Lab Exercise 1

Performing CRUD Operation on Containers

Objective: Performing CRUD Operation on Containers

Tools required: Docker Configuration

Pre-requisites: Ubuntu Configuration, Docker

Steps to be followed:

1. Pulling a Docker image
2. Creating a new container
3. Stopping the container
4. Listing all the containers
5. Deleting the container
6. Removing the image

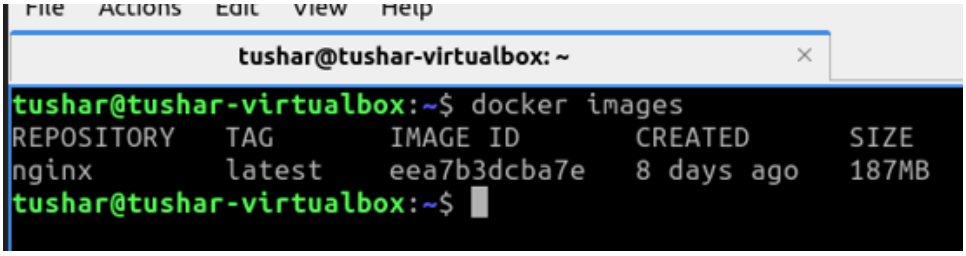
Step 1: Pulling a Docker image

1.1 Open the terminal and pull an image using the command:

sudo docker pull nginx

1.2 List all the docker images to check the newly pulled *nginx* image:

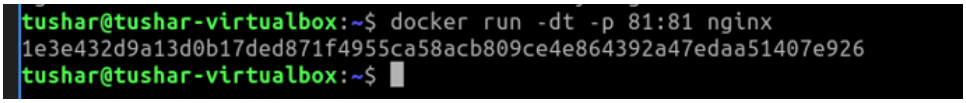
sudo docker images



Step 2: Creating a new container

2.1 Create a new container from the *nginx* image:

sudo docker run -dt -p 81:81 nginx



2.2 List all the running containers to check the newly created container. You can find various details like port of container, it's time of creation and ID.

sudo docker ps

Step 3: Stopping the container

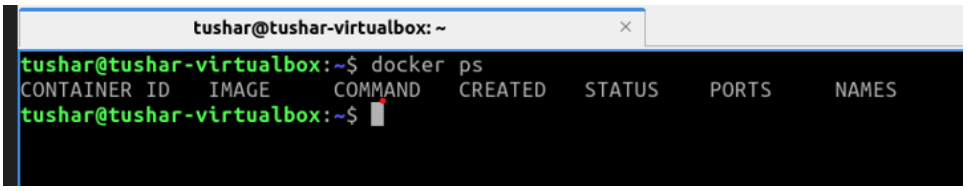
3.1 Use the following command to stop the running container. ***(***You can also us the container ID to stop the container: *sudo docker stop CONTAINER_ID****)***

sudo docker stop CONTAINER_NAME

Note: Replace CONTAINER_NAME with the name of the newly created container. In this case CONTAINER_NAME is stoic_darwin. The container name may differ from the one shown in the image below.

3.2 Use the following command to list all the running containers and verify if the container has stopped running:

sudo docker ps

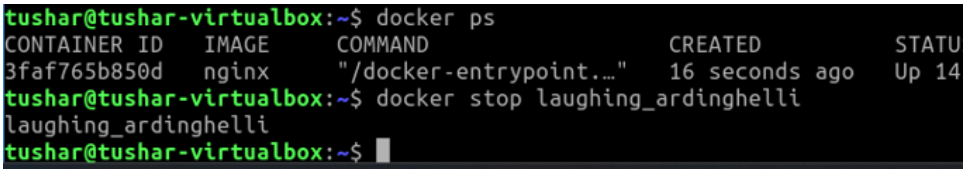


3.3 You can start the container again and check the running containers. ***(***You can also us the container ID to start the container: *sudo docker start CONTAINER_ID****)***

sudo docker start CONTAINER_NAME

sudo docker ps

Note: Replace CONTAINER_NAME with the name of the newly created container. In this case CONTAINER_NAME is stoic_darwin. The container name may differ from the one shown in the image below.



3.4 To start the container in interactive mode, use the –i and –t options.

sudo docker run -it --name=Test_1 ubuntu

```
tushar@tushar-virtualbox:~$ docker run -it --name=Test1 ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
b237fe92c417: Pull complete
Digest: sha256:ec050c32e4a6085b423d36ecd025c0d3ff00c38ab93a3d71a460ff1c44fa6d77
Status: Downloaded newer image for ubuntu:latest
root@ece53066f2ee:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@ece53066f2ee:/# docker ps -a
bash: docker: command not found
root@ece53066f2ee:/# exit
exit
```

Step 4: Listing all the containers

4.1 Use the below command to list all the containers started and the once which are stopped:

sudo docker ps -a

```
tushar@tushar-virtualbox:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED         STATUS                     PORTS     NAMES
ece53066f2ee   ubuntu    "/bin/bash"              2 minutes ago   Exited (127) 4 seconds ago           Test1
3faf765b850d   nginx     "/docker-entrypoint.…"   8 minutes ago   Exited (0) 7 minutes ago             laughing_ardinghelli
652566d7b7b3   nginx     "/docker-entrypoint.…"   8 minutes ago   Exited (0) 8 minutes ago             objective_mahavira
26ae6b26db74   nginx     "/docker-entrypoint.…"   9 minutes ago   Exited (0) 9 minutes ago             flamboyant_germain
42d4d75dd440   nginx     "/docker-entrypoint.…"   9 minutes ago   Exited (126) 9 minutes ago           lucid_fermi
1e3e432d9a13   nginx     "/docker-entrypoint.…"   17 minutes ago  Exited (0) 12 minutes ago            frosty_elbakyan
```

4.2 To list the containers by their ID, use the below command

sudo docker ps -aq

```
tushar@tushar-virtualbox:~$ docker ps -aq
ece53066f2ee
3faf765b850d
652566d7b7b3
26ae6b26db74
42d4d75dd440
1e3e432d9a13
```

You can see the containers with ID are listed.

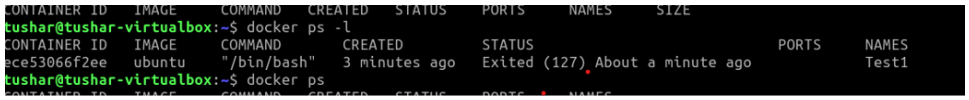
4.3 To list the total file size of each container, use the below command:

sudo docker ps -s

```
tushar@tushar-virtualbox:~$ docker ps -s
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES     SIZE
tushar@tushar-virtualbox:~$
```

4.4 To list the latest created containers, use the following command:

sudo docker ps -l

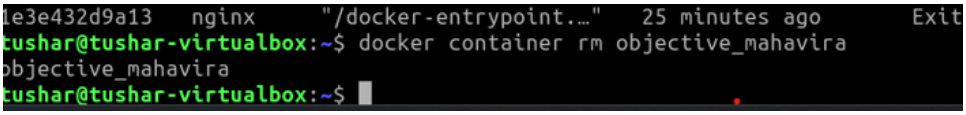


Step 5: Deleting the container

5.1 Stop the running container and remove it using the following commands:

sudo docker stop CONTAINER_NAME

sudo docker container rm CONTAINER_NAME



Note: Replace CONTAINER_NAME with the name of the newly created container. In this case CONTAINER_NAME is sweet_brown. The container name may differ from the one shown in the image below.

Step 6: Removing the image

6.1 Remove the image using the command:

sudo docker image rm nginx