

## 1. Check system information

```
ubuntu@ip-172-31-27-240:~$ uname -a
Linux ip-172-31-27-240 6.8.0-1021-aws #23~22.04.1-Ubuntu SMP Tue Dec 10 16:50:46 UTC 2024 x86_64 x86_64 x86_64 GNU/Linux
ubuntu@ip-172-31-27-240:~$
```

## 2. Manage users (create, delete, modify)

```
ubuntu@ip-172-31-27-240: ~
```

```
ubuntu@ip-172-31-27-240:~$ sudo useradd linux
ubuntu@ip-172-31-27-240:~$ sudo usermod -l aws linux
ubuntu@ip-172-31-27-240:~$ sudo userdel aws
ubuntu@ip-172-31-27-240:~$ |
```

## 3. Manage groups (create, delete, modify)

```
ubuntu@ip-172-31-27-240:~$ sudo groupadd chennai
ubuntu@ip-172-31-27-240:~$ sudo groupmod -n banglore chennai
ubuntu@ip-172-31-27-240:~$ sudo groupdel banglore
ubuntu@ip-172-31-27-240:~$ |
```

## 4. Change user passwords

```
ubuntu@ip-172-31-27-240:~$ sudo useradd pen
ubuntu@ip-172-31-27-240:~$ sudo passwd pen
New password:
Retype new password:
passwd: password updated successfully
ubuntu@ip-172-31-27-240:~$
```

5. Create, rename, move, and delete files

```
ubuntu@ip-172-31-27-240:~$ touch sunday
ubuntu@ip-172-31-27-240:~$ mv sunday temple
ubuntu@ip-172-31-27-240:~$ ls
anil.txt  temple
ubuntu@ip-172-31-27-240:~$
ubuntu@ip-172-31-27-240:~$ mkdir jenkins
ubuntu@ip-172-31-27-240:~$ ls
anil.txt  jenkins  temple
ubuntu@ip-172-31-27-240:~$ mv temple jenkins
ubuntu@ip-172-31-27-240:~$ ls
anil.txt  jenkins
ubuntu@ip-172-31-27-240:~$ cd jenkins
ubuntu@ip-172-31-27-240:~/jenkins$ ls
temple
ubuntu@ip-172-31-27-240:~/jenkins$ cd ..
ubuntu@ip-172-31-27-240:~$ ls
anil.txt  jenkins
ubuntu@ip-172-31-27-240:~$ rm -rf jenkins
ubuntu@ip-172-31-27-240:~$ ls
anil.txt
ubuntu@ip-172-31-27-240:~$ |
```

6. Create, rename, move, and delete directories

```

ubuntu@ip-172-31-27-240:~$ ls
ubuntu@ip-172-31-27-240:~$ mkdir anil
ubuntu@ip-172-31-27-240:~$ ls
anil
ubuntu@ip-172-31-27-240:~$ mv anil riyan
ubuntu@ip-172-31-27-240:~$ ls
riyan
ubuntu@ip-172-31-27-240:~$ touch file
ubuntu@ip-172-31-27-240:~$ ls
file  riyan
ubuntu@ip-172-31-27-240:~$ mv file riyan
ubuntu@ip-172-31-27-240:~$ ls
riyan
ubuntu@ip-172-31-27-240:~$ cd riyan
ubuntu@ip-172-31-27-240:~/riyan$ ls
file
ubuntu@ip-172-31-27-240:~/riyan$ cd ..
ubuntu@ip-172-31-27-240:~$ ls
riyan
ubuntu@ip-172-31-27-240:~$ rm -rf riyan
ubuntu@ip-172-31-27-240:~$ ls
ubuntu@ip-172-31-27-240:~$ |

```

#### 7. Change file permissions

```

ubuntu@ip-172-31-27-240:~$ touch raja
ubuntu@ip-172-31-27-240:~$ ls -l raja
-rw-rw-r-- 1 ubuntu ubuntu 0 Feb 23 18:28 raja
ubuntu@ip-172-31-27-240:~$ chmod 777
chmod: missing operand after '777'
Try 'chmod --help' for more information.
ubuntu@ip-172-31-27-240:~$ chmod 777 raja
ubuntu@ip-172-31-27-240:~$ ll
total 36
drwxr-x--- 5 ubuntu ubuntu 4096 Feb 23 18:28 ./
drwxr-xr-x 3 root root 4096 Feb 23 13:09 ../
-rw----- 1 ubuntu ubuntu 2343 Feb 23 17:04 .bash_history
-rw-r--r-- 1 ubuntu ubuntu 220 Jan 6 2022 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Jan 6 2022 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Feb 23 13:13 .cache/
drwx----- 3 ubuntu ubuntu 4096 Feb 23 13:16 .config/
-rw-r--r-- 1 ubuntu ubuntu 807 Jan 6 2022 .profile
drwx----- 2 ubuntu ubuntu 4096 Feb 23 13:09 .ssh/
-rw-r--r-- 1 ubuntu ubuntu 0 Feb 23 13:32 .sudo_as_admin_successful
-rwxrwxrwx 1 ubuntu ubuntu 0 Feb 23 18:28 raja*
ubuntu@ip-172-31-27-240:~$ |

```

## 8.Change file ownership

```
ubuntu@ip-172-31-27-240:~$ ls -l raja
-rwxrwxrwx 1 ubuntu ubuntu 0 Feb 23 18:28 raja
ubuntu@ip-172-31-27-240:~$ chown root:ubuntu raja
chown: changing ownership of 'raja': Operation not permitted
ubuntu@ip-172-31-27-240:~$ sudo chown root:ubuntu raja
ubuntu@ip-172-31-27-240:~$ ls -l raja
-rwxrwxrwx 1 root ubuntu 0 Feb 23 18:28 raja
ubuntu@ip-172-31-27-240:~$ sudo chown root:root raja
ubuntu@ip-172-31-27-240:~$ ls -l raja
-rwxrwxrwx 1 root root 0 Feb 23 18:28 raja
ubuntu@ip-172-31-27-240:~$
```

## 9. View running processes

```
ubuntu@ip-172-31-27-240:~$ ps -ef
UID          PID    PPID  C STIME TTY          TIME CMD
root           1      0  0 13:09 ?        00:00:02 /sbin/init
root           2      0  0 13:09 ?        00:00:00 [kthreadd]
root           3      2  0 13:09 ?        00:00:00 [pool_workqueue_release]
root           4      2  0 13:09 ?        00:00:00 [kworker/R-rcu_g]
root           5      2  0 13:09 ?        00:00:00 [kworker/R-rcu_p]
root           6      2  0 13:09 ?        00:00:00 [kworker/R-slub_]
root           7      2  0 13:09 ?        00:00:00 [kworker/R-netns]
root           8      2  0 13:09 ?        00:00:01 [kworker/0:0-cgroup_destroy]
root           9      2  0 13:09 ?        00:00:00 [kworker/0:0H-events_highpri]
root          12      2  0 13:09 ?        00:00:00 [kworker/R-mm_pe]
root          13      2  0 13:09 ?        00:00:00 [rcu_tasks_rude_kthread]
root          14      2  0 13:09 ?        00:00:00 [rcu_tasks_trace_kthread]
root          15      2  0 13:09 ?        00:00:00 [ksoftirqd/0]
root          16      2  0 13:09 ?        00:00:00 [rcu_sched]
root          17      2  0 13:09 ?        00:00:00 [migration/0]
root          18      2  0 13:09 ?        00:00:00 [idle_inject/0]
root          19      2  0 13:09 ?        00:00:00 [cpuhp/0]
root          20      2  0 13:09 ?        00:00:00 [cpuhp/1]
root          21      2  0 13:09 ?        00:00:00 [idle_inject/1]
root          22      2  0 13:09 ?        00:00:00 [migration/1]
root          23      2  0 13:09 ?        00:00:00 [ksoftirqd/1]
root          25      2  0 13:09 ?        00:00:00 [kworker/1:0H-events_highpri]
root          26      2  0 13:09 ?        00:00:00 [kdevtmpfs]
root          27      2  0 13:09 ?        00:00:00 [kworker/R-inet_]
root          29      2  0 13:09 ?        00:00:00 [kauditd]
root          31      2  0 13:09 ?        00:00:00 [khungtaskd]
root          32      2  0 13:09 ?        00:00:00 [oom_reaper]
root          34      2  0 13:09 ?        00:00:00 [kworker/R-write]
root          35      2  0 13:09 ?        00:00:00 [kcompactd0]
root          36      2  0 13:09 ?        00:00:00 [ksmd]
root          37      2  0 13:09 ?        00:00:00 [khugepaged]
root          38      2  0 13:09 ?        00:00:00 [kworker/R-kinte]
root          39      2  0 13:09 ?        00:00:00 [kworker/R-kbloc]
root          40      2  0 13:09 ?        00:00:00 [kworker/R-blkcg]
root          41      2  0 13:09 ?        00:00:00 [irq/9-acpi]
root          42      2  0 13:09 ?        00:00:00 [kworker/R-tpm_d]
```

## 10. Kill a process by PID or name

```
ubuntu      3198      1  0 17:29 ?        00:00:00 /lib/systemd/systemd --user
root        3199      2  0 17:29 ?        00:00:00 [kworker/1:0-events]
ubuntu      3200     3198  0 17:29 ?        00:00:00 (sd-pam)
ubuntu      3285     3195  0 17:29 ?        00:00:00 sshd: ubuntu@pts/0
ubuntu      3286     3285  0 17:29 pts/0    00:00:00 -bash
root        3498      2  0 18:20 ?        00:00:00 [kworker/u4:4-events_power_efficient]
root        3519      2  0 18:32 ?        00:00:00 [kworker/u4:0-events_unbound]
root        3537      2  0 18:37 ?        00:00:00 [kworker/u4:1-flush-259:0]
ubuntu      3599     3286  0 18:56 pts/0    00:00:00 ps -ef
ubuntu@ip-172-31-27-240:/$ kill -9 3200
ubuntu@ip-172-31-27-240:/$ sudo kill -9 3200
```

```

root      3195      628  0 17:29 ?      00:00:00 sshd: ubuntu [priv]
ubuntu    3198      1  0 17:29 ?      00:00:00 /lib/systemd/systemd --user
root      3199      2  0 17:29 ?      00:00:00 [kworker/1:0-mm_percpu_wq]
ubuntu    3285     3195  0 17:29 ?      00:00:00 sshd: ubuntu@pts/0
ubuntu    3286     3285  0 17:29 pts/0    00:00:00 -bash
root      3498      2  0 18:20 ?      00:00:00 [kworker/u4:4-writeback]
root      3519      2  0 18:32 ?      00:00:00 [kworker/u4:0-events_unbound]
root      3537      2  0 18:37 ?      00:00:00 [kworker/u4:1-events_power_efficient]
ubuntu    3603     3286  0 18:57 pts/0    00:00:00 ps -ef
root      3195      628  0 17:29 ?      00:00:00 sshd: ubuntu [priv]
ubuntu    3198      1  0 17:29 ?      00:00:00 /lib/systemd/systemd --user
root      3199      2  0 17:29 ?      00:00:00 [kworker/1:0-mm_percpu_wq]
ubuntu    3285     3195  0 17:29 ?      00:00:00 sshd: ubuntu@pts/0
ubuntu    3286     3285  0 17:29 pts/0    00:00:00 -bash
root      3498      2  0 18:20 ?      00:00:00 [kworker/u4:4-writeback]
root      3519      2  0 18:32 ?      00:00:00 [kworker/u4:0-events_unbound]
root      3537      2  0 18:37 ?      00:00:00 [kworker/u4:1-events_power_efficient]
ubuntu    3603     3286  0 18:57 pts/0    00:00:00 ps -ef

```

## 11. Check disk usage and free space

```

ubuntu@ip-172-31-27-240:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        7.6G  2.0G  5.7G  26% /
tmpfs            458M   0  458M   0% /dev/shm
tmpfs            183M  868K  182M   1% /run
tmpfs            5.0M   0   5.0M   0% /run/lock
efivarfs         128K   3.6K  120K   3% /sys/firmware/efi/efivars
/dev/nvme0n1p15  105M   6.1M   99M   6% /boot/efi
tmpfs            92M   4.0K   92M   1% /run/user/1000
ubuntu@ip-172-31-27-240:~$

```

## 12. Monitor system performance (CPU, memory usage)

```

ubuntu@ip-172-31-27-240:~$ top
top - 20:04:29 up 6:54, 2 users, load average: 0.00, 0.00, 0.00
Tasks: 104 total, 1 running, 103 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.0 sy, 0.0 ni, 99.8 id, 0.0 wa, 0.0 hi, 0.0 si, 0.2 st
MiB Mem : 914.1 total, 84.8 free, 197.6 used, 631.7 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used, 559.8 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
    1 root        20   0   167512   12668    8188 S   0.0   1.4   0:02.14 systemd
    2 root        20   0        0        0        0 S   0.0   0.0   0:00.00 kthreadd
    3 root        20   0        0        0        0 S   0.0   0.0   0:00.00 pool_workqueue_release
    4 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/R-rcu_g
    5 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/R-rcu_p
    6 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/R-slub_
    7 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/R-netns
    9 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
   12 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/R-mm_pe
   13 root        20   0        0        0        0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
   14 root        20   0        0        0        0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
   15 root        20   0        0        0        0 S   0.0   0.0   0:00.06 ksoftirqd/0
   16 root        20   0        0        0        0 I   0.0   0.0   0:00.41 rcu_sched
   17 root        rt    0        0        0        0 S   0.0   0.0   0:00.12 migration/0
   18 root       -51   0        0        0        0 S   0.0   0.0   0:00.00 idle_inject/0
   19 root        20   0        0        0        0 S   0.0   0.0   0:00.00 cpuhp/0
   20 root        20   0        0        0        0 S   0.0   0.0   0:00.00 cpuhp/1
   21 root       -51   0        0        0        0 S   0.0   0.0   0:00.00 idle_inject/1
   22 root        rt    0        0        0        0 S   0.0   0.0   0:00.14 migration/1
   23 root        20   0        0        0        0 S   0.0   0.0   0:00.08 ksoftirqd/1
   25 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
   26 root        20   0        0        0        0 S   0.0   0.0   0:00.00 kdevtmpfs
   27 root         0 -20        0        0        0 I   0.0   0.0   0:00.00 kworker/R-inet_
   29 root        20   0        0        0        0 S   0.0   0.0   0:00.00 kauditd

```

## 13. Install and remove packages using a package manager



```

root@ip-172-31-27-240:~# apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/3165 kB of archives.
After this operation, 18.9 MB of additional disk space will be used.
Selecting previously unselected package git.
(Reading database ... 65142 files and directories currently installed.)
Preparing to unpack .../git_1%3a2.34.1-1ubuntu1.12_amd64.deb ...
Unpacking git (1:2.34.1-1ubuntu1.12) ...
Setting up git (1:2.34.1-1ubuntu1.12) ...
Scanning processes...
root@ip-172-31-27-240:~# apt remove git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  git-man liberror-perl
Use 'apt autoremove' to remove them.
The following packages will be REMOVED:
  git
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 18.9 MB disk space will be freed.
Do you want to continue? [Y/n]

```

#### 14. Configure and check network settings

```

root@ip-172-31-27-240:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: ens5: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 9001 qdisc mq state UP group default qlen 1000
    link/ether 06:c5:23:b2:a6:d1 brd ff:ff:ff:ff:ff:ff
    altname enp0s5
    inet 172.31.27.240/20 metric 100 brd 172.31.31.255 scope global dynamic ens5
        valid_lft 2034sec preferred_lft 2034sec
    inet6 fe80::4c5:23ff:feb2:a6d1/64 scope link
        valid_lft forever preferred_lft forever
root@ip-172-31-27-240:~#

```

#### 15. View and analyze system logs

```

root@ip-172-31-27-240:~# journalctl
Feb 23 13:09:45 ubuntu kernel: Linux version 6.8.0-1021-aws (buildd@lcy02-amd64-088) (x86_64-linux-gnu-gcc-12 (Ubuntu 12.3.0-1ubuntu1-
Feb 23 13:09:45 ubuntu kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-6.8.0-1021-aws root=PARTUUID=7e653fbc-1bf4-4ca7-905a-3ed95c2fd3f
Feb 23 13:09:45 ubuntu kernel: KERNEL supported cpus:
Feb 23 13:09:45 ubuntu kernel:   Intel GenuineIntel
Feb 23 13:09:45 ubuntu kernel:   AMD AuthenticAMD
Feb 23 13:09:45 ubuntu kernel:   Hygon HygonGenuine
Feb 23 13:09:45 ubuntu kernel:   Centaur CentaurHauls
Feb 23 13:09:45 ubuntu kernel:   Zhaoxin Shanghai
Feb 23 13:09:45 ubuntu kernel: BIOS-provided physical RAM map:
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x0000000000000000-0x0000000000009fff] usable
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x0000000000100000-0x0000000000390cfff] usable
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x0000000000390c000-0x00000000003934fff] reserved
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x00000000003934e000-0x00000000003935fff] ACPI data
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x00000000003935e000-0x0000000000393dfff] ACPI NVS
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x0000000000393de000-0x0000000000393bfff] usable
Feb 23 13:09:45 ubuntu kernel: BIOS-e820: [mem 0x0000000000393c000-0x0000000000393ffff] reserved
Feb 23 13:09:45 ubuntu kernel: NX (Execute Disable) protection: active
Feb 23 13:09:45 ubuntu kernel: APIC: Static calls initialized
Feb 23 13:09:45 ubuntu kernel: e820: update [mem 0x3728d018-0x37295e57] usable ==> usable
Feb 23 13:09:45 ubuntu kernel: e820: update [mem 0x3728d018-0x37295e57] usable ==> usable
Feb 23 13:09:45 ubuntu kernel: extended physical RAM map:
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x0000000000000000-0x0000000000009ffff] usable
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x0000000000100000-0x00000000003728d017] usable
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x00000000003728d018-0x000000000037295e57] usable
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x000000000037295e58-0x0000000000390cfff] usable
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x0000000000390c000-0x00000000003934fff] reserved
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x00000000003934e000-0x00000000003935fff] ACPI data
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x00000000003935e000-0x0000000000393dfff] ACPI NVS
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x0000000000393de000-0x0000000000393bfff] usable
Feb 23 13:09:45 ubuntu kernel: reserve setup_data: [mem 0x0000000000393c000-0x0000000000393ffff] reserved
Feb 23 13:09:45 ubuntu kernel: EFI: EFI v2.7 by EDK II

```