

Karthick J (DO14)

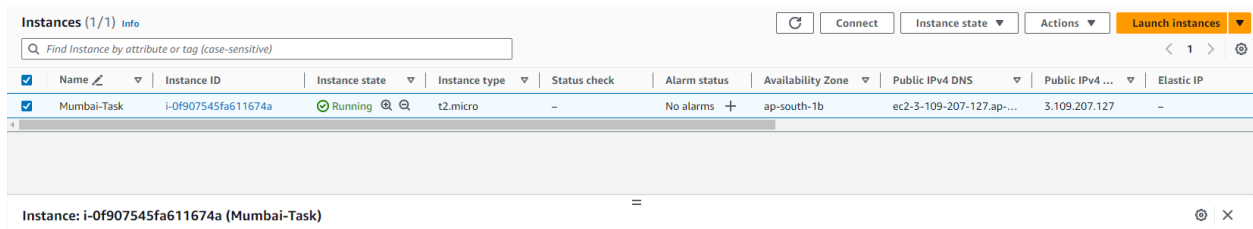
Question

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

Solution:

Step:1

Creating a instance.



The screenshot shows the AWS Management Console 'Instances' page. A table lists one instance, 'Mumbai-Task', with ID 'i-0f907545fa611674a'. The instance is in a 'Running' state, using a 't2.micro' instance type. The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, Public IPv4 address, and Elastic IP. Below the table, a detailed view of the selected instance is partially visible.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
Mumbai-Task	i-0f907545fa611674a	Running	t2.micro	-	No alarms	ap-south-1b	ec2-3-109-207-127.ap-...	3.109.207.127	-

Step:2

Installing Docker and Docker compose.

```
root@ip-172-31-8-77:/home/ubuntu# docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
root@ip-172-31-8-77:/home/ubuntu# docker-compose --version
docker-compose version 1.29.2, build unknown
root@ip-172-31-8-77:/home/ubuntu#
```

Step:3

Creating a Docker file.

The dockerfile contains:

```
FROM nginx:alpine

WORKDIR /usr/share/nginx/html

COPY . .

EXPOSE 80
```

```
CMD ["nginx", "-g", "daemon off;"]
```

```
root@ip-172-31-8-77:/home/ubuntu# cat dockerfile
FROM nginx:alpine

WORKDIR /usr/share/nginx/html

COPY . .

EXPOSE 80

CMD ["nginx", "-g", "daemon off;"]
root@ip-172-31-8-77:/home/ubuntu#
```

Step:4

Building a docker image.

```
root@ip-172-31-8-77:/home/ubuntu# docker build -t karthick9911/docker-sample .
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 14.34kB
Step 1/5 : FROM nginx:alpine
alpine: Pulling from library/nginx
96526aa774ef: Pull complete
740091335c74: Pull complete
da9c2e764c5b: Pull complete
ade17ad21ef4: Pull complete
4e6f462c8a69: Pull complete
1324d9977cd2: Pull complete
1b9b96da2c74: Pull complete
153aef7ca07f: Pull complete
Digest: sha256:db353d0f0c479c91bd15e01fc68ed0f33d9c4c52f3415e63332c3d0bf7a4bb77
Status: Downloaded newer image for nginx:alpine
---> b135667c9898
Step 2/5 : WORKDIR /usr/share/nginx/html
---> Running in 2eefc45c05db
Removing intermediate container 2eefc45c05db
---> 270d2852b1b7
Step 3/5 : COPY . .
---> 5c6ec2c48afd
Step 4/5 : EXPOSE 80
---> Running in 692f33d7b840
Removing intermediate container 692f33d7b840
---> afc9dd1f64b6
Step 5/5 : CMD ["nginx","-g", "daemonoff;"]
---> Running in 63656a034580
Removing intermediate container 63656a034580
---> 127878e35db0
```

```

root@ip-172-31-8-77:/home/ubuntu# docker images
REPOSITORY          TAG          IMAGE ID          CREATED           SIZE
karthick9911/docker-sample  latest      eb3571396698     29 minutes ago   47.7MB
<none>              <none>      a7585b7b1ff9     34 minutes ago   47.7MB
<none>              <none>      127878e35db0     40 minutes ago   47.7MB
nginx               alpine      b135667c9898     6 days ago       47.7MB
nginx               latest      593aee2afb64     6 days ago       187MB
root@ip-172-31-8-77:/home/ubuntu#

```

Step:5

Creating a docker volume.

```

root@ip-172-31-8-77:/home/ubuntu# docker volume create test
test
root@ip-172-31-8-77:/home/ubuntu# docker volume ls
DRIVER      VOLUME NAME
local       test

```

Step:6

Creating a docker-compose.yml file.

```

root@ip-172-31-8-77:/home/ubuntu# cat docker-compose.yml
version: '3'
services:
  demo:
    image: "karthick9911/docker-sample"
    ports:
      - "80:80"
    volumes:
      - test:/var/opt/nginx
volumes:
  test:
    external: true
root@ip-172-31-8-77:/home/ubuntu#

```

Step:7

Deploying the custom nginx image by docker-compose.

```

root@ip-172-31-8-77:/home/ubuntu# docker-compose up -d
Creating network "ubuntu_default" with the default driver
Creating ubuntu_demo_1 ... done

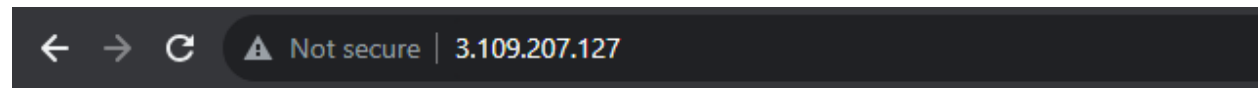
```

```

root@ip-172-31-8-77:/home/ubuntu# docker-compose ps
      Name                  Command              State      Ports
-----
ubuntu_demo_1  /docker-entrypoint.sh nginx ...    Up        0.0.0.0:80->80/tcp, :::80->80/tcp

```

Output:



Welcome to Docker

Hello Karthick

Proof of the docker volume attached to custom docker container:

```

root@ip-172-31-8-77:/home/ubuntu# docker ps
CONTAINER ID   IMAGE                  COMMAND                  CREATED        STATUS        PORTS                               NAMES
d012e1337891   karthick9911/docker-sample  "/docker-entrypoint..."  13 minutes ago  Up 13 minutes  0.0.0.0:80->80/tcp, :::80->80/tcp  ubuntu_demo_1
root@ip-172-31-8-77:/home/ubuntu# docker inspect d012e1337891

```

```

"Image": "karthick9911/docker-sample",
"Volumes": {
    "/var/opt/nginx": {}
}

```