LAB ASSIGNMENTS 1: Linux command On EC2 instance
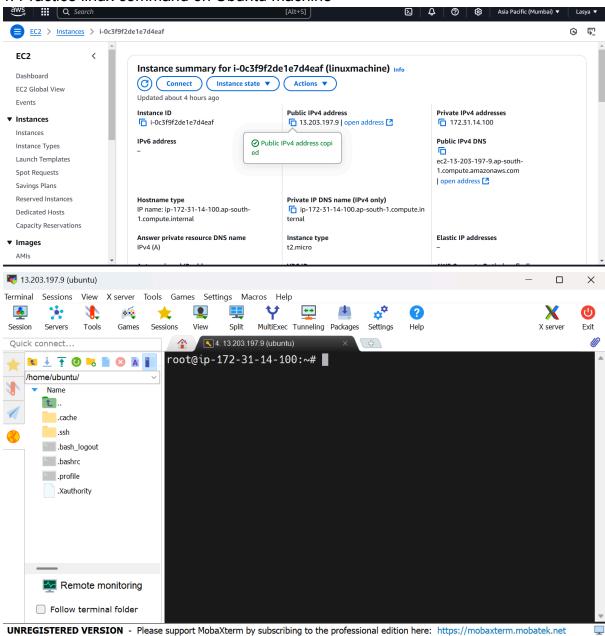
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Instruction:
1. create aws account
2. aws iam user
3. Create EC2 instance as demonstrated in the session
4. Practice linux command on Ubuntu machine

Practice all command from following categories as we discuss in the session

System and hardware informatation

- Whoami

```
root@ip-172-31-14-100:~# whoami
root
```

- Uname -a

```
root@ip-172-31-14-100:~# uname -a
Linux ip-172-31-14-100 6.8.0-1021-aws #23-Ubuntu SMP Mon Dec  9 23:5
9:34 UTC 2024 x86 64 x86 64 x86 64 GNU/Linux
```

- Uname -r

```
root@ip-172-31-14-100:~# uname -r
6.8.0-1021-aws
```

- Uptime

```
root@ip-172-31-14-100:~# uptime
 08:57:46 up  4:25,  2 users,  load average: 0.00, 0.00, 0.00
```

- Hostname

```
root@ip-172-31-14-100:~# hostname
ip-172-31-14-100
```

- Last

```
root@ip-172-31-14-100:~# last
ubuntu    pts/0         14.195.26.2      Thu Feb 20 04:43    still logg
ed in
reboot    system boot   6.8.0-1021-aws   Thu Feb 20 04:32    still runn
ing
```

- Cal

```
root@ip-172-31-14-100:~# cal
    February 2025
Su Mo Tu We Th Fr Sa
                   1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28
```

- Free

```
root@ip-172-31-14-100:~# free
                total          used          free        shared  buff/cache
    available
Mem:           980380        382444         90744           924        676160
        597936
Swap:               0             0             0
```

- Lscpu

```
root@ip-172-31-14-100:~# lscpu
Architecture:              x86_64
  CPU op-mode(s):          32-bit, 64-bit
  Address sizes:           46 bits physical, 48 bits virtual
  Byte Order:              Little Endian
CPU(s):                    1
```

- Echo

```
root@ip-172-31-14-100:~# echo "lab assignemnt"
lab assignemnt
```

- History

```
root@ip-172-31-14-100:~# history
    1  logout
    2  clear
    3  whoami
    4  uname -a
    5  uname -r
    6  uptime
```

- Id

```
root@ip-172-31-14-100:~# id
uid=0(root) gid=0(root) groups=0(root)
```

- Pwd

```
root@ip-172-31-14-100:~# pwd
/root
```

- Df

```
root@ip-172-31-14-100:~# df
Filesystem     1K-blocks      Used Available Use% Mounted on
/dev/root        7034376   2043892   4974100  30% /
tmpfs             490188         0    490188   0% /dev/shm
tmpfs             196076       912    195164   1% /run
tmpfs               5120         0      5120   0% /run/lock
/dev/xvda16       901520     77044    761348  10% /boot
/dev/xvda15       106832      6246    100586   6% /boot/efi
tmpfs              98036        12     98024   1% /run/user/1000
```

File and directory commands

- Pwd

```
root@ip-172-31-14-100:/# pwd
/
```

- Ls

```
root@ip-172-31-14-100:/# ls
bin                     lib.usr-is-merged  root                   temp
bin.usr-is-merged       lib64              run                    tmp
boot                    lost+found         sbin                   usr
dev                     media              sbin.usr-is-merged     var
etc                     mnt                snap
home                    opt                srv
lib                     proc               sys
```

- Mkdir -p

```
root@ip-172-31-14-100:/home# mkdir -p n1/n2/n3
root@ip-172-31-14-100:/home# tree
.
├── foo
├── las
├── n1
│   └── n2
│       └── n3
├── ravi
├── sre
├── sug
│   └── new.txt
└── ubuntu
```

- Ls -R

```
root@ip-172-31-14-100:/home# ls -R
.:
foo  las  n1  ravi  sre  sug  ubuntu

./foo:

./las:

./n1:
n2

./n1/n2:
n3

./n1/n2/n3:
```

- Cd .

```
root@ip-172-31-14-100:/home/n1/n2/n3# cd .
```

- Cd ..

```
root@ip-172-31-14-100:/home/n1/n2/n3# cd ..
root@ip-172-31-14-100:/home/n1/n2#
```

- Cd ../..

```
root@ip-172-31-14-100:/home/n1/n2# cd ../..
root@ip-172-31-14-100:/home#
```

- Cd ~

```
root@ip-172-31-14-100:/home/n1/n2/n3# cd ~
root@ip-172-31-14-100:~#
```

- Cd -

```
root@ip-172-31-14-100:/home/n1/n2# cd n3
root@ip-172-31-14-100:/home/n1/n2/n3# cd ~
root@ip-172-31-14-100:~# cd -
/home/n1/n2/n3
root@ip-172-31-14-100:/home/n1/n2/n3# ^[[H
```

file editing and navigation inside files

- Vim

```
root@ip-172-31-14-100:/home/n1/n2/n3# vim lasya.txt
root@ip-172-31-14-100:/home/n1/n2/n3#
```

```
4.13.203.197.9 (ubuntu)                    X
hello
this is lasya
i am doing week-1 assigment of
linux practice
a part of
Aws learing
happy to be a part od koerber supply chain private limited
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --                              7,59           All
```

- Cat

```
root@ip-172-31-14-100:/home/n1/n2/n3# vim lasya.txt
root@ip-172-31-14-100:/home/n1/n2/n3#
```

- More

```
root@ip-172-31-14-100:/home/n1/n2/n3# more lasya.txt
hello
this is lasya
i am doing week-1 assigment of
linux practice
a part of
Aws learing
happy to be a part od koerber supply chain private limited
```

- More /etc/services

```
root@ip-172-31-14-100:/home/n1/n2/n3# more /etc/services
# Network services, Internet style
#
# Updated from https://www.iana.org/assignments/service-names-port-n
umbers/service-names-port-numbers.xhtml .
#
# New ports will be added on request if they have been officially as
signed
# by IANA and used in the real-world or are needed by a debian packa
ge.
# If you need a huge list of used numbers please install the nmap pa
ckage.

tcpmux          1/tcp                              # TCP port service m
ultiplexer
echo            7/tcp
echo            7/udp
discard         9/tcp           sink null
discard         9/udp           sink null
```

- Less

```
root@ip-172-31-14-100:/home/n1/n2/n3# less lasya.txt
root@ip-172-31-14-100:/home/n1/n2/n3#
```

```
hello
this is lasya
i am doing week-1 assigment of
linux practice
a part of
Aws learing
happy to be a part od koerber supply chain private limited
lasya.txt (END)
```

- Head

```
root@ip-172-31-14-100:/home/n1/n2/n3# head lasya.txt
hello
this is lasya
i am doing week-1 assigment of
linux practice
a part of
Aws learing
happy to be a part od koerber supply chain private limited
root@ip-172-31-14-100:/home/n1/n2/n3# head -n 2 lasya.txt
hello
this is lasya
root@ip-172-31-14-100:/home/n1/n2/n3#
```

- Tail

```
root@ip-172-31-14-100:/home/n1/n2/n3# tail lasya.txt
hello
this is lasya
i am doing week-1 assigment of
linux practice
a part of
Aws learing
happy to be a part od koerber supply chain private limited
root@ip-172-31-14-100:/home/n1/n2/n3# tail -n 3 lasya.txt
a part of
Aws learing
happy to be a part od koerber supply chain private limited
root@ip-172-31-14-100:/home/n1/n2/n3#
```

- Cp folder

```
root@ip-172-31-14-100:/home# cd company
root@ip-172-31-14-100:/home/company# touch a1
root@ip-172-31-14-100:/home/company# touch a2
root@ip-172-31-14-100:/home/company# touch a3
root@ip-172-31-14-100:/home/company# tree
.
├── a1
├── a2
└── a3

1 directory, 3 files
root@ip-172-31-14-100:/home/company# cd ..
root@ip-172-31-14-100:/home# cp -r comapny /temp_company
cp: cannot stat 'comapny': No such file or directory
root@ip-172-31-14-100:/home# cp -r company /temp_company
root@ip-172-31-14-100:/home# cd temp_company
bash: cd: temp_company: No such file or directory
root@ip-172-31-14-100:/home# cd /temp_company
root@ip-172-31-14-100:/temp_company# tree
```

```
root@ip-172-31-14-100:/temp_company# tree
.
├── a1
├── a2
└── a3

1 directory, 3 files
```

- Mv file

```
root@ip-172-31-14-100:/home/n1/n2/n3# mv lasya.txt /tmp
```

```
root@ip-172-31-14-100:/home/n1/n2/n3# cd ..
root@ip-172-31-14-100:/home/n1/n2# cd ..
root@ip-172-31-14-100:/home/n1# cd ..
root@ip-172-31-14-100:/home# cd ..
root@ip-172-31-14-100:/# cd /tmp
root@ip-172-31-14-100:/tmp# ls
P7kLgxoGTI
lasya.txt
snap-private-tmp
systemd-private-a99a9bc1df814486abe3c13d61d7e8d8-ModemManager.servic
e-uAAgey
systemd-private-a99a9bc1df814486abe3c13d61d7e8d8-chrony.service-o7NT
6j
systemd-private-a99a9bc1df814486abe3c13d61d7e8d8-polkit.service-bNnk
H5
systemd-private-a99a9bc1df814486abe3c13d61d7e8d8-systemd-logind.serv
ice-p9nN3j
systemd-private-a99a9bc1df814486abe3c13d61d7e8d8-systemd-resolved.se
rvice-u5kL7d
root@ip-172-31-14-100:/tmp# cat lasya.txt
hello
this is lasya
i am doing week-1 assigment of
linux practice
a part of
Aws learing
happy to be a part od koerber supply chain private limited
root@ip-172-31-14-100:/tmp#
```

- Mv folder

```
root@ip-172-31-14-100:/home/n1# cd n2
root@ip-172-31-14-100:/home/n1/n2# cd n3
root@ip-172-31-14-100:/home/n1/n2/n3# mkdir d1
root@ip-172-31-14-100:/home/n1/n2/n3# mkdir d2
root@ip-172-31-14-100:/home/n1/n2/n3# cd d1
root@ip-172-31-14-100:/home/n1/n2/n3/d1# touch new1.txt
root@ip-172-31-14-100:/home/n1/n2/n3/d1# cd ..
root@ip-172-31-14-100:/home/n1/n2/n3# ls
copy_lasya  d1  d2
root@ip-172-31-14-100:/home/n1/n2/n3# mv d1 ./d2
root@ip-172-31-14-100:/home/n1/n2/n3# ls
copy_lasya  d2
root@ip-172-31-14-100:/home/n1/n2/n3# cd d2
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
d1
root@ip-172-31-14-100:/home/n1/n2/n3/d2#
```

- Rdmir file

```
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
d1
root@ip-172-31-14-100:/home/n1/n2/n3/d2# rm -rf d1
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
root@ip-172-31-14-100:/home/n1/n2/n3/d2# touch d2.txt
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
d2.txt
root@ip-172-31-14-100:/home/n1/n2/n3/d2# rmd2.txt
rmd2.txt: command not found
root@ip-172-31-14-100:/home/n1/n2/n3/d2# rm d2.txt
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
root@ip-172-31-14-100:/home/n1/n2/n3/d2#
```

- Rdmir folder

```
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
d1
root@ip-172-31-14-100:/home/n1/n2/n3/d2# rm -rf d1
root@ip-172-31-14-100:/home/n1/n2/n3/d2# ls
root@ip-172-31-14-100:/home/n1/n2/n3/d2#
```

Piping and i/o redirection

- head -n 5 facts.txt | tail -n 1

```
root@ip-172-31-14-100:/home/n1/n2/n3# vim lasya.txt
root@ip-172-31-14-100:/home/n1/n2/n3# cat lasya.txt
hello this is lasya
taday iam learning about linux
what are u learning about
how are u
how is placement
what is ur capstone
Project about
root@ip-172-31-14-100:/home/n1/n2/n3# head -n 4 lasya.txt | tail -n 1
how are u
root@ip-172-31-14-100:/home/n1/n2/n3#
```

- lscpu | head -n 5|tail -n 1

```
root@ip-172-31-14-100:/home/n1/n2/n3# lscpu | head -n 5|tail -n 1
CPU(s):                          1
root@ip-172-31-14-100:/home/n1/n2/n3#
```

- date > mydate.txt

```
root@ip-172-31-14-100:/home/n1/n2/n3# ls
lasya.txt
root@ip-172-31-14-100:/home/n1/n2/n3# date
Thu Feb 20 10:51:35 UTC 2025
root@ip-172-31-14-100:/home/n1/n2/n3# date > new_date.txt
root@ip-172-31-14-100:/home/n1/n2/n3# cat new_date.txt
Thu Feb 20 10:51:46 UTC 2025
root@ip-172-31-14-100:/home/n1/n2/n3# 
```

- echo "I love programming" > mydate.txt

```
root@ip-172-31-14-100:/home/n1/n2/n3# echo "new message " > new_date.txt
root@ip-172-31-14-100:/home/n1/n2/n3# cat new_date.txt
new message
root@ip-172-31-14-100:/home/n1/n2/n3# 
```

Analysis and file manipulation commands

- Diff(cp and without)

```
ubuntu@ip-172-31-14-100:~$ sudo su
root@ip-172-31-14-100:/home/ubuntu# pwd
/home/ubuntu
root@ip-172-31-14-100:/home/ubuntu# mkdir diff
root@ip-172-31-14-100:/home/ubuntu# cd diff
root@ip-172-31-14-100:/home/ubuntu/diff# vim a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# echo a.txt
a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# cat a.txt
hello this is from file a
thsi file should be copied to file b through cp and then diff
root@ip-172-31-14-100:/home/ubuntu/diff# touch d.txt
root@ip-172-31-14-100:/home/ubuntu/diff# cp a.txt b.txt
root@ip-172-31-14-100:/home/ubuntu/diff# cat b.txt
hello this is from file a
thsi file should be copied to file b through cp and then diff
root@ip-172-31-14-100:/home/ubuntu/diff# diff a.txt b.txt
root@ip-172-31-14-100:/home/ubuntu/diff# touch c.txt
root@ip-172-31-14-100:/home/ubuntu/diff# diff a.txt c.txt
1,2d0
< hello this is from file a
< thsi file should be copied to file b through cp and then diff
root@ip-172-31-14-100:/home/ubuntu/diff# 
```

- Du dir

```
root@ip-172-31-14-100:/home/ubuntu/diff# du a.txt
4       a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# cd ..
root@ip-172-31-14-100:/home/ubuntu# du diff
12      diff
root@ip-172-31-14-100:/home/ubuntu#
```

- Wd -l,Wd -w,Wd -c,Wc

```
root@ip-172-31-14-100:/home/ubuntu/diff# wc -l a.txt
2 a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# wc -w a.txt
19 a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# wc -c a.txt
88 a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# wc a.txt
 2 19 88 a.txt
root@ip-172-31-14-100:/home/ubuntu/diff#
```

- File /var

```
root@ip-172-31-14-100:/home/ubuntu/diff# file a.txt
a.txt: ASCII text
root@ip-172-31-14-100:/home/ubuntu/diff#
```

- Sort file,Sort -r

```
root@ip-172-31-14-100:/home/ubuntu/diff# vim a.txt
root@ip-172-31-14-100:/home/ubuntu/diff# cat a.txt
hello this is from file a
what is ur name
a apple tree is growing int he front of the house
i am revising linux xommand
linuc commands are so use full
thsi file should be copied to file b through cp and then diff
root@ip-172-31-14-100:/home/ubuntu/diff# sort a.txt
a apple tree is growing int he front of the house
hello this is from file a
i am revising linux xommand
linuc commands are so use full
thsi file should be copied to file b through cp and then diff
what is ur name
root@ip-172-31-14-100:/home/ubuntu/diff# sort -r a.txt
what is ur name
thsi file should be copied to file b through cp and then diff
linuc commands are so use full
i am revising linux xommand
hello this is from file a
a apple tree is growing int he front of the house
root@ip-172-31-14-100:/home/ubuntu/diff#
```

- Grep,Grep -i

```
root@ip-172-31-14-100:/home/ubuntu/diff# grep linux a.txt
i am revising linux xommand
root@ip-172-31-14-100:/home/ubuntu/diff# grep -i am a.txt
what is ur name
i am revising linux xommand
root@ip-172-31-14-100:/home/ubuntu/diff#
```

Wildcard chars

- ls -l *.txt ,ls -l a*

```
root@ip-172-31-14-100:/home/ubuntu/diff# cat c.txt
root@ip-172-31-14-100:/home/ubuntu/diff# ls -l *.txt
-rw-r--r-- 1 root root 214 Feb 24 09:55 a.txt
-rw-r--r-- 1 root root  88 Feb 24 09:48 b.txt
-rw-r--r-- 1 root root   0 Feb 24 09:49 c.txt
-rw-r--r-- 1 root root   0 Feb 24 09:48 d.txt
root@ip-172-31-14-100:/home/ubuntu/diff# ls -l a*
-rw-r--r-- 1 root root 214 Feb 24 09:55 a.txt
```

- ls -l ???,ls -l ???.txt

```
root@ip-172-31-14-100:/home/ubuntu/diff# ls -l ?
-rw-r--r-- 1 root root 214 Feb 24 09:54 1
root@ip-172-31-14-100:/home/ubuntu/diff# ls -l ?.txt
-rw-r--r-- 1 root root 214 Feb 24 09:55 a.txt
-rw-r--r-- 1 root root  88 Feb 24 09:48 b.txt
-rw-r--r-- 1 root root   0 Feb 24 09:49 c.txt
-rw-r--r-- 1 root root   0 Feb 24 09:48 d.txt
root@ip-172-31-14-100:/home/ubuntu/diff#
```

- ls -l [af]*,ls -l [!af]*.txt

```
root@ip-172-31-14-100:/home/ubuntu/diff# ls -l [ac]*
-rw-r--r-- 1 root root 214 Feb 24 09:55 a.txt
-rw-r--r-- 1 root root   0 Feb 24 09:49 c.txt
root@ip-172-31-14-100:/home/ubuntu/diff# ls -l [!ac]*
-rw-r--r-- 1 root root 214 Feb 24 09:54 1
-rw-r--r-- 1 root root  88 Feb 24 09:48 b.txt
-rw-r--r-- 1 root root   0 Feb 24 09:48 d.txt
root@ip-172-31-14-100:/home/ubuntu/diff#
```

Package management

- Apt-get update

```
root@ip-172-31-14-100:/home/ubuntu/diff# apt-get update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [8
66 kB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [1
96 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components
[151 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Package
s [1015 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-e
n [254 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Compone
nts [363 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Comp
onents [212 B]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Comp
```

- Apt-get upgrade

```
root@ip-172-31-14-100:/home/ubuntu/diff# apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  base-files bpftrace bsdextrautils bsdutils eject fdisk intel-microcode kmod
  landscape-common libaio1t64 libattr1 libblkid1 libbsd0 libcap2 libcap2-bin
  libdrm-common libdrm2 libdw1t64 libelf1t64 libfdisk1 libgmp10 libgnutls30t64
  libgpg-error-l10n libgpg-error0 libidn2-0 libkmod2 libldap-common libldap2 libmd0
  libmount1 libmpfr6 libnghttp2-14 libnl-3-200 libnl-genl-3-200 libnl-route-3-200
  libnss-systemd libpam-cap libpam-systemd libpcre2-8-0 libperl5.38t64
  libpolkit-agent-1-0 libpolkit-gobject-1-0 libpython3.12-minimal libpython3.12-stdlib
  libpython3.12t64 libselinux1 libsmartcols1 libsqlite3-0 libssl3t64 libsystemd-shared
  libsystemd0 libtasn1-6 libudev1 libunistring5 libunwind8 libuuid1 linux-tools-common
  motd-news-config mount openssl perl perl-base perl-modules-5.38 polkitd
  python-apt-common python3-apt python3-distupgrade python3.12 python3.12-minimal
  systemd systemd-dev systemd-resolved systemd-sysv ubuntu-kernel-accessories
  ubuntu-minimal ubuntu-release-upgrader-core ubuntu-server ubuntu-standard udev
  util-linux uuid-runtime xfsprogs
82 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 48.5 MB of archives.
After this operation, 1902 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

- apt-get download cmatrix

```
root@ip-172-31-14-100:/home/ubuntu/diff# apt-get install cmatrix
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  cmatrix-xfont
The following NEW packages will be installed:
  cmatrix
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 33.7 kB of archives.
After this operation, 75.8 kB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 cmatrix amd6
.0-6 [33.7 kB]
Fetched 33.7 kB in 0s (129 kB/s)
Selecting previously unselected package cmatrix.
(Reading database ... 70575 files and directories currently installed.)
Preparing to unpack .../cmatrix_2.0-6_amd64.deb ...
Unpacking cmatrix (2.0-6) ...
Setting up cmatrix (2.0-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...
```

- Cmatrix

```
root@ip-172-31-14-100:/home/ubuntu/diff# cmatrix
root@ip-172-31-14-100:/home/ubuntu/diff#
```

- removing packages: apt-get remove cmatrix

```
root@ip-172-31-14-100:/home/ubuntu/diff# apt-get remove cmatrix
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  cmatrix
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 75.8 kB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 70586 files and directories currently installed.)
Removing cmatrix (2.0-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
```

Services and Process mgt

- systemctl list-unit-files

```
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl list-unit-files
UNIT FILE                              STATE        PRESET
proc-sys-fs-binfmt_misc.automount      static       -
-.mount                                generated    -
boot-efi.mount                         generated    -
boot.mount                             generated    -
dev-hugepages.mount                    static       -
dev-mqueue.mount                       static       -
proc-sys-fs-binfmt_misc.mount          disabled     disabled
snap-amazon\x2dssm\x2dagent-9881.mount enabled      enabled
snap-core22-1722.mount                 enabled      enabled
snap-snapd-23545.mount                 enabled      enabled
sys-fs-fuse-connections.mount          static       -
sys-kernel-config.mount                static       -
sys-kernel-debug.mount                 static       -
sys-kernel-tracing.mount               static       -
acpid.path                             enabled      enabled
apport-autoreport.path                 enabled      enabled
systemd-ask-password-console.path      static       -
systemd-ask-password-plymouth.path     static       -
systemd-ask-password-wall.path         static       -
tpm-udev.path                          enabled      enabled
session-2.scope                        transient    -
acpid.service                          disabled     enabled
apparmor.service                       enabled      enabled
```

- systemctl list-unit-files | grep ssh

```
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl list-unit-files | grep ssh
ssh.service                            disabled     enabled
ssh.socket                             enabled      enabled
rescue-ssh.target                      static       -
root@ip-172-31-14-100:/home/ubuntu/diff#
```

Installed apache before

- systemctl start apache2

```
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl start apache2
```

- systemctl status apache2

```
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Mon 2025-02-24 10:12:36 UTC; 34s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 8582 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.3M (peak: 5.4M)
        CPU: 32ms
     CGroup: /system.slice/apache2.service
             ├─8582 /usr/sbin/apache2 -k start
             ├─8585 /usr/sbin/apache2 -k start
             └─8586 /usr/sbin/apache2 -k start

Feb 24 10:12:36 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:12:36 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
lines 1-15/15 (END)
```

- systemctl stop apache2

```
2.3.109.203.120 (ubuntu)                            ×      ⊕

root@ip-172-31-14-100:/home/ubuntu/diff# systemctl stop apache2
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl status apache2
○ apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: inactive (dead) since Mon 2025-02-24 10:13:52 UTC; 1s ago
   Duration: 1min 15.932s
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 8870 ExecStop=/usr/sbin/apachectl graceful-stop (code=exited, status=0/SUCCE>
   Main PID: 8582 (code=exited, status=0/SUCCESS)
        CPU: 50ms

Feb 24 10:12:36 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:12:36 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
Feb 24 10:13:52 ip-172-31-14-100 systemd[1]: Stopping apache2.service - The Apache HTTP S>
Feb 24 10:13:52 ip-172-31-14-100 systemd[1]: apache2.service: Deactivated successfully.
Feb 24 10:13:52 ip-172-31-14-100 systemd[1]: Stopped apache2.service - The Apache HTTP Se>
lines 1-14/14 (END)
```

- systemctl disable apache2,systemctl enable apache2

```
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/syst
emd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl status apache2
○ apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: inactive (dead) since Mon 2025-02-24 10:13:52 UTC; 2min 10s ago
   Duration: 1min 15.932s
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 8582 (code=exited, status=0/SUCCESS)
        CPU: 50ms

Feb 24 10:12:36 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:12:36 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
Feb 24 10:13:52 ip-172-31-14-100 systemd[1]: Stopping apache2.service - The Apache HTTP S>
Feb 24 10:13:52 ip-172-31-14-100 systemd[1]: apache2.service: Deactivated successfully.
Feb 24 10:13:52 ip-172-31-14-100 systemd[1]: Stopped apache2.service - The Apache HTTP Se>
root@ip-172-31-14-100:/home/ubuntu/diff# systemctl disable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/syst
emd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install disable apache2
Removed "/etc/systemd/system/multi-user.target.wants/apache2.service".
root@ip-172-31-14-100:/home/ubuntu/diff#
```

- service <service> start

```
root@ip-172-31-14-100:/home/ubuntu# service apache2 start
root@ip-172-31-14-100:/home/ubuntu# service apache2 status
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; disabled; preset: enabled)
     Active: active (running) since Mon 2025-02-24 10:17:37 UTC; 4s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 9264 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 9267 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.2M (peak: 5.4M)
        CPU: 20ms
     CGroup: /system.slice/apache2.service
             ├─9267 /usr/sbin/apache2 -k start
             ├─9269 /usr/sbin/apache2 -k start
             └─9270 /usr/sbin/apache2 -k start

Feb 24 10:17:37 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:17:37 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
root@ip-172-31-14-100:/home/ubuntu#
```

- service <service> stop

```
root@ip-172-31-14-100:/home/ubuntu# service apache2 stop
^[[Aroot@ip-172-31-14-100:/home/ubuntu# service apache2 status
○ apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; disabled; preset: enabled)
     Active: inactive (dead) since Mon 2025-02-24 10:18:14 UTC; 5s ago
   Duration: 37.839s
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 9264 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
    Process: 9338 ExecStop=/usr/sbin/apachectl graceful-stop (code=exited, status=0/SUCCE>
   Main PID: 9267 (code=exited, status=0/SUCCESS)
        CPU: 41ms

Feb 24 10:17:37 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:17:37 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
Feb 24 10:18:14 ip-172-31-14-100 systemd[1]: Stopping apache2.service - The Apache HTTP S>
Feb 24 10:18:14 ip-172-31-14-100 systemd[1]: apache2.service: Deactivated successfully.
Feb 24 10:18:14 ip-172-31-14-100 systemd[1]: Stopped apache2.service - The Apache HTTP Se>
lines 1-15/15 (END)
```

- service <service> restart

```
root@ip-172-31-14-100:/home/ubuntu# service apache2 stop
^[[Aroot@ip-172-31-14-100:/home/ubuntu# service apache2 status
○ apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; disabled; preset: enabled)
     Active: inactive (dead) since Mon 2025-02-24 10:18:14 UTC; 5s ago
   Duration: 37.839s
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 9264 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
    Process: 9338 ExecStop=/usr/sbin/apachectl graceful-stop (code=exited, status=0/SUCCE>
   Main PID: 9267 (code=exited, status=0/SUCCESS)
        CPU: 41ms

Feb 24 10:17:37 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:17:37 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
Feb 24 10:18:14 ip-172-31-14-100 systemd[1]: Stopping apache2.service - The Apache HTTP S>
Feb 24 10:18:14 ip-172-31-14-100 systemd[1]: apache2.service: Deactivated successfully.
Feb 24 10:18:14 ip-172-31-14-100 systemd[1]: Stopped apache2.service - The Apache HTTP Se>
lines 1-15/15 (END)
```

- service <service> reload

```
root@ip-172-31-14-100:/home/ubuntu# service apache2 reload
root@ip-172-31-14-100:/home/ubuntu# service apache2 status
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; disabled; preset: enabled)
     Active: active (running) since Mon 2025-02-24 10:18:42 UTC; 24s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 9353 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
    Process: 9425 ExecReload=/usr/sbin/apachectl graceful (code=exited, status=0/SUCCESS)
   Main PID: 9356 (apache2)
      Tasks: 55 (limit: 1130)
     Memory: 5.2M (peak: 7.0M)
        CPU: 57ms
     CGroup: /system.slice/apache2.service
             ├─9356 /usr/sbin/apache2 -k start
             ├─9429 /usr/sbin/apache2 -k start
             └─9430 /usr/sbin/apache2 -k start

Feb 24 10:18:42 ip-172-31-14-100 systemd[1]: Starting apache2.service - The Apache HTTP S>
Feb 24 10:18:42 ip-172-31-14-100 systemd[1]: Started apache2.service - The Apache HTTP Se>
Feb 24 10:19:05 ip-172-31-14-100 systemd[1]: Reloading apache2.service - The Apache HTTP >
Feb 24 10:19:05 ip-172-31-14-100 systemd[1]: Reloaded apache2.service - The Apache HTTP S>
lines 1-19/19 (END)
```

- service --status-all

```
root@ip-172-31-14-100:/home/ubuntu# service --status-all
 [ + ]  acpid
 [ + ]  apache-htcacheclean
 [ + ]  apache2
 [ + ]  apparmor
 [ + ]  apport
 [ + ]  chrony
 [ - ]  console-setup.sh
 [ + ]  cron
 [ - ]  cryptdisks
 [ - ]  cryptdisks-early
 [ + ]  dbus
 [ - ]  grub-common
 [ - ]  hibagent
 [ - ]  irqbalance
 [ - ]  iscsid
 [ - ]  keyboard-setup.sh
 [ + ]  kmod
 [ - ]  open-iscsi
 [ - ]  open-vm-tools
 [ + ]  plymouth
 [ + ]  plymouth-log
 [ + ]  procps
 [ - ]  rsync
 [ - ]  screen-cleanup
```

- Ps

```
root@ip-172-31-14-100:/home/ubuntu# ps
    PID TTY          TIME CMD
   1067 pts/1    00:00:00 sudo
   1068 pts/1    00:00:00 su
   1069 pts/1    00:00:00 bash
   9737 pts/1    00:00:00 ps
```

- Ps -e

```
root@ip-172-31-14-100:/home/ubuntu# ps -e
    PID TTY          TIME CMD
      1 ?        00:00:09 systemd
      2 ?        00:00:00 kthreadd
      3 ?        00:00:00 pool_workqueue_release
      4 ?        00:00:00 kworker/R-rcu_g
      5 ?        00:00:00 kworker/R-rcu_p
      6 ?        00:00:00 kworker/R-slub_
      7 ?        00:00:00 kworker/R-netns
      9 ?        00:00:00 kworker/0:0H-events_highpri
     11 ?        00:00:00 kworker/u30:0-events_power_efficient
     12 ?        00:00:00 kworker/R-mm_pe
     13 ?        00:00:00 rcu_tasks_rude_kthread
     14 ?        00:00:00 rcu_tasks_trace_kthread
     15 ?        00:00:00 ksoftirqd/0
     16 ?        00:00:00 rcu_sched
     17 ?        00:00:00 migration/0
     18 ?        00:00:00 idle_inject/0
     19 ?        00:00:00 cpuhp/0
```

- Ps -ef(all running full details)

```
root@ip-172-31-14-100:/home/ubuntu# ps -ef
UID          PID    PPID  C STIME TTY          TIME CMD
root           1       0  0 09:44 ?        00:00:09 /usr/lib/systemd/systemd --system --de
root           2       0  0 09:44 ?        00:00:00 [kthreadd]
root           3       2  0 09:44 ?        00:00:00 [pool_workqueue_release]
root           4       2  0 09:44 ?        00:00:00 [kworker/R-rcu_g]
root           5       2  0 09:44 ?        00:00:00 [kworker/R-rcu_p]
root           6       2  0 09:44 ?        00:00:00 [kworker/R-slub_]
root           7       2  0 09:44 ?        00:00:00 [kworker/R-netns]
root           9       2  0 09:44 ?        00:00:00 [kworker/0:0H-events_highpri]
root          11       2  0 09:44 ?        00:00:00 [kworker/u30:0-events_unbound]
root          12       2  0 09:44 ?        00:00:00 [kworker/R-mm_pe]
root          13       2  0 09:44 ?        00:00:00 [rcu_tasks_rude_kthread]
root          14       2  0 09:44 ?        00:00:00 [rcu_tasks_trace_kthread]
root          15       2  0 09:44 ?        00:00:00 [ksoftirqd/0]
root          16       2  0 09:44 ?        00:00:00 [rcu_sched]
```

- ps -ef | more

```
root@ip-172-31-14-100:/home/ubuntu# ps -ef|more
UID          PID    PPID  C STIME TTY          TIME CMD
root           1       0  0 09:44 ?        00:00:09 /usr/lib/systemd/systemd --system --de
serialize=62
root           2       0  0 09:44 ?        00:00:00 [kthreadd]
root           3       2  0 09:44 ?        00:00:00 [pool_workqueue_release]
root           4       2  0 09:44 ?        00:00:00 [kworker/R-rcu_g]
root           5       2  0 09:44 ?        00:00:00 [kworker/R-rcu_p]
root           6       2  0 09:44 ?        00:00:00 [kworker/R-slub_]
root           7       2  0 09:44 ?        00:00:00 [kworker/R-netns]
root           9       2  0 09:44 ?        00:00:00 [kworker/0:0H-events_highpri]
root          11       2  0 09:44 ?        00:00:00 [kworker/u30:0-flush-202:0]
root          12       2  0 09:44 ?        00:00:00 [kworker/R-mm_pe]
root          13       2  0 09:44 ?        00:00:00 [rcu_tasks_rude_kthread]
root          14       2  0 09:44 ?        00:00:00 [rcu_tasks_trace_kthread]
root          15       2  0 09:44 ?        00:00:00 [ksoftirqd/0]
root          16       2  0 09:44 ?        00:00:00 [rcu_sched]
root          17       2  0 09:44 ?        00:00:00 [migration/0]
root          18       2  0 09:44 ?        00:00:00 [idle_inject/0]
root          19       2  0 09:44 ?        00:00:00 [cpuhp/0]
root          20       2  0 09:44 ?        00:00:00 [kdevtmpfs]
root          21       2  0 09:44 ?        00:00:00 [kworker/R-inet_]
root          22       2  0 09:44 ?        00:00:00 [kworker/u30:1-events_power_efficient]
root          23       2  0 09:44 ?        00:00:00 [kauditd]
root          24       2  0 09:44 ?        00:00:00 [khungtaskd]
```

- ps -ef | grep -i ssh,ps -ef | grep -i apache

```
root@ip-172-31-14-100:/home/ubuntu# ps -ef | grep -i ssh
root         899       1  0 09:45 ?        00:00:00 sshd: ubuntu [priv]
ubuntu      1017     899  0 09:45 ?        00:00:00 sshd: ubuntu@pts/0
root        7653       1  0 10:05 ?        00:00:00 sshd: /usr/sbin/sshd -D -o AuthorizedK
eysCommand /usr/share/ec2-instance-connect/eic_run_authorized_keys %u %f -o AuthorizedKeys
CommandUser ec2-instance-connect [listener] 0 of 10-100 startups
root        9752    1069  0 10:26 pts/1    00:00:00 grep --color=auto -i ssh
root@ip-172-31-14-100:/home/ubuntu# ps -ef | grep -i apache2
www-data    8696       1  0 10:12 ?        00:00:00 /usr/bin/htcacheclean -d 120 -p /var/c
ache/apache2/mod_cache_disk -l 300M -n
root        9356       1  0 10:18 ?        00:00:00 /usr/sbin/apache2 -k start
www-data    9429    9356  0 10:19 ?        00:00:00 /usr/sbin/apache2 -k start
www-data    9430    9356  0 10:19 ?        00:00:00 /usr/sbin/apache2 -k start
root        9754    1069  0 10:26 pts/1    00:00:00 grep --color=auto -i apache2
root@ip-172-31-14-100:/home/ubuntu#
```

- Ps -aux

```
2. 3.109.203.120 (ubuntu)
root@ip-172-31-14-100:/home/ubuntu# ps -aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.3  1.4  22488 13952 ?        Ss   09:44   0:09 /usr/lib/systemd/system
root           2  0.0  0.0      0     0 ?        S    09:44   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        S    09:44   0:00 [pool_workqueue_release
root           4  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/R-rcu_g]
root           5  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/R-rcu_p]
root           6  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/R-slub_]
root           7  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/R-netns]
root           9  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/0:0H-events_hi
root          11  0.0  0.0      0     0 ?        I    09:44   0:00 [kworker/u30:0-events_p
root          12  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/R-mm_pe]
root          13  0.0  0.0      0     0 ?        I    09:44   0:00 [rcu_tasks_rude_kthread
root          14  0.0  0.0      0     0 ?        I    09:44   0:00 [rcu_tasks_trace_kthrea
root          15  0.0  0.0      0     0 ?        S    09:44   0:00 [ksoftirqd/0]
root          16  0.0  0.0      0     0 ?        I    09:44   0:00 [rcu_sched]
root          17  0.0  0.0      0     0 ?        S    09:44   0:00 [migration/0]
root          18  0.0  0.0      0     0 ?        S    09:44   0:00 [idle_inject/0]
root          19  0.0  0.0      0     0 ?        S    09:44   0:00 [cpuhp/0]
root          20  0.0  0.0      0     0 ?        S    09:44   0:00 [kdevtmpfs]
root          21  0.0  0.0      0     0 ?        I<   09:44   0:00 [kworker/R-inet ]
```

- Ps -u username

```
root@ip-172-31-14-100:/home/ubuntu# ps -u root
  PID TTY          TIME CMD
    1 ?        00:00:09 systemd
    2 ?        00:00:00 kthreadd
    3 ?        00:00:00 pool_workqueue_release
    4 ?        00:00:00 kworker/R-rcu_g
    5 ?        00:00:00 kworker/R-rcu_p
    6 ?        00:00:00 kworker/R-slub_
    7 ?        00:00:00 kworker/R-netns
    9 ?        00:00:00 kworker/0:0H-events_highpri
   11 ?        00:00:00 kworker/u30:0-events_power_efficient
   12 ?        00:00:00 kworker/R-mm_pe
   13 ?        00:00:00 rcu_tasks_rude_kthread
   14 ?        00:00:00 rcu_tasks_trace_kthread
   15 ?        00:00:00 ksoftirqd/0
   16 ?        00:00:00 rcu_sched
   17 ?        00:00:00 migration/0
   18 ?        00:00:00 idle_inject/0
   19 ?        00:00:00 cpuhp/0
   20 ?        00:00:00 kdevtmpfs
   21 ?        00:00:00 kworker/R-inet_
   22 ?        00:00:00 kworker/u30:1-events_unbound
   23 ?        00:00:00 kauditd
   24 ?        00:00:00 khungtaskd
   25 ?        00:00:00 oom_reaper
```

- Ps -eH(hierarical format)

```
root@ip-172-31-14-100:/home/ubuntu# ps -eH
    PID TTY          TIME CMD
      2 ?        00:00:00 kthreadd
      3 ?        00:00:00   pool_workqueue_release
      4 ?        00:00:00   kworker/R-rcu_g
      5 ?        00:00:00   kworker/R-rcu_p
      6 ?        00:00:00   kworker/R-slub_
      7 ?        00:00:00   kworker/R-netns
      9 ?        00:00:00   kworker/0:0H-events_highpri
     11 ?        00:00:00   kworker/u30:0-events_power_efficient
     12 ?        00:00:00   kworker/R-mm_pe
     13 ?        00:00:00   rcu_tasks_rude_kthread
     14 ?        00:00:00   rcu_tasks_trace_kthread
     15 ?        00:00:00   ksoftirqd/0
     16 ?        00:00:00   rcu_sched
     17 ?        00:00:00   migration/0
     18 ?        00:00:00   idle_inject/0
     19 ?        00:00:00   cpuhp/0
     20 ?        00:00:00   kdevtmpfs
     21 ?        00:00:00   kworker/R-inet_
     22 ?        00:00:00   kworker/u30:1-events_power_efficient
     23 ?        00:00:00   kauditd
```

- kill -l

```
root@ip-172-31-14-100:/home/ubuntu# kill -l
 1) SIGHUP       2) SIGINT       3) SIGQUIT      4) SIGILL       5) SIGTRAP
 6) SIGABRT      7) SIGBUS       8) SIGFPE       9) SIGKILL     10) SIGUSR1
11) SIGSEGV     12) SIGUSR2     13) SIGPIPE     14) SIGALRM     15) SIGTERM
16) SIGSTKFLT   17) SIGCHLD     18) SIGCONT     19) SIGSTOP     20) SIGTSTP
21) SIGTTIN     22) SIGTTOU     23) SIGURG      24) SIGXCPU     25) SIGXFSZ
26) SIGVTALRM   27) SIGPROF     28) SIGWINCH    29) SIGIO       30) SIGPWR
31) SIGSYS      34) SIGRTMIN    35) SIGRTMIN+1  36) SIGRTMIN+2  37) SIGRTMIN+3
38) SIGRTMIN+4  39) SIGRTMIN+5  40) SIGRTMIN+6  41) SIGRTMIN+7  42) SIGRTMIN+8
43) SIGRTMIN+9  44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9  56) SIGRTMAX-8  57) SIGRTMAX-7
58) SIGRTMAX-6  59) SIGRTMAX-5  60) SIGRTMAX-4  61) SIGRTMAX-3  62) SIGRTMAX-2
63) SIGRTMAX-1  64) SIGRTMAX
root@ip-172-31-14-100:/home/ubuntu#
```

- sleep 100 &
  kill -2 pid
- kill -1 pid
- kill -2 pid
- kill -9 pid
- kill -15 pid

```
root@ip-172-31-14-100:/home/ubuntu# sleep 100 &
[1] 9784
root@ip-172-31-14-100:/home/ubuntu# kill -1 9784
root@ip-172-31-14-100:/home/ubuntu# kill -2 9784
bash: kill: (9784) - No such process
[1]+  Hangup                  sleep 100
root@ip-172-31-14-100:/home/ubuntu# kill -15 9784
bash: kill: (9784) - No such process
root@ip-172-31-14-100:/home/ubuntu# kill -9 9784
bash: kill: (9784) - No such process
root@ip-172-31-14-100:/home/ubuntu# sleep 100 &
[1] 9785
root@ip-172-31-14-100:/home/ubuntu# kill -9 9785
root@ip-172-31-14-100:/home/ubuntu# kill -15 9784
bash: kill: (9784) - No such process
[1]+  Killed                  sleep 100
root@ip-172-31-14-100:/home/ubuntu# kill -15 9785
bash: kill: (9785) - No such process
root@ip-172-31-14-100:/home/ubuntu# sleep 100 &
[1] 9786
root@ip-172-31-14-100:/home/ubuntu# kill -15 9786
root@ip-172-31-14-100:/home/ubuntu#
```

User informatation and mgt

- cat /etc/passwd

```
root@ip-172-31-14-100:/home/ubuntu# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
apt:x:42:65534::/nonexistent:/usr/sbin/nologin
```

- Id user

```
root@ip-172-31-14-100:/home/ubuntu# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
apt:x:42:65534::/nonexistent:/usr/sbin/nologin
```

file permission

Creating two user p1and p2

- useradd -m -s /bin/bash

```
root@ip-172-31-14-100:/home/ubuntu# useradd -m -s /bin/bash p1
root@ip-172-31-14-100:/home/ubuntu# useradd -m -s /bin/bash p2
root@ip-172-31-14-100:/home/ubuntu#
```

- Passwd <user>

```
root@ip-172-31-14-100:/home/ubuntu# passwd p1
New password:
Retype new password:
passwd: password updated successfully
root@ip-172-31-14-100:/home/ubuntu# passwd p2
New password:
Retype new password:
passwd: password updated successfully
root@ip-172-31-14-100:/home/ubuntu#
```

- cat /etc/passwd

```
ravi:x:1004:1004::/home/ravi:/bin/bash
foo:x:1005:1005::/home/foo:/bin/bash
p1:x:1006:1008::/home/p1:/bin/bash
p2:x:1007:1009::/home/p2:/bin/bash
root@ip-172-31-14-100:/home/ubuntu#
```

- Groupadd

```
root@ip-172-31-14-100:/home/ubuntu# groupadd g1
root@ip-172-31-14-100:/home/ubuntu# groupadd g2
root@ip-172-31-14-100:/home/ubuntu#
```

- usermod -aG <group> <name>

```
root@ip-172-31-14-100:/home/ubuntu# usermod -aG g1 p1
root@ip-172-31-14-100:/home/ubuntu# usermod -aG g2 p2
root@ip-172-31-14-100:/home/ubuntu#
```

- id user

```
root@ip-172-31-14-100:/home/ubuntu# id p1
uid=1006(p1) gid=1008(p1) groups=1008(p1),1010(g1)
root@ip-172-31-14-100:/home/ubuntu# id p2
uid=1007(p2) gid=1009(p2) groups=1009(p2),1011(g2)
root@ip-172-31-14-100:/home/ubuntu#
```

- su - p1

```
root@ip-172-31-14-100:/home/ubuntu# id p1
uid=1006(p1) gid=1008(p1) groups=1008(p1),1010(g1)
root@ip-172-31-14-100:/home/ubuntu# id p2
uid=1007(p2) gid=1009(p2) groups=1009(p2),1011(g2)
root@ip-172-31-14-100:/home/ubuntu#
```

- echo "some demo stuff by gun">> demo.txt

```
p2@ip-172-31-14-100:/home/ubuntu$ su p1
Password:
p1@ip-172-31-14-100:/home/ubuntu$ mkdir p1_folder
mkdir: cannot create directory 'p1_folder': Permission denied
p1@ip-172-31-14-100:/home/ubuntu$ cd ~
p1@ip-172-31-14-100:~$ mkdir p1_folder
p1@ip-172-31-14-100:~$ cd p1_floder
bash: cd: p1_floder: No such file or directory
p1@ip-172-31-14-100:~$ cd p1_folder
p1@ip-172-31-14-100:~/p1_folder$ echo "added by p1">> p1.txt\
>
p1@ip-172-31-14-100:~/p1_folder$ cat p1.txt
added by p1
p1@ip-172-31-14-100:~/p1_folder$
```

- ls -l p1.txt

```
p1@ip-172-31-14-100:~/p1_folder$ ls -l p1.txt
-rw-rw-r-- 1 p1 p1 12 Feb 24 10:42 p1.txt
p1@ip-172-31-14-100:~/p1_folder$
```

- chmod o+w demo.txt

```
p1@ip-172-31-14-100:~/p1_folder$ chmod o+w p1.txt
p1@ip-172-31-14-100:~/p1_folder$ su p2
Password:
p2@ip-172-31-14-100:/home/p1/p1_folder$ cat p1.txt
added by p1
p2@ip-172-31-14-100:/home/p1/p1_folder$
```