

Docker Task

Task Description:

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

Tech needs to be used :

-  AWS EC2
-  Docker

Install docker on EC2

Instances (1/1) Info

Last updated less than a minute ago

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

< 1 >

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
<input checked="" type="checkbox"/>	Sathya-Docker	i-01a0068d7e274f366	Running	t2.micro	2/2 checks passed	View alarms +	ap-southeast-1a	ec2-10-0-10-10

- sudo yum install docker
- sudo systemctl enable docker
- sudo systemctl start docker

```
[ec2-user@ip-172-31-31-52 ~]$ [ec2-user@ip-172-31-31-52 ~]$ sudo systemctl status docker
o docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; preset: disabled)
   Active: inactive (dead)
   TriggeredBy: o docker.socket
   Docs: https://docs.docker.com
[ec2-user@ip-172-31-31-52 ~]$ sudo systemctl enable docker
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.
[ec2-user@ip-172-31-31-52 ~]$ sudo systemctl start docker
[ec2-user@ip-172-31-31-52 ~]$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; preset: disabled)
   Active: active (running) since Mon 2024-11-25 07:22:31 UTC; 3s ago
   TriggeredBy: ● docker.socket
   Docs: https://docs.docker.com
   Process: 4160 ExecStartPre=/bin/mkdir -p /run/docker (code=exited, status=0/SUCCESS)
   Process: 4165 ExecStartPre=/usr/libexec/docker/docker-setup-runtimes.sh (code=exited, status=0/SUCCESS)
   Main PID: 4166 (dockerd)
   Tasks: 19
   Memory: 33.1M
   CPU: 363ms
   CGroup: /system.slice/docker.service
           └─4166 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock --default-ulimit nofile=32768:65536

Nov 25 07:22:30 ip-172-31-31-52.ap-southeast-1.compute.internal systemd[1]: Starting docker.service - Docker Application Co
Nov 25 07:22:30 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:30.281341142Z" level=
Nov 25 07:22:30 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:30.392700177Z" level=
Nov 25 07:22:30 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:30.528708264Z" level=
Nov 25 07:22:31 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:31.147548571Z" level=
Nov 25 07:22:31 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:31.228230560Z" level=
Nov 25 07:22:31 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:31.252677591Z" level=
Nov 25 07:22:31 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:31.252926994Z" level=
Nov 25 07:22:31 ip-172-31-31-52.ap-southeast-1.compute.internal dockerd[4166]: time="2024-11-25T07:22:31.281627527Z" level=
Nov 25 07:22:31 ip-172-31-31-52.ap-southeast-1.compute.internal systemd[1]: Started docker.service - Docker Application Co
lines 1-24/24 (END)
```

- `sudo docker --version`

```
[ec2-user@ip-172-31-31-52 ~]$ [ec2-user@ip-172-31-31-52 ~]$ sudo docker --version
Docker version 25.0.5, build 5dc9bcc
[ec2-user@ip-172-31-31-52 ~]$
```

Explore docker command

docker images

- `sudo docker pull mysql`
 - download the image from DockerHub

```
[ec2-user@ip-172-31-31-52 ~]$ [ec2-user@ip-172-31-31-52 ~]$ sudo docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
2c0a233485c3: Pull complete
cb5a6a8519b2: Pull complete
570d30cf82c5: Pull complete
a841bff36f3c: Pull complete
80ba30c57782: Pull complete
5e49e1f26961: Pull complete
ced670fc7f1c: Pull complete
0b9dc7ad7f03: Pull complete
cd0d5df9937b: Pull complete
1f87d67b89c6: Pull complete
Digest: sha256:0255b469f0135a0236d672d60e3154ae2f4538b146744966d96440318cc822c6
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
[ec2-user@ip-172-31-31-52 ~]$
```

- ```
ec2-user@ip-172-31-31-52:~
[ec2-user@ip-172-31-31-52 ~]$ sudo docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
mysql latest 56a8c14e1404 5 weeks ago 603MB
[ec2-user@ip-172-31-31-52 ~]$
```

- ```
[ec2-user@ip-172-31-31-52 ~]$ sudo docker rmi mysql
Untagged: mysql:latest
Untagged: mysql@sha256:0255b469f0135a0236d672d60e3154ae2f4538b146744966d96440318cc822c6
Deleted: sha256:56a8c14e14044b8ec7ffb4dd165c8dbe10d4c6ba3d9e754f0c906f52a0b5b4fb
Deleted: sha256:cf9d5439dc527ea3cc20cc0f0634fe72432b19fefb1e986e3969c130da246589
Deleted: sha256:305ceb1bf1d386ccd7ece5ce7943b919c6ba0a9ae4e17cb3369ed7bb2735b104
Deleted: sha256:99e3ee82bd93baf2623bf0bc9b9d226397e0a4f6dd36708b4cd9d69e9a1ec62
Deleted: sha256:4a0ca5d521869874815338f3bdbbe85466717751f415e5d9c316ec91e9b12b2b
Deleted: sha256:5e82211d9e1c91982da9c38d751affe81b6af3c517e0a2b08ba496756ff75b78
Deleted: sha256:8a2a95fa60bf2fd15ac47ec79dee7b45fadf3b63df375d9322588449ba1d793b
Deleted: sha256:3937438480f5b07bfd7280eeeeee381af8dcc0aa752fbaa8a79d2544408b6cb30
Deleted: sha256:7891c186f13861339eb12d5975e8c61cab262ecdca93e929fcfe17250c5121b6
Deleted: sha256:317936c50e1cf348540ee99c29bc49e01f5711384956958cafcb1d1c50e13fe7
Deleted: sha256:7600fdef234bf101e8f4027a1c27c783cf1e502e2de00f676d99aeaf1d6cc5ef
[ec2-user@ip-172-31-31-52 ~]$
```

Container

- `sudo run -dit nginx`
 - starts a nginx container in the background with an interactive terminal interface.

```
ec2-user@ip-172-31-31-52:~  
[ec2-user@ip-172-31-31-52 ~]$ [ec2-user@ip-172-31-31-52 ~]$ sudo docker run -dit nginx  
Unable to find image 'nginx:latest' locally  
c1elatest: Pulling from library/nginx  
2d429b9e73a6: Pull complete  
9b1039c85176: Pull complete  
9ad567d3b8a2: Pull complete  
773c63cd62e4: Pull complete  
1d2712910bdf: Pull complete  
4b0adc47c460: Pull complete  
171eebbdf235: Pull complete  
Digest: sha256:bc5eac5eafc581aeda3008b4b1f07ebba230de2f27d47767129a6a905c84f470  
Status: Downloaded newer image for nginx:latest  
0fe1408b91f5806e755c1613e1404114e3db14439dbcad69e3431a009df6a4af  
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker ps`
 - view the up and running container and also port number

```
ec2-user@ip-172-31-31-52:~  
[ec2-user@ip-172-31-31-52 ~]$ sudo docker ps  
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS        NAMES  
0fe1408b91f5   nginx    "/docker-entrypoint..." About a minute ago Up About a minute 80/tcp       infallible_greider  
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker stop infallible_greider`
 - this command will stop the docker

```
ec2-user@ip-172-31-31-52:~  
[ec2-user@ip-172-31-31-52 ~]$ [ec2-user@ip-172-31-31-52 ~]$ sudo docker stop nginx  
Error response from daemon: No such container: nginx  
[ec2-user@ip-172-31-31-52 ~]$ sudo docker ps  
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS        NAMES  
0fe1408b91f5   nginx    "/docker-entrypoint..." 3 minutes ago Up 3 minutes 80/tcp       infallible_greider  
[ec2-user@ip-172-31-31-52 ~]$ sudo docker stop infallible_greider  
infallible_greider  
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker ps -a`
 - this command will show the running and stopped container

```
ec2-user@ip-172-31-31-52:~  
[ec2-user@ip-172-31-31-52 ~]$ [ec2-user@ip-172-31-31-52 ~]$ sudo docker ps -a  
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS        NAMES  
0fe1408b91f5   nginx    "/docker-entrypoint..." 6 minutes ago Exited (0) 2 minutes ago 80/tcp       infallible_greider  
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker rm infallible_greider`
 - this command will delete the docker
 - before run the command docker should be stop

```
ec2-user@ip-172-31-31-52:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS   NAMES
0fe1408b91f5   nginx     "/docker-entrypoint..." 6 minutes ago  Exited (0) 2 minutes ago           infallible_greider
[ec2-user@ip-172-31-31-52 ~]$ sudo docker rm infallible_greider
infallible_greider
[ec2-user@ip-172-31-31-52 ~]$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS   NAMES
[ec2-user@ip-172-31-31-52 ~]$
```

volumes

- `sudo docker volume create test-volume`
 - create a volume name to store data

```
ec2-user@ip-172-31-31-52:~$ sudo docker volume create my-volume
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.44/volumes/create": dial unix /var/run/docker.sock: connect: permission denied
[ec2-user@ip-172-31-31-52 ~]$ sudo docker volume create test-volume
test-volume
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker volume ls`
 - to list down the volume

```
ec2-user@ip-172-31-31-52:~$ sudo docker volume ls
DRIVER      VOLUME NAME
local       6c34d1d03c4dbef4c85e85324db7e4cd2aa338dae6178e583ec0a9754a9be64e
local       6ccaec1163ff1516e3d81e4ebd7037e956b30aa8d8dc4a1666daa650231997e7
local       6deac1daf0af736cc178f5f76c5405f3972597b4e930d45a37fc3408cb90f4e5
local       0268a3d7dd61046303dca0af3ab10045a9355c4a940444a3bfc24ce282af84b2
local       561d08731b006cb0b2448488866a91f5084ba892fb463ba344fc0798637f312d
local       54165bf5c92a0746eae7974fb280b1ef2642b946c8e1c97dc42f207500e07fcb
local       ba20068bb5b14c1d4e61ac55f1c3f461306657ad5b826fdd7b6d0f90d85eede2
local       my-volume
local       test-volume
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker volume inspect test-volume`
 - Display detail information about the volume

```
ec2-user@ip-172-31-31-52:~
[ec2-user@ip-172-31-31-52 ~]$ sudo docker volume inspect test-volume
[
  {
    "CreatedAt": "2024-11-25T10:20:30Z",
    "Driver": "local",
    "Labels": null,
    "Mountpoint": "/var/lib/docker/volumes/test-volume/_data",
    "Name": "test-volume",
    "Options": null,
    "Scope": "local"
  }
]
[ec2-user@ip-172-31-31-52 ~]$
```

Network

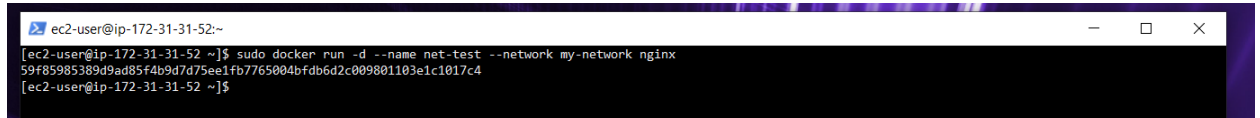
- `sudo docker network ls`
 - list down the network

```
ec2-user@ip-172-31-31-52:~
[ec2-user@ip-172-31-31-52 ~]$ sudo docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
bc5e90ab6dc6        bridge              bridge               local
292dad8e9726        host                host                 local
f419824ea32c        none                null                 local
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker network create my-network`
 - create custom network

```
ec2-user@ip-172-31-31-52:~
[ec2-user@ip-172-31-31-52 ~]$ sudo docker network create my-network
972564f8eb0903cf33cf5dc57116dc11367754d87d84ec71544c40015cf8a882
[ec2-user@ip-172-31-31-52 ~]$ sudo docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
bc5e90ab6dc6        bridge              bridge               local
292dad8e9726        host                host                 local
972564f8eb09        my-network          bridge               local
f419824ea32c        none                null                 local
[ec2-user@ip-172-31-31-52 ~]$
```

- `sudo docker run -d --name net-test --network my-network nginx`
 - run container in custom network



```
ec2-user@ip-172-31-31-52:~  
[ec2-user@ip-172-31-31-52 ~]$ sudo docker run -d --name net-test --network my-network nginx  
59f85985389d9ad85f4b9d7d75ee1fb7765004bfdb6d2c009801103e1c1017c4  
[ec2-user@ip-172-31-31-52 ~]$
```