

Task 10 Question:

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

Solution:

1.install Docker

```
aws Services Search [Alt+S]
ubuntu@ip-172-31-42-109:~$ docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
ubuntu@ip-172-31-42-109:~$
```

2. Docker images, Docker pull nginx, Docker run:

```
aws Services Search [Alt+S]
Last login: Tue Nov 28 12:15:22 2023 from 13.233.177.3
ubuntu@ip-172-31-33-42:~$ docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
ubuntu@ip-172-31-33-42:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu@ip-172-31-33-42:~$ docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
1f7ce2fa46ab: Pull complete
9b16c94bb686: Pull complete
9a59d19f9c5b: Pull complete
9ea27b074f71: Pull complete
c6edf33e2524: Pull complete
84b1ff10387b: Pull complete
517357831967: Pull complete
Digest: sha256:10d1f5b58f74683ad34eb29287e07dab1e90f10af243f151bb50aa5dbb4d62ee
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
ubuntu@ip-172-31-33-42:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
nginx latest a6bd71f48f68 7 days ago 187MB
ubuntu@ip-172-31-33-42:~$ docker run -d -p 80:80 nginx
4695f616603f6c9a89c7d63ae2de2c1bc10c00d4515cda9785080e615fec78bf
ubuntu@ip-172-31-33-42:~$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
4695f616603f nginx "/docker-entrypoint..." 17 seconds ago Up 16 seconds 0.0.0.0:80->80/tcp, :::80->80/tcp beautiful_keldysh
ubuntu@ip-172-31-33-42:~$ docker exec -it ^C
ubuntu@ip-172-31-33-42:~$ docker exec -it 4695f616603f bash
root@4695f616603f:/# cd /usr/share/nginx/html
root@4695f616603f:/usr/share/nginx/html# l
bash: l: command not found
```

3. Docker ps, Docker exec:

```
aws Services Search [Alt+S] Mumbai Er_Sharuf
ubuntu@ip-172-31-33-42:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS                               NAMES
4695f616603f   nginx    "/docker-entrypoint..." 16 minutes ago Up 16 minutes 0.0.0.0:80->80/tcp, :::80->80/tcp beautiful_keldysh

ubuntu@ip-172-31-33-42:~$ docker exec -it 4695f616603f bash
root@4695f616603f:/usr/share/nginx/html# ls
50x.html index.html
root@4695f616603f:/usr/share/nginx/html# cat index.html
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
root@4695f616603f:/usr/share/nginx/html# rm index.html
```

4. Docker Commit, Docker Login:

```
aws Services Search [Alt+S] Mumbai Er_Sharuf
<a href="http://nginx.com/">nginx.com</a>.</p>
<p><em>Thank you for using nginx.</em></p>
</body>
</html>
root@4695f616603f:/usr/share/nginx/html# rm index.html
root@4695f616603f:/usr/share/nginx/html# rm 50x.html
root@4695f616603f:/usr/share/nginx/html# echo "welcome to guvi" > index.html
root@4695f616603f:/usr/share/nginx/html# exit
exit
ubuntu@ip-172-31-33-42:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS                               NAMES
4695f616603f   nginx    "/docker-entrypoint..." 25 minutes ago Up 25 minutes 0.0.0.0:80->80/tcp, :::80->80/tcp beautiful_keldysh

ubuntu@ip-172-31-33-42:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED      SIZE
nginx         latest    a6bd71f48f68   7 days ago   187MB

ubuntu@ip-172-31-33-42:~$ docker commit 4695f616603f newimage
sha256:ac2b4f05e0e5b4e944c0ec2c12bcd2be97a1c77fcfb76d42baf05910382476e2

ubuntu@ip-172-31-33-42:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED      SIZE
newimage      latest    ac2b4f05e0e5   8 seconds ago 187MB
nginx         latest    a6bd71f48f68   7 days ago   187MB

ubuntu@ip-172-31-33-42:~$ docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com to create one.
Username: sharuf89
Password:
WARNING! Your password will be stored unencrypted in /home/ubuntu/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
ubuntu@ip-172-31-33-42:~$
```

5. docker push, docker tag:

```
aws Services Search [Alt+S] Mumbai Er_Sharuf
Login Succeeded
ubuntu@ip-172-31-33-42:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED      SIZE
newimage      latest    ac2b4f05e0e5   7 minutes ago 187MB
nginx         latest    a6bd71f48f68   7 days ago   187MB

ubuntu@ip-172-31-33-42:~$ docker push newimage
Using default tag: latest
The push refers to repository [docker.io/library/newimage]
de4f4d17411f: Preparing
0d0e9c83b6f7: Preparing
cddc309885a2: Preparing
c2d3ab485d1b: Preparing
66283570f41b: Preparing
f5525891d9a9: Waiting
8ae474e0cc8f: Waiting
92770f546e06: Waiting
denied: requested access to the resource is denied
ubuntu@ip-172-31-33-42:~$ docker tag newimage sharuf89/latest
ubuntu@ip-172-31-33-42:~$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED      SIZE
newimage      latest    ac2b4f05e0e5   10 minutes ago 187MB
sharuf89/latest latest    ac2b4f05e0e5   10 minutes ago 187MB
nginx         latest    a6bd71f48f68   7 days ago   187MB

ubuntu@ip-172-31-33-42:~$ docker push sharuf89/latest
Using default tag: latest
The push refers to repository [docker.io/sharuf89/latest]
de4f4d17411f: Pushed
0d0e9c83b6f7: Pushed
cddc309885a2: Pushed
c2d3ab485d1b: Pushed
66283570f41b: Pushed
```

6. dockerfile:

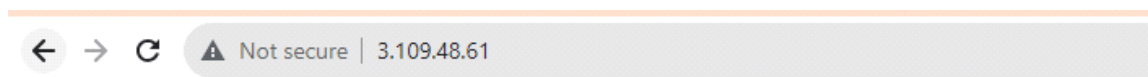
```
aws Services Search
ubuntu@ip-172-31-42-109:~$ cat dockerfile
FROM ubuntu
RUN apt update -y
RUN apt install nginx -y
COPY index.html /var/www/html
CMD ["nginx","-g","daemon off;"]
ubuntu@ip-172-31-42-109:~$ cat index.html
welcome to cromax
ubuntu@ip-172-31-42-109:~$
```

7. Building image from dockerfile and running a container:

```
aws Services Search [Alt+S]
ubuntu@ip-172-31-42-109:~$ vi index.html
ubuntu@ip-172-31-42-109:~$ docker build -t new .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

Sending build context to Docker daemon 16.38kB
Step 1/5 : FROM ubuntu
--> e4c58958181a
Step 2/5 : RUN apt update -y
--> Using cache
--> 66347491d96b
Step 3/5 : RUN apt install nginx -y
--> Using cache
--> a60d868aa798
Step 4/5 : COPY index.html /var/www/html
--> 4054603ede1e
Step 5/5 : CMD ["nginx","-g","daemon off;"]
--> Running in 851e874327c4
Removing intermediate container 851e874327c4
--> 1b90e1d384cf
Successfully built 1b90e1d384cf
Successfully tagged new:latest
ubuntu@ip-172-31-42-109:~$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
new latest 1b90e1d384cf 15 seconds ago 180MB
ubuntu latest e4c58958181a 7 weeks ago 77.8MB
ubuntu@ip-172-31-42-109:~$ docker run -d -p 80:80 new
e77e13e836277d1f40bc6e4ebcbf89d01139124bf0d6addd6fa93819e8b3c6c8
ubuntu@ip-172-31-42-109:~$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
e77e13e83627 new "nginx -g 'daemon of..." 10 seconds ago Up 9 seconds 0.0.0.0:80->80/tcp, :::80->80/tcp objective_pike
```

8. container output:



9. Pushing the image to docker hub:

