Docker Task –3

Task Description:

Create a custom docker image for nginx and deploy it using docker compose, where the volume bind mount should be at /var/opt/nginx location. Push the created custom docker image to your docker-hub.

1.Amazon EC2 instance and run the linux t2 micro machine

2. install docker and run docker

3. create dockerfile

      FROM nginx:alpine

      COPY index.html /usr/share/nginx/html/

      EXPOSE 80

4. create index.html file to display on website

```html
<!-- index.html -->
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Hello Docker</title>
</head>
<body>
    <h1>Hello, Docker My name is Umer and Its is my Website!</h1>
    <p>This is a simple static page served by Nginx.</p>
</body>
</html>
```

5- docker-compose.yml file to create

```
[ec2-user@ip-172-31-0-92 ~]$ cat docker-compose.yml
services:
  web:
    build: .
    image: nginx_custom
    container_name: nginx_image_custom
    ports:
      - 8080:80
    volumes:
      - /var/opt/nginx
```

6. docker compose installation on AWS

```
[ec2-user@ip-172-31-0-92 ~]$ sudo curl -L https://github.com/docker/compose/releases/latest/download/docker-compose-$(uname -s)-$(uname -m) -o /usr/local/bi
n/docker-compose
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
  0     0    0     0    0     0      0      0 --:--:-- --:--:-- --:--:--     0
100 61.2M  100 61.2M    0     0  60.3M      0  0:00:01  0:00:01 --:--:-- 94.0M
[ec2-user@ip-172-31-0-92 ~]$ sudo chmod +x /usr/local/bin/docker-compose
[ec2-user@ip-172-31-0-92 ~]$ docker-compose version
Docker Compose version v2.31.0
[ec2-user@ip-172-31-0-92 ~]$
```

7. docker-compose up

sudo docker-compose up --build -d

```
[ec2-user@ip-172-31-0-92 ~]$ sudo sudo docker-compose up --build -d
[+] Building 0.0s (0/1)                                                                              docker:default
[+] Running 0/1
[+] Building 0.2s (8/8) FINISHED                                                                     docker:default
 => [web internal] load build definition from dockerfile                                                      0.0s
 => => transferring dockerfile: 173B                                                                          0.0s
 => [web internal] load metadata for docker.io/library/nginx:1.10.1-alpine                                    0.1s
 => [web internal] load .dockerignore                                                                         0.0s
 => => transferring context: 2B                                                                               0.0s
 => [web internal] load build context                                                                         0.0s
 => => transferring context: 91B                                                                              0.0s
 => [web 1/2] FROM docker.io/library/nginx:1.10.1-alpine@sha256:dabd1d182f12e2a7d372338dfd0cde303ef042a6ba01cc829ef464982f9c9e2c   0.0s
 => CACHED [web 2/2] COPY index.html /usr/share/nginx/html/                                                    0.0s
 => [web] exporting to image                                                                                   0.0s
 => => exporting layers                                                                                        0.0s
 => => writing image sha256:d1c5f83ddcaf16f415f30dc34148900bcf8b005a3b4849336cb18ac685e0ea7b                  0.0s
 => [web] Running 3/3o docker.io/library/nginx_custom                                                          0.0s
 ✔ Service web          Built                                                                                  0.3s
 ✔ Container nginx_customer      Recreated                                                                     0.4s
 ✔ Container nginx_image_custom  Started                                                                       0.3s
```

Verify the image

```
[ec2-user@ip-172-31-0-92 ~]$ sudo docker images
REPOSITORY        TAG        IMAGE ID         CREATED          SIZE
ec2-user-web      latest     d1c5f83ddcaf     4 minutes ago    54MB
nginx_custom      latest     d1c5f83ddcaf     4 minutes ago    54MB
<none>            <none>     066197bb696      58 minutes ago   52 5MB
```
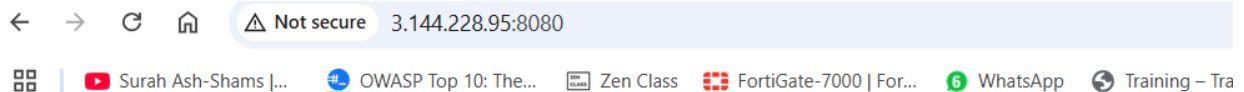
Custom NGINX image container is running

```
[ec2-user@ip-172-31-0-92 ~]$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND              CREATED            STATUS            PORTS                                                         NAMES
c21a85238ef6   nginx_custom   "nginx -g 'daemon of…"  About a minute ago   Up About a minute   443/tcp, 0.0.0.0:8080->80/tcp, :::8080->80/tcp   nginx_image
_custom
[ec2-user@ip-172-31-0-92 ~]$
```

Access the nginx link over port 8080 and can be seen below

←   →   C   ⌂   ⚠ Not secure   3.144.228.95:8080

▦   ▶ Surah Ash-Shams |...   OWASP Top 10: The...   Zen Class   FortiGate-7000 | For...   WhatsApp   Training – Tra

Hello, Docker My name is Umer and Its is my Website!

This is a simple static page served by Nginx.

Now go to into container to check volume mount point

```
[ec2-user@ip-172-31-0-92 ~]$ sudo docker exec -it c21a85238ef6 sh
/ #
```
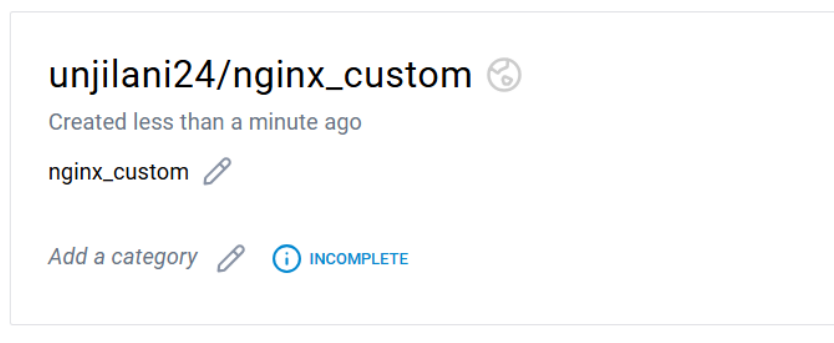
After entering the docker we can have volume

```
nginx
/var/opt # cd nginx/
/var/opt/nginx # ls
/var/opt/nginx #
```

```
/var/opt/nginx # mount | grep /var/opt/nginx
/dev/xvda1 on /var/opt/nginx type xfs (rw,seclabel,noatime,attr2,inode64,logbufs=8,logbsize=32k,sunit=1024,swidth=1024,noquota)
/var/opt/nginx # 
```

```
/var/opt/nginx # df -h
Filesystem                Size      Used Available Use% Mounted on
overlay                   7.9G      2.2G      5.7G  28% /
tmpfs                    64.0M         0     64.0M   0% /dev
shm                      64.0M         0     64.0M   0% /dev/shm
/dev/xvda1                7.9G      2.2G      5.7G  28% /etc/resolv.conf
/dev/xvda1                7.9G      2.2G      5.7G  28% /etc/hostname
/dev/xvda1                7.9G      2.2G      5.7G  28% /etc/hosts
/dev/xvda1                7.9G      2.2G      5.7G  28% /var/opt/nginx
```

Volume can be verified from above screenshots

Sigin Docker Hub ; and create repository

unjilani24/nginx_custom

Created less than a minute ago

nginx_custom ✎

Add a category ✎   ⓘ INCOMPLETE

To push the repository into hub use below

Pushing images

You can push a new image to this repository using the CLI:

```
docker tag local-image:tagname new-repo:tagname
docker push new-repo:tagname
```

Make sure to replace `tagname` with your desired image repository tag.

Docker commands

To push a new tag to this repository:

```
docker push unjilani24/nginx_custom:tagname
```

My repository name: **docker push unjilani24/nginx_custom:nginx_custom**

docker tag nginx_custom unjilani24/nginx_custom:latest

docker push unjilani24/nginx_custom:latest

```
[ec2-user@ip-172-31-0-92 ~]$ docker tag nginx_custom unjilani24/nginx_custom:latest
[ec2-user@ip-172-31-0-92 ~]$ ^C
[ec2-user@ip-172-31-0-92 ~]$ docker push ^C
[ec2-user@ip-172-31-0-92 ~]$ docker push unjilani24/nginx_custom:latest
The push refers to repository [docker.io/unjilani24/nginx_custom]
0f177bdd4977: Pushed
3e214109dd04: Mounted from library/nginx
5080acfc4b83: Mounted from library/nginx
0fd716f781a0: Mounted from library/nginx
011b303988d2: Mounted from library/nginx
latest: digest: sha256:f9340974a00e028b964bae0e3cde3b1021d6f4baba2b4fe598ef2c3184ff99b4 size: 1361
```

Customize Image successfully pushed to Docker Hub

unjilani24/nginx_custom ⊗

Last pushed 23 minutes ago

nginx_custom ✎

Add a category ✎   ⓘ **INCOMPLETE**

Tags

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
● latest	🐧	Image	23 minutes ago	23 minutes ago

See all