1. Install docker on EC2 :

    Sudo apt install docker.io

```
ubuntu@ip-172-31-43-14:~$ sudo apt install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 71 not upgraded.
Need to get 69.7 MB of archives.
After this operation, 267 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.7-0ubuntu1~22.0
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.2-0ubuntu
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 dns-root-data all 2021011101 [5256 B]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.86-1.1ubu
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.5-0ub
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 69.7 MB in 2s (43.4 MB/s)
Preconfiguring packages ...
```

Docker --version

```
Unpacking containerd (1.7.2-0ubuntu1~22.04.1) ...
Selecting previously unselected package dns-root-data.
Preparing to unpack .../4-dns-root-data_2021011101_all.deb ...
Unpacking dns-root-data (2021011101) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../5-dnsmasq-base_2.86-1.1ubuntu0.3_amd64.deb ...
Unpacking dnsmasq-base (2.86-1.1ubuntu0.3) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io_24.0.5-0ubuntu1~22.04.1_amd64.deb ...
Unpacking docker.io (24.0.5-0ubuntu1~22.04.1) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../7-ubuntu-fan_0.12.16_all.deb ...
Unpacking ubuntu-fan (0.12.16) ...
Setting up dnsmasq-base (2.86-1.1ubuntu0.3) ...
Setting up runc (1.1.7-0ubuntu1~22.04.1) ...
Setting up dns-root-data (2021011101) ...
Setting up bridge-utils (1.7-1ubuntu3) ...
Setting up pigz (2.6-1) ...
Setting up containerd (1.7.2-0ubuntu1~22.04.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.
Setting up ubuntu-fan (0.12.16) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Setting up docker.io (24.0.5-0ubuntu1~22.04.1) ...
Adding group `docker' (GID 122) ...
Done.
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for dbus (1.12.20-2ubuntu4.1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-43-14:~$ docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
ubuntu@ip-172-31-43-14:~$
```

2. explore the docker commands (docker images, containers)

1. docker pull :

```
ubuntu@ip-172-31-43-14:~$ docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
1f7ce2fa46ab: Pull complete
424de2a10000: Pull complete
6d9a0131505f: Pull complete
5728e491734b: Pull complete
20d3235e84ad: Pull complete
Digest: sha256:04551bc91cc03314eaab20d23609339aebe2ae694fc2e337d0afad429ec22c5a
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
ubuntu@ip-172-31-43-14:~$
```

2. docker images:

```
ubuntu@ip-172-31-43-14:~$ docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
1f7ce2fa46ab: Pull complete
424de2a10000: Pull complete
6d9a0131505f: Pull complete
5728e491734b: Pull complete
20d3235e84ad: Pull complete
Digest: sha256:04551bc91cc03314eaab20d23609339aebe2ae694fc2e337d0afad429ec22c5a
Status: Downloaded newer image for httpd:latest
docker.io/library/httpd:latest
ubuntu@ip-172-31-43-14:~$ docker images
REPOSITORY      TAG          IMAGE ID          CREATED        SIZE
httpd           latest       a6ca7b52a415      11 days ago    168MB
ubuntu@ip-172-31-43-14:~$
```

3. docker run :

```
httpd          latest      a6ca7b52a415      11 days ago    168MB
ubuntu@ip-172-31-43-14:~$ docker run -itd --name devops httpd
b8f10a1ffae5e0a609507a121e71e993a128a304ee31065293eb416dd552f454
ubuntu@ip-172-31-43-14:~$
```

4. docker ps

```
ubuntu@ip-172-31-43-14:~$ docker ps
CONTAINER ID    IMAGE     COMMAND             CREATED        STATUS              PORTS     NAMES
b8f10a1ffae5    httpd     "httpd-foreground"  2 minutes ago  Up About a minute   80/tcp    devops
```

5. docker ps -a

```
ubuntu@ip-172-31-43-14:~$ docker ps -a
CONTAINER ID    IMAGE         COMMAND             CREATED         STATUS                   PORTS     NAMES
7634e1061f33    hello-world   "/hello"            46 seconds ago  Exited (0) 45 seconds ago          elegant_kirch
b8f10a1ffae5    httpd         "httpd-foreground"  2 minutes ago   Up 2 minutes             80/tcp    devops
ubuntu@ip-172-31-43-14:~$
```

6. docker stop :

```
ubuntu@ip-172-31-43-14:~$ docker ps -a
CONTAINER ID   IMAGE         COMMAND              CREATED         STATUS                    PORTS      NAMES
7634e1061f33   hello-world   "/hello"             4 minutes ago   Exited (0) 4 minutes ago             elegant_kirch
b8f10a1ffae5   httpd         "httpd-foreground"   6 minutes ago   Up 6 minutes              80/tcp     devops
ubuntu@ip-172-31-43-14:~$ docker stop 7634e1061f33
7634e1061f33
ubuntu@ip-172-31-43-14:~$ docker stop b8f10a1ffae5
b8f10a1ffae5
ubuntu@ip-172-31-43-14:~$ docker ps -a
CONTAINER ID   IMAGE         COMMAND              CREATED         STATUS                    PORTS      NAMES
7634e1061f33   hello-world   "/hello"             7 minutes ago   Exited (0) 7 minutes ago             elegant_kirch
b8f10a1ffae5   httpd         "httpd-foreground"   9 minutes ago   Exited (0) 2 minutes ago             devops
ubuntu@ip-172-31-43-14:~$
```

7. docker start:

```
ubuntu@ip-172-31-43-14:~$ docker ps -a
CONTAINER ID   IMAGE         COMMAND              CREATED          STATUS                     PORTS      NAMES
7634e1061f33   hello-world   "/hello"             7 minutes ago    Exited (0) 7 minutes ago              elegant_kirch
b8f10a1ffae5   httpd         "httpd-foreground"   9 minutes ago    Exited (0) 2 minutes ago              devops
ubuntu@ip-172-31-43-14:~$ docker start 7634e1061f33
7634e1061f33
ubuntu@ip-172-31-43-14:~$ docker start b8f10a1ffae5
b8f10a1ffae5
ubuntu@ip-172-31-43-14:~$ docker ps -a
CONTAINER ID   IMAGE         COMMAND              CREATED          STATUS                      PORTS      NAMES
7634e1061f33   hello-world   "/hello"             9 minutes ago    Exited (0) 14 seconds ago              elegant_kirch
b8f10a1ffae5   httpd         "httpd-foreground"   10 minutes ago   Up 4 seconds                80/tcp     devops
ubuntu@ip-172-31-43-14:~$
```

8. docker rm:

```
ubuntu@ip-172-31-43-14:~$ docker ps -a
CONTAINER ID   IMAGE         COMMAND              CREATED          STATUS                      PORTS      NAMES
7634e1061f33   hello-world   "/hello"             9 minutes ago    Exited (0) 14 seconds ago              elegant_kirch
b8f10a1ffae5   httpd         "httpd-foreground"   10 minutes ago   Up 4 seconds                80/tcp     devops
ubuntu@ip-172-31-43-14:~$ docker stop b8f10a1ffae5
b8f10a1ffae5
ubuntu@ip-172-31-43-14:~$ docker stop 7634e1061f33
7634e1061f33
ubuntu@ip-172-31-43-14:~$ docker rm b8f10a1ffae5
b8f10a1ffae5
ubuntu@ip-172-31-43-14:~$ docker rm 7634e1061f33
7634e1061f33
ubuntu@ip-172-31-43-14:~$
```

9. docker rmi :

```
ubuntu@ip-172-31-43-14:~$ docker images
REPOSITORY     TAG       IMAGE ID       CREATED        SIZE
httpd          latest    a6ca7b52a415   11 days ago    168MB
hello-world    latest    9c7a54a9a43c   7 months ago   13.3kB
ubuntu@ip-172-31-43-14:~$ docker rmi a6ca7b52a415
Untagged: httpd:latest
Untagged: httpd@sha256:04551bc91cc03314eaab20d23609339aebe2ae694fc2e337d0afad429ec22c5a
Deleted: sha256:a6ca7b52a41549f13f7de6aeac4ab6ffebd41585fbf2273f00fd6e82bb721949
Deleted: sha256:cdfabdae5172d05eb5141bb77aaa300a195570b0befd780b6e2fc7bd20ea2cd5
Deleted: sha256:16d494768121f45ba050ad50a669400818478131cb930bb0c8b5d2f908057142
Deleted: sha256:29b181ca372e770053cc03410789236d7a96171f1f77110741d0f3f068a29c67
Deleted: sha256:e8254408730a345e2ccf863e19c850e7ee78b59dfd9e4aa265b0107dd4301be5
Deleted: sha256:92770f546e065c4942829b1f0d7d1f02c2eb1e6acf0d1bc08ef0bf6be4972839
ubuntu@ip-172-31-43-14:~$ docker rmi 9c7a54a9a43c
Untagged: hello-world:latest
Untagged: hello-world@sha256:c79d06dfdfd3d3eb04cafd0dc2bacab0992ebc243e083cabe208bac4dd7759e0
Deleted: sha256:9c7a54a9a43cca047013b82af109fe963fde787f63f9e016fdc3384500c2823d
Deleted: sha256:01bb4fce3eb1b56b05adf99504dafd31907a5aadac736e36b27595c8b92f07f1
ubuntu@ip-172-31-43-14:~$ docker images
REPOSITORY     TAG       IMAGE ID     CREATED      SIZE
ubuntu@ip-172-31-43-14:~$
```