**Task Description:**

Install docker on EC2 and explore the docker commands (docker images, containers, volumes, network)

Installed:

container-selinux-3:2.233.0-1.amzn2023.noarch containerd-2.0.5-1.amzn2023.0.2.x86\_64 docker-25.0.8-1.amzn2023.0.5.x86\_64 iptables-libs-1.8.8-3.amzn2023.0.2.x86\_64

iptables-nft-1.8.8-3.amzn2023.0.2.x86\_64 libcgroup-3.0-1.amzn2023.0.1.x86\_64 libnetfilter\_conntrack-1.0.8-2.amzn2023.0.2.x86\_64 libnfnetlink-1.0.1-19.amzn2023.0.2.x86\_64

libnftnl-1.2.2-2.amzn2023.0.2.x86\_64 pigz-2.5-1.amzn2023.0.3.x86\_64 runc-1.2.6-1.amzn2023.0.1.x86\_64

Complete!

[root@ip-172-31-1-161 ec2-user]# docker version

Client:

Version: 25.0.8

API version: 1.44

Go version: go1.24.4

Git commit: 0bab007

Built: Wed Jun 18 00:00:00 2025

OS/Arch: linux/amd64

Context: default

Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon running?

[root@ip-172-31-1-161 ec2-user]# systemctl enable docker

Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.

[root@ip-172-31-1-161 ec2-user]# systemctl start docker

[root@ip-172-31-1-161 ec2-user]# systemctl status docker

● docker.service - Docker Application Container Engine

Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; preset: disabled)

Active: active (running) since Thu 2025-08-28 17:13:26 UTC; 5s ago

TriggeredBy: ● docker.socket

Docs: https://docs.docker.com

Process: 27457 ExecStartPre=/bin/mkdir -p /run/docker (code=exited, status=0/SUCCESS)

Process: 27458 ExecStartPre=/usr/libexec/docker/docker-setup-runtimes.sh (code=exited, status=0/SUCCESS)

Main PID: 27459 (dockerd)

Tasks: 9

Memory: 30.5M

CPU: 335ms

CGroup: /system.slice/docker.service

└─27459 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock --default-ulimit nofile=32768:65536

Aug 28 17:13:25 ip-172-31-1-161.ap-south-1.compute.internal systemd[1]: Starting docker.service - Docker Application Container Engine...

Aug 28 17:13:25 ip-172-31-1-161.ap-south-1.compute.internal dockerd[27459]: time="2025-08-28T17:13:25.912571463Z" level=info msg="Starting up"

Aug 28 17:13:25 ip-172-31-1-161.ap-south-1.compute.internal dockerd[27459]: time="2025-08-28T17:13:25.975121765Z" level=info msg="Loading containers: start."

Aug 28 17:13:26 ip-172-31-1-161.ap-south-1.compute.internal dockerd[27459]: time="2025-08-28T17:13:26.437467237Z" level=info msg="Loading containers: done."

Aug 28 17:13:26 ip-172-31-1-161.ap-south-1.compute.internal dockerd[27459]: time="2025-08-28T17:13:26.454986731Z" level=info msg="Docker daemon" commit=71907ca containerd-snapshotter=fal>

Aug 28 17:13:26 ip-172-31-1-161.ap-south-1.compute.internal dockerd[27459]: time="2025-08-28T17:13:26.455120735Z" level=info msg="Daemon has completed initialization"

Aug 28 17:13:26 ip-172-31-1-161.ap-south-1.compute.internal dockerd[27459]: time="2025-08-28T17:13:26.495553248Z" level=info msg="API listen on /run/docker.sock"

Aug 28 17:13:26 ip-172-31-1-161.ap-south-1.compute.internal systemd[1]: Started docker.service - Docker Application Container Engine.

[root@ip-172-31-1-161 ec2-user]# ^C

[root@ip-172-31-1-161 ec2-user]# ^C

[root@ip-172-31-1-161 ec2-user]# docker pull nginx

Using default tag: latest

latest: Pulling from library/nginx

b1badc6e5066: Pull complete

a2da0c0f2353: Pull complete

e5d9bb0b85cc: Pull complete

14a859b5ba24: Pull complete

716cdf61af59: Pull complete

14e422fd20a0: Pull complete

c3741b707ce6: Pull complete

Digest: sha256:33e0bbc7ca9ecf108140af6288c7c9d1ecc77548cbfd3952fd8466a75edefe57

Status: Downloaded newer image for nginx:latest

docker.io/library/nginx:latest

[root@ip-172-31-1-161 ec2-user]# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest ad5708199ec7 2 weeks ago 192MB

[root@ip-172-31-1-161 ec2-user]# docker run -it nginx:latest

/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration

/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/

/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh

10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf

10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf

/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh

/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh

/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh

/docker-entrypoint.sh: Configuration complete; ready for start up

2025/08/28 17:14:28 [notice] 1#1: using the "epoll" event method

2025/08/28 17:14:28 [notice] 1#1: nginx/1.29.1

2025/08/28 17:14:28 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14+deb12u1)

2025/08/28 17:14:28 [notice] 1#1: OS: Linux 6.1.147-172.266.amzn2023.x86\_64

2025/08/28 17:14:28 [notice] 1#1: getrlimit(RLIMIT\_NOFILE): 32768:65536

2025/08/28 17:14:28 [notice] 1#1: start worker processes

2025/08/28 17:14:28 [notice] 1#1: start worker process 29

2025/08/28 17:14:28 [notice] 1#1: start worker process 30

^C2025/08/28 17:16:29 [notice] 29#29: signal 2 (SIGINT) received, exiting

2025/08/28 17:16:29 [notice] 1#1: signal 2 (SIGINT) received, exiting

2025/08/28 17:16:29 [notice] 29#29: exiting

2025/08/28 17:16:29 [notice] 30#30: signal 2 (SIGINT) received, exiting

2025/08/28 17:16:29 [notice] 30#30: exiting

2025/08/28 17:16:29 [notice] 29#29: exit

2025/08/28 17:16:29 [notice] 30#30: exit

2025/08/28 17:16:29 [notice] 1#1: signal 14 (SIGALRM) received

2025/08/28 17:16:29 [notice] 1#1: signal 17 (SIGCHLD) received from 30

2025/08/28 17:16:29 [notice] 1#1: worker process 30 exited with code 0

2025/08/28 17:16:29 [notice] 1#1: signal 29 (SIGIO) received

2025/08/28 17:16:29 [notice] 1#1: signal 17 (SIGCHLD) received from 29

2025/08/28 17:16:29 [notice] 1#1: worker process 29 exited with code 0

2025/08/28 17:16:29 [notice] 1#1: exit

[root@ip-172-31-1-161 ec2-user]# docker ps

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

[root@ip-172-31-1-161 ec2-user]# docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

a708a26c9029 nginx:latest "/docker-entrypoint.…" 2 minutes ago Exited (0) 11 seconds ago friendly\_swartz

[root@ip-172-31-1-161 ec2-user]# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest ad5708199ec7 2 weeks ago 192MB

[root@ip-172-31-1-161 ec2-user]# docker volume create test

test

[root@ip-172-31-1-161 ec2-user]# docker run -d -v test:use/share/nginx/html nginx

docker: Error response from daemon: invalid volume specification: 'test:use/share/nginx/html': invalid mount config for type "volume": invalid mount path: 'use/share/nginx/html' mount path must be absolute.

See 'docker run --help'.

[root@ip-172-31-1-161 ec2-user]# docker run -d -v test:usr/share/nginx/html nginx

docker: Error response from daemon: invalid volume specification: 'test:usr/share/nginx/html': invalid mount config for type "volume": invalid mount path: 'usr/share/nginx/html' mount path must be absolute.

See 'docker run --help'.

[root@ip-172-31-1-161 ec2-user]# docker run -d -v test:/usr/share/nginx/html nginx

7d3b63ee4a4cf1939d27c7147ca41a501d08cb9763e681e391a0585682907a97

[root@ip-172-31-1-161 ec2-user]# docker volume ls

DRIVER VOLUME NAME

local test

[root@ip-172-31-1-161 ec2-user]# docker volume inspect test

[

{

"CreatedAt": "2025-08-28T17:17:21Z",

"Driver": "local",

"Labels": null,

"Mountpoint": "/var/lib/docker/volumes/test/\_data",

"Name": "test",

"Options": null,

"Scope": "local"

}

]

[root@ip-172-31-1-161 ec2-user]# docker network ls

NETWORK ID NAME DRIVER SCOPE

5e84f8131824 bridge bridge local

ae359d0fd5be host host local

98b006ba43cd none null local

[root@ip-172-31-1-161 ec2-user]# docker network create testnet

4e52c2504f726adee43dd0411c67e1e396d349d5be2e216fb2b3e05c6e014aad

[root@ip-172-31-1-161 ec2-user]# docker run -d --name web --network=testnet nginx

493e237499a551d2f81c53f31425bd575bd15fc8a641922bbe9bcb2628bd3f39

[root@ip-172-31-1-161 ec2-user]# docker network inspect testnet

[

{

"Name": "testnet",

"Id": "4e52c2504f726adee43dd0411c67e1e396d349d5be2e216fb2b3e05c6e014aad",

"Created": "2025-08-28T17:19:29.556261339Z",

"Scope": "local",

"Driver": "bridge",

"EnableIPv6": false,

"IPAM": {

"Driver": "default",

"Options": {},

"Config": [

{

"Subnet": "172.18.0.0/16",

"Gateway": "172.18.0.1"

}

]

},

"Internal": false,

"Attachable": false,

"Ingress": false,

"ConfigFrom": {

"Network": ""

},

"ConfigOnly": false,

"Containers": {

"493e237499a551d2f81c53f31425bd575bd15fc8a641922bbe9bcb2628bd3f39": {

"Name": "web",

"EndpointID": "6863a9d5aaab667f6974bbf87a46923acda7452f937be78ffa07bad1244d95c9",

"MacAddress": "02:42:ac:12:00:02",

"IPv4Address": "172.18.0.2/16",

"IPv6Address": ""

}

},

"Options": {},

"Labels": {}

}

]

[root@ip-172-31-1-161 ec2-user]# ^C

[root@ip-172-31-1-161 ec2-user]# docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

493e237499a5 nginx "/docker-entrypoint.…" 2 minutes ago Exited (0) 17 seconds ago web

7d3b63ee4a4c nginx "/docker-entrypoint.…" 5 minutes ago Up 5 minutes 80/tcp amazing\_booth

a708a26c9029 nginx:latest "/docker-entrypoint.…" 9 minutes ago Exited (0) 7 minutes ago friendly\_swartz

[root@ip-172-31-1-161 ec2-user]# docker rmi 493e237499a5

Error response from daemon: No such image: 493e237499a5:latest

[root@ip-172-31-1-161 ec2-user]# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest ad5708199ec7 2 weeks ago 192MB

[root@ip-172-31-1-161 ec2-user]# docker rmi ad5708199ec7

Error response from daemon: conflict: unable to delete ad5708199ec7 (cannot be forced) - image is being used by running container 7d3b63ee4a4c

[root@ip-172-31-1-161 ec2-user]# docker stop $(docker ps -q)

7d3b63ee4a4c

[root@ip-172-31-1-161 ec2-user]# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest ad5708199ec7 2 weeks ago 192MB

[root@ip-172-31-1-161 ec2-user]# docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

493e237499a5 nginx "/docker-entrypoint.…" 4 minutes ago Exited (0) 2 minutes ago web

7d3b63ee4a4c nginx "/docker-entrypoint.…" 7 minutes ago Exited (0) 20 seconds ago amazing\_booth

a708a26c9029 nginx:latest "/docker-entrypoint.…" 11 minutes ago Exited (0) 9 minutes ago friendly\_swartz

[root@ip-172-31-1-161 ec2-user]# docker rm $(docker ps -aq)

493e237499a5

7d3b63ee4a4c

a708a26c9029

[root@ip-172-31-1-161 ec2-user]# docker ps -a

CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES

[root@ip-172-31-1-161 ec2-user]# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

nginx latest ad5708199ec7 2 weeks ago 192MB

[root@ip-172-31-1-161 ec2-user]# docker rmi ad5708199ec7

Untagged: nginx:latest

Untagged: nginx@sha256:33e0bbc7ca9ecf108140af6288c7c9d1ecc77548cbfd3952fd8466a75edefe57

Deleted: sha256:ad5708199ec7d169c6837fe46e1646603d0f7d0a0f54d3cd8d07bc1c818d0224

Deleted: sha256:1afc33e48e9f9aa9fb610287b45b79dfab1d017eac5e2a2b4278c7ebd4dc1604

Deleted: sha256:8fd30f3584c9566285c852bf3151e0309103a2cb2c69679c957085b4ca04c1bf

Deleted: sha256:19a317257fb733cff18880fe412a5c32666fa187d7b2f92c090b13cb957eeda8

Deleted: sha256:06f0c4757d2fb96eecfd5df0224138aba5fc8252ca7a708dbc10a729d450f4b5

Deleted: sha256:1d08407755c0243da3cc5e43f0673151a5b2b9de69d2a2036b63aa94be148c6b

Deleted: sha256:09b094432908a8fa361f38c2863929533e0819033757c14f015c31c5f620d9e5

Deleted: sha256:eb5f13bce9936c760b9fa73aeb1b608787daa36106cc888104132e353ed37252

[root@ip-172-31-1-161 ec2-user]# docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

[root@ip-172-31-1-161 ec2-user]# docker volume prune

WARNING! This will remove anonymous local volumes not used by at least one container.

Are you sure you want to continue? [y/N] y

Total reclaimed space: 0B

[root@ip-172-31-1-161 ec2-user]# docker network prune

WARNING! This will remove all custom networks not used by at least one container.

Are you sure you want to continue? [y/N] y

Deleted Networks:

testnet

[root@ip-172-31-1-161 ec2-user]#