blank/empty files

9. **ln**—Create symbolic links (shortcuts) to other files

10. **cat**—Display file contents on the terminal

11. **clear**—Clear the terminal display

12. **echo**—Print any text that follows the command

13. **less**—Linux command to display paged outputs in the terminal

14. **man**—Access manual pages for all Linux commands

15. **uname**—Linux command to get basic information about the OS

16. **whoami**—Get the active username

17. **tar**—Command to extract and compress files in Linux

18. **grep**—Search for a string within an output

19. **head—**Return the specified number of lines from the top

20. **tail**—Return the specified number of lines from the bottom

21. **diff**—Find the difference between two files

22. **cmp**—Allows you to check if two files are identical

23. **comm**—Combines the functionality of diff and cmp

24. **sort**—Linux command to sort the content of a file while outputting

25. **export**—Export environment variables in Linux

26. **zip**—Zip files in Linux

27. **unzip**—Unzip files in Linux

28. **ssh**—Secure Shell command in Linux

29. **service**—Linux command to start and stop services

30. **ps**—Display active processes

31. **kill and killall**—Kill active processes by process ID or name

32. **df**—Display disk filesystem information

33. **mount**—Mount file systems in Linux

34. **chmod**—Command to change file permissions

35. **chown**—Command for granting ownership of files or folders

36. **ifconfig**—Display network interfaces and IP addresses

37. **traceroute**—Trace all the network hops to reach the destination

38. **wget**—Direct download files from the internet

39. **ufw**—Firewall command

40. **iptables**—Base firewall for all other firewall utilities to interface with

41. **apt, pacman, yum, rpm**—Package managers depending on the distro

42. sudo—Command to escalate privileges in Linux

43. cal—View a command-line calendar

44. alias—Create custom shortcuts for your regularly used commands

45. dd—Majorly used for creating bootable USB sticks

46. whereis—Locate the binary, source, and manual pages for a command

47. whatis—Find what a command is used for

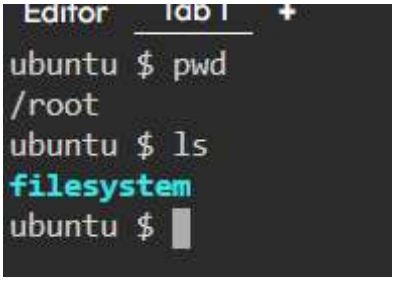
48. top—View active processes live with their system usage

49. useradd and **usermod**—Add new user or change existing users data

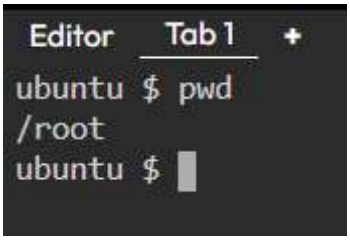
50. passwd—Create or update passwords for existing users

Learn more about each command's real-time use case :

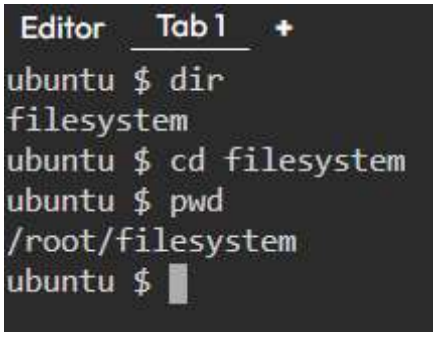
1. ls—The most frequently used command in Linux to list directories.



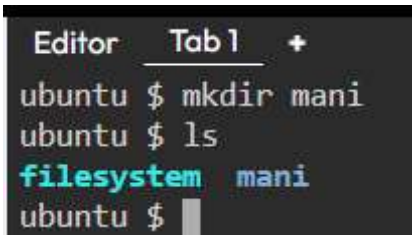
2. pwd—Print working directory command in Linux



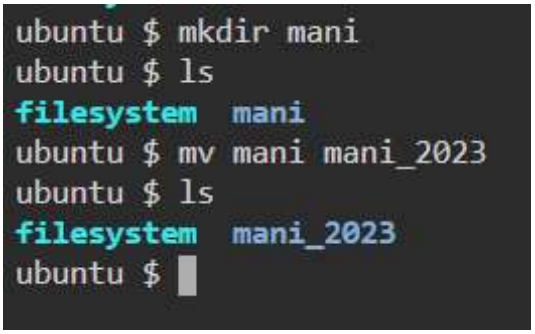
3. **cd**—Linux command to navigate through directories



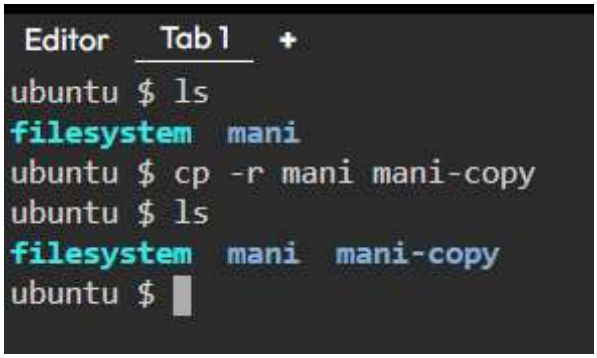
4. **mkdir**—Command used to create directories in Linux



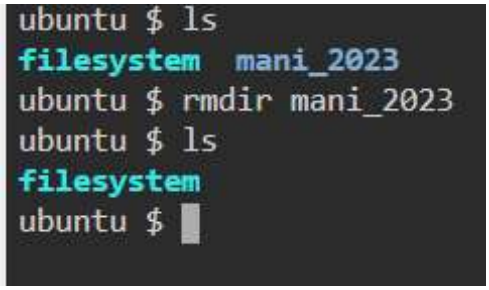
5. **mv**—Move or rename files in Linux



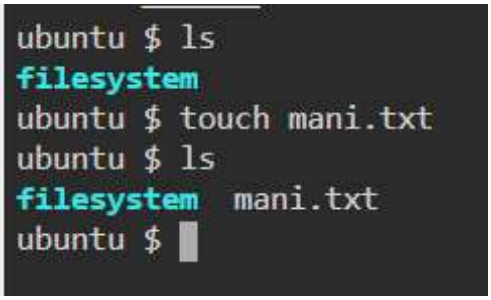
6. **cp**—Similar usage as mv but for copying files in Linux



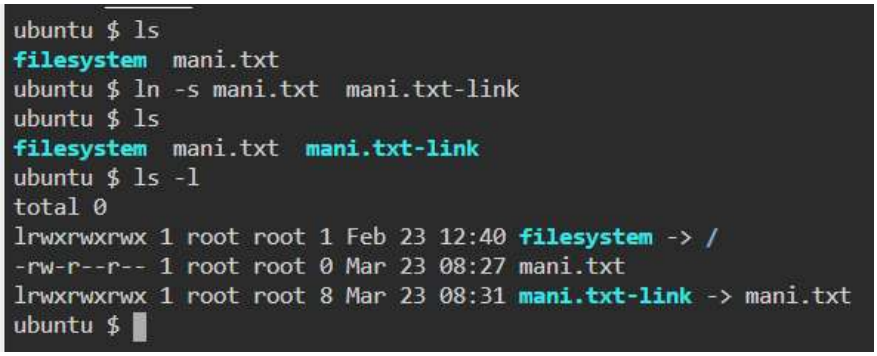
7. **rm**—Delete files or directories



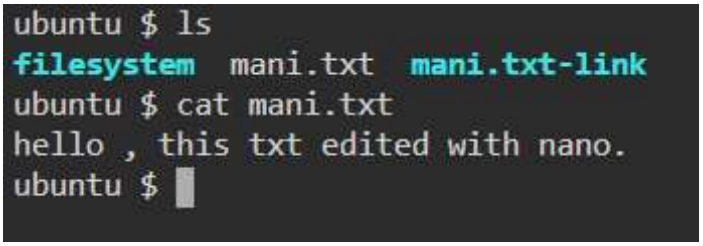
8. **touch**—Create blank/empty files



9. **ln**—Create symbolic links (shortcuts) to other files



10. **cat**—Display file contents on the terminal



11. **clear**—Clear the terminal display

```
ubuntu $ ls -l
total 4
lrwxrwxrwx 1 root root  1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root 35 Mar 23 08:36 mani.txt
lrwxrwxrwx 1 root root  8 Mar 23 08:31 mani.txt-link -> mani.txt
ubuntu $ clear
```

12. echo—Print any text that follows the command.

```
ubuntu $ ls -l
total 4
lrwxrwxrwx 1 root root  1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root 35 Mar 23 08:36 mani.txt
lrwxrwxrwx 1 root root  8 Mar 23 08:31 mani.txt-link -> mani.txt
ubuntu $ echo mani.txt
mani.txt
ubuntu $ echo filesystme
filesystme
```

13. less—Linux command to display paged outputs in the terminal.

```
ubuntu $ ls -l
total 4
lrwxrwxrwx 1 root root   1 Feb 23 12:40 filesystem ->
-rw-r--r-- 1 root root 474 Mar 23 12:50 mani.txt
ubuntu $ less mani.txt
```

```
<!DOCTYPE html>
<html>
<head>
        <title>My Simple Website</title>
</head>
<body>
        <header>
                <h1>Welcome to My Website</h1>
        </header>
        <nav>
                <ul>
                        <li><a href="#">Home</a></li>
                        <li><a href="#">About</a></li>
                        <li><a href="#">Contact</a></li>
                </ul>
        </nav>
        <main>
                <h2>About Us</h2>
                <p>We are a small team of developers who create amazing websites.</p>
        </main>
        <footer>
                <p>&copy; 2023 My Simple Website. All rights reserved.</p>
        </footer>
</body>
</html>

mani.txt (END)
```

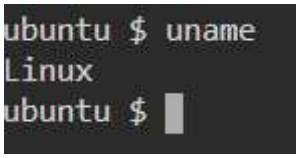
14. man—Access manual pages for all Linux commands ;

The `man` command in Linux is used to display the manual pages of Linux commands and other system functionalities.

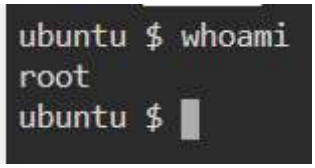
```
Editor    Tab 1    +
ubuntu $ man mkdir
```

```
Editor  Tab 1  +
MKDIR(1)                                                    User Commands

NAME
       mkdir - make directories

SYNOPSIS
       mkdir [OPTION]... DIRECTORY...

DESCRIPTION
       Create the DIRECTORY(ies), if they do not already exist.

       Mandatory arguments to long options are mandatory for short options too.

       -m, --mode=MODE
              set file mode (as in chmod), not a=rwx - umask

       -p, --parents
              no error if existing, make parent directories as needed

       -v, --verbose
              print a message for each created directory

       -Z     set SELinux security context of each created directory to the default type

       --context[=CTX]
              like -Z, or if CTX is specified then set the SELinux or SMACK security context to CTX

       --help display this help and exit

       --version
              output version information and exit

AUTHOR
       Written by David MacKenzie.

REPORTING BUGS
       GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
 Manual page mkdir(1) line 1 (press h for help or q to quit)
```

15. uname—Linux command to get basic information about the OS



16. whoami—Get the active username



17. tar—Command to extract and compress files in Linux

```
ubuntu $ ls -l
total 4
lrwxrwxrwx 1 root root   1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root 474 Mar 23 12:50 mani.txt
ubuntu $ tar -cvf archive.tar mani.txt
mani.txt
ubuntu $ tar -xvf archive.tar
mani.txt
ubuntu $ tar -tvf archive.tar
-rw-r--r-- root/root       474 2023-03-23 12:50 mani.txt
ubuntu $
```

18. grep—Search for a string within an output

```
ubuntu $ ls -l
total 16
-rw-r--r-- 1 root root 10240 Mar 23 13:05 archive.tar
lrwxrwxrwx 1 root root     1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root   474 Mar 23 12:50 mani.txt
ubuntu $ cat mani.txt | grep "2023"
                <p>&copy; 2023 My Simple Website. All rights reserved.</p>
ubuntu $
```

19. head—Return the specified number of lines from the top

```
ubuntu $ ls -l
total 16
-rw-r--r-- 1 root root 10240 Mar 23 13:05 archive.tar
lrwxrwxrwx 1 root root     1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root   474 Mar 23 12:50 mani.txt
ubuntu $ head mani.txt
<!DOCTYPE html>
<html>
<head>
        <title>My Simple Website</title>
</head>
<body>
        <header>
                <h1>Welcome to My Website</h1>
        </header>
        <nav>
ubuntu $
```

20. tail—Return the specified number of lines from the bottom

```
ubuntu $ ls -l
total 16
-rw-r--r-- 1 root root 10240 Mar 23 13:05 archive.tar
lrwxrwxrwx 1 root root     1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root   474 Mar 23 12:50 mani.txt
ubuntu $ tail mani.txt
        <main>
                <h2>About Us</h2>
                <p>We are a small team of developers who create amazing websites.</p>
        </main>
        <footer>
                <p>&copy; 2023 My Simple Website. All rights reserved.</p>
        </footer>
</body>
</html>

ubuntu $
```

21. diff—Find the difference between two files

```
ubuntu $ ls -l
total 24
-rw-r--r-- 1 root root   513 Mar 23 13:27 a
-rw-r--r-- 1 root root 10240 Mar 23 13:05 archive.tar
lrwxrwxrwx 1 root root     1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root   474 Mar 23 12:50 mani1.txt
-rw-r--r-- 1 root root   507 Mar 23 13:29 mani2.txt
ubuntu $ diff mani1.txt mani2.txt
26a27,28
> This code edited with nano tool
>
ubuntu $
```

22. cmp—Allows you to check if two files are identical.

```
ubuntu $ ls -l
total 24
-rw-r--r-- 1 root root   513 Mar 23 13:27 a
-rw-r--r-- 1 root root 10240 Mar 23 13:05 archive.tar
lrwxrwxrwx 1 root root     1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root   474 Mar 23 12:50 mani1.txt
-rw-r--r-- 1 root root   507 Mar 23 13:29 mani2.txt
ubuntu $ cmp  mani1.txt mani2.txt
cmp: EOF on mani1.txt after byte 474, line 26
ubuntu $
```

23. comm—Combines the functionality of diff and cmp

```
ubuntu $ comm  mani1.txt mani2.txt
                <!DOCTYPE html>
                <html>
                <head>
                        <title>My Simple Website</title>
                </head>
                <body>
                        <header>
                                <h1>Welcome to My Website</h1>
                        </header>
                        <nav>
                                <ul>
                                        <li><a href="#">Home</a></li>
                                        <li><a href="#">About</a></li>
                                        <li><a href="#">Contact</a></li>
                                </ul>
                        </nav>
                        <main>
                                <h2>About Us</h2>
                                <p>We are a small team of developers who create amazing websites.</p>
                        </main>
                        <footer>
                                <p>&copy; 2023 My Simple Website. All rights reserved.</p>
                        </footer>
                </body>
                </html>

        This code edited with nano tool
comm: file 2 is not in sorted order
```

24. sort—Linux command to sort the content of a file while outputting

```
ubuntu $ ls -l
total 4
lrwxrwxrwx 1 root root  1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root 39 Mar 23 13:51 mani.txt
ubuntu $ sort mani.txt

hello
this txt file edited with nano
ubuntu $
```

25. export—Export environment variables in Linux

```
ubuntu $ export PASSWORD=mysupersecretpassword
ubuntu $ #!/bin/bash
ubuntu $ echo "The password is: $PASSWORD"
The password is: mysupersecretpassword
ubuntu $
```

26. zip—Zip files in Linux

```
ubuntu $ ls -l
total 4
lrwxrwxrwx 1 root root  1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root 39 Mar 23 13:51 mani.txt
ubuntu $ zip mani.zip mani.txt
  adding: mani.txt (stored 0%)
ubuntu $ ls -l
total 8
lrwxrwxrwx 1 root root   1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root  39 Mar 23 13:51 mani.txt
-rw-r--r-- 1 root root 205 Mar 23 14:17 mani.zip
```

27. unzip—Unzip files in Linux

```
ubuntu $ ls -l
total 8
lrwxrwxrwx 1 root root   1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root  39 Mar 23 13:51 mani.txt
-rw-r--r-- 1 root root 205 Mar 23 14:17 mani.zip
ubuntu $ unzip mani.zip
Archive:  mani.zip
replace mani.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: n
ubuntu $ ls -l
total 8
lrwxrwxrwx 1 root root   1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root  39 Mar 23 13:51 mani.txt
-rw-r--r-- 1 root root 205 Mar 23 14:17 mani.zip
ubuntu $
```

28. ssh—Secure Shell command in Linux

ssh username@hostname

29. service—Linux command to start and stop services

root@ubuntu:~ →> service ssh status
root@ubuntu:~ →> service ssh stop
root@ubuntu:~ →> service ssh start

```
ubuntu $ service ssh status
● ssh.service - OpenBSD Secure Shell server
     Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2023-02-23 12:36:58 UTC; 4 weeks 0 days ago
       Docs: man:sshd(8)
             man:sshd_config(5)
   Main PID: 597 (sshd)
      Tasks: 75 (limit: 2339)
     Memory: 1.3G
     CGroup: /system.slice/ssh.service
             ├─  597 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
             ├─21578 /opt/theia/node /opt/theia/browser-app/src-gen/backend/main.js /root --hostname=0.0.0.0 --port 40205
             ├─21589 bash -c while true; do /bin/kc-terminal -p 40200 -t disableLeaveAlert=true bash; done
             ├─21591 /bin/kc-terminal -p 40200 -t disableLeaveAlert=true bash
             ├─21612 sshd: kc-internal@notty
             ├─21625 dhclient -v
             ├─21677 dhclient -v
             ├─21710 dhclient -v
```

30. ps—Display active processes

```
ubuntu $ ps
    PID TTY          TIME CMD
  22514 pts/0    00:00:00 bash
  23118 pts/0    00:00:00 systemctl
  23122 pts/0    00:00:00 pager
  23296 pts/0    00:00:00 sudo
  23297 pts/0    00:00:00 su
  23320 pts/0    00:00:00 bash
  23848 pts/0    00:00:00 ps
ubuntu $
```

31. kill and killall—Kill active processes by process ID or name

```
Editor  Tab 1  +
ubuntu $ ps
    PID TTY          TIME CMD
  22514 pts/0    00:00:00 bash
  23118 pts/0    00:00:00 systemctl
  23122 pts/0    00:00:00 pager
  23296 pts/0    00:00:00 sudo
  23297 pts/0    00:00:00 su
  23320 pts/0    00:00:00 bash
  24066 pts/0    00:00:00 bash
  24658 pts/0    00:00:00 ps
ubuntu $ kill 23297
ubuntu $
Session terminated, killing shell... ...killed.
Terminated
ubuntu $
```

32. df—Display disk filesystem information

```
ubuntu $ df
Filesystem     1K-blocks    Used Available Use% Mounted on
udev              998196       0    998196   0% /dev
tmpfs             203096    1008    202088   1% /run
/dev/vda1       20134592 4595532  15522676  23% /
tmpfs            1015468       0   1015468   0% /dev/shm
tmpfs               5120       0      5120   0% /run/lock
tmpfs            1015468       0   1015468   0% /sys/fs/cgroup
/dev/loop0         64768   64768         0 100% /snap/core20/1634
/dev/loop1         69504   69504         0 100% /snap/lxd/22753
/dev/loop2         49152   49152         0 100% /snap/snapd/17336
/dev/vda15        106858    5313    101545   5% /boot/efi
ubuntu $
```

33. **mount**—Mount file systems in Linux.

```
root@ubuntu:~ -->> mount /dev/cdrom /mnt
root@ubuntu:~ -->> df -h
```

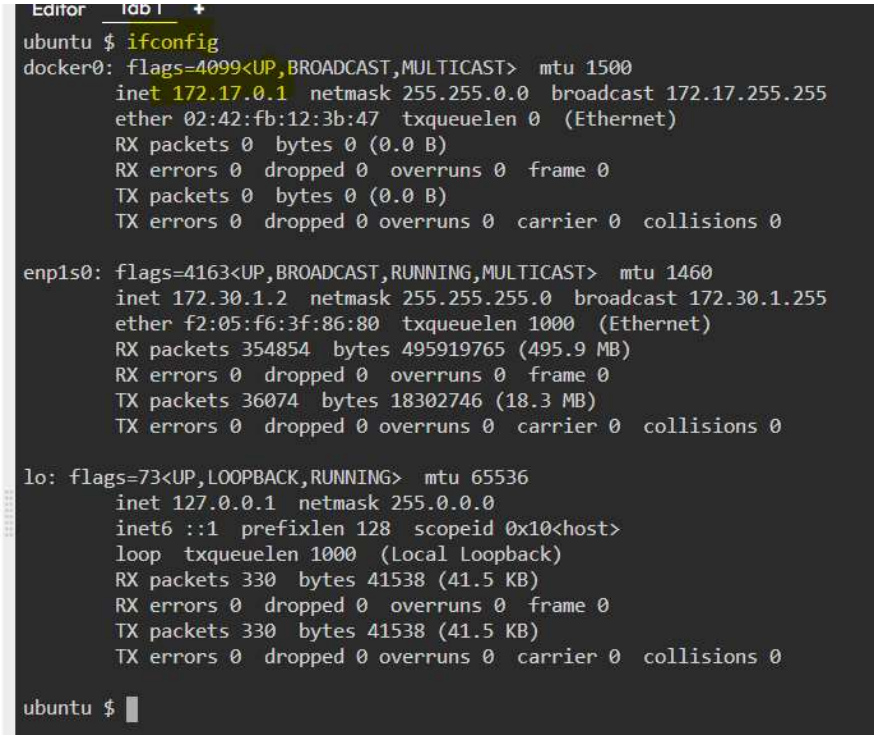
34. **chmod**—Command to change file permissions

```
ubuntu $ ls -l
total 16
drwxr-xr-x 2 root root 4096 Mar 23 16:24 755
drwxr-xr-x 2 root root 4096 Mar 23 16:22 do-w
drwxr-xr-x 2 root root 4096 Mar 23 16:24 example.sh
lrwxrwxrwx 1 root root    1 Feb 23 12:40 filesystem -> /
drwxr-xr-x 2 root root 4096 Mar 23 16:22 importany.txt
ubuntu $
```

35. **chown**—Command for granting ownership of files or folders.

```
ubuntu $ touch important.txt
ubuntu $ chmod go-w important.txt
ubuntu $ ls -l
total 0
lrwxrwxrwx 1 root root 1 Feb 23 12:40 filesystem -> /
-rw-r--r-- 1 root root 0 Mar 23 16:29 important.txt
ubuntu $
```

36. **ifconfig**—Display network interfaces and IP addresses



37. **traceroute**—Trace all the network hops to reach the destination

```
ubuntu $ traceroute localhost
traceroute to localhost (127.0.0.1), 64 hops max
  1   127.0.0.1  0.002ms  0.002ms  0.001ms
ubuntu $ traceroute google.com
traceroute to google.com (74.125.24.101), 64 hops max
  1   172.30.1.1  0.073ms  0.033ms  0.039ms
  2   51.79.228.231  0.077ms  0.042ms  0.041ms
  3   51.79.228.252  0.488ms  0.273ms  0.301ms
  4   10.161.49.124  0.212ms  0.166ms  0.144ms
  5   10.133.3.56  0.502ms  0.372ms  0.366ms
  6   10.75.0.54  0.177ms  0.205ms  0.142ms
  7   10.75.248.14  0.885ms  0.638ms  0.757ms
  8   103.5.15.16  4.384ms  1.964ms  1.968ms
  9   10.200.0.198  1.480ms  1.330ms  1.347ms
 10   *  *  *
 11   *  *  *
 12   142.251.241.0  0.795ms  0.680ms  0.727ms
 13   108.170.240.241  2.985ms  0.986ms  0.895ms
 14   216.239.35.154  1.570ms  *  1.501ms
 15   142.251.229.230  26.301ms  8.491ms  1.493ms
 16   66.249.94.149  2.482ms  2.588ms  3.031ms
 17   *  *  *
 18   *  *  *
 19   *  *  *
 20   *  *  *
 21   *  *  *
 22   *  *  *
 23   *  *  *
 24   *  *  *
 25   *  *  *
 26   74.125.24.101  1.264ms  1.213ms  1.261ms
ubuntu $
```

38. wget—Direct download files from the internet.

```
ubuntu $ wget https://www.putty.org/
--2023-03-23 16:42:37--  https://www.putty.org/
Resolving www.putty.org (www.putty.org)... 52.84.251.60, 52.84.251.59, 52.84.251.5, ...
Connecting to www.putty.org (www.putty.org)|52.84.251.60|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4384 (4.3K) [text/html]
Saving to: 'index.html'

index.html                      100%[=================================================================>]   4.28K  --.-KB/s    in 0.001s

2023-03-23 16:42:37 (7.28 MB/s) - 'index.html' saved [4384/4384]

ubuntu $
```

39. ufw—Firewall command

```
ubuntu $ sudo ufw enable
Firewall is active and enabled on system startup
ubuntu $ sudo ufw allow ssh
Skipping adding existing rule
Skipping adding existing rule (v6)
ubuntu $ sudo ufw allow http
Skipping adding existing rule
Skipping adding existing rule (v6)
ubuntu $
```

40. iptables—Base firewall for all other firewall utilities to interface with

```
ubuntu $ sudo iptables -A INPUT -p tcp --dport 22 -j DROP
ubuntu $ sudo iptables -A INPUT -p tcp --dport 80 -j ACCEPT
ubuntu $ sudo iptables -P OUTPUT ACCEPT
ubuntu $ ufw allow 80
Rule added
Rule added (v6)
ubuntu $
```

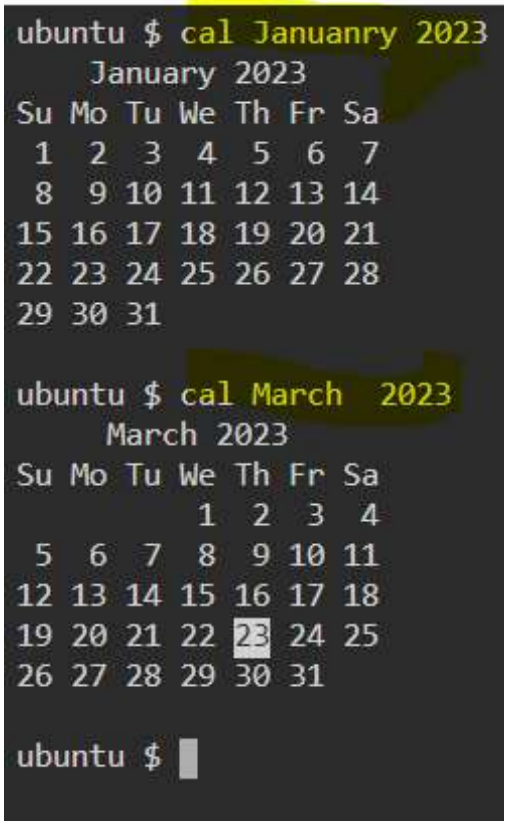
41. apt, pacman, yum, rpm—Package managers depending on the distro.

- **Debian and Debian-based distros**—apt install <package name>
- **Arch and Arch-based distros**—pacman -S <package name>
- **Red Hat and Red Hat-based distros**—yum install <package name>
- **Fedora and CentOS**—yum install <package>

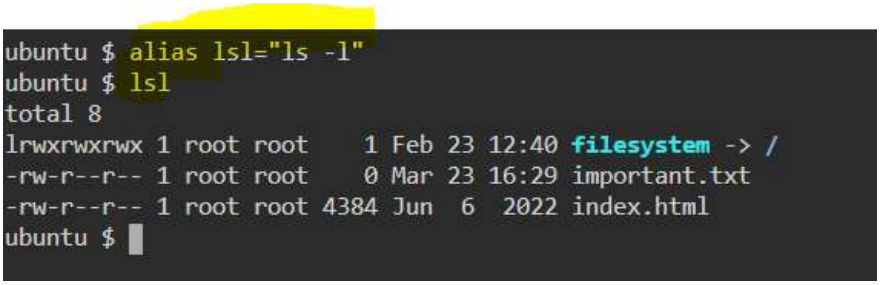
42. sudo—Command to escalate privileges in Linux.

```
ubuntu $ sudo su
ubuntu $ pwd
/root
ubuntu $
```

43. cal—View a command-line calendar.

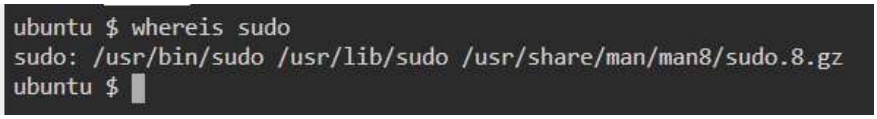


44. alias—Create custom shortcuts for your regularly used commands.



45. dd—Majorly used for creating bootable USB sticks

46. whereis—Locate the binary, source, and manual pages for a command.



47. whatis—Find what a command is used for

```
ubuntu $ whatis sudo
sudo (8)              - execute a command as another user
ubuntu $
```

48. top—View active processes live with their system usage

```
top - 16:56:44 up 54 min,  0 users,  load average: 0.08, 0.08, 0.03
Tasks: 123 total,   1 running, 122 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,  1.3 sy,  4.7 ni, 94.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   1983.3 total,    176.3 free,    356.2 used,   1450.8 buff/cache
MiB Swap:   1024.0 total,   1023.2 free,      0.8 used.   1435.6 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  21578 root      39  19  858652  80168  34224 S   0.7   3.9   0:05.49 node
  22499 root      20   0       0      0      0 I   0.3   0.0   0:00.11 kworker/u2:0-events_power_efficie
  22596 root      39  19  842988  62776  30124 S   0.3   3.1   0:06.15 node
  22669 root      39  19  559336  38880  29732 S   0.3   1.9   0:00.19 node
      1 root      20   0  169472  12456   7864 S   0.0   0.6   0:13.83 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
      9 root      20   0       0      0      0 S   0.0   0.0   0:00.53 ksoftirqd/0
     10 root      20   0       0      0      0 I   0.0   0.0   0:00.55 rcu_sched
     11 root      rt   0       0      0      0 S   0.0   0.0   0:00.01 migration/0
     12 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
     14 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     15 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtmpfs
     16 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
     17 root      20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_tasks_kthre
     18 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kauditd
     19 root      20   0       0      0      0 S   0.0   0.0   0:00.00 khungtaskd
     20 root      20   0       0      0      0 S   0.0   0.0   0:00.00 oom_reaper
     21 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 writeback
```

49. useradd and **usermod**—Add new user or change existing users data.

```
ubuntu $ useradd priyanka
ubuntu $ usermod -s /bin/zsh john
usermod: no changes
ubuntu $ usermod -s /bin/zsh priya
ubuntu $
```

50. passwd—Create or update passwords for existing users.

```
ubuntu $ passwd
New password:
Retype new password:
passwd: password updated successfully
ubuntu $
```

Credits : digitalocean

That's it, thank you for reading.

👉 In case you would like to continue the discussion, you can always reach out to me on Twitter or on LinkedIn for professional networking, if you feel like following me on GitHub you can also do that.

👉 Follow Cloudnloud Tech Community for more insightful knowledge & resources & CloudnLoud YouTube channel.