Deploy a Flask App Using Docker on AWS EC2

Objective

This project helped to understand Docker by creating, containerizing, and deploying a simple Flask web app on an AWS EC2 instance.

Steps Performed

Step 1: Launch AWS EC2 instance

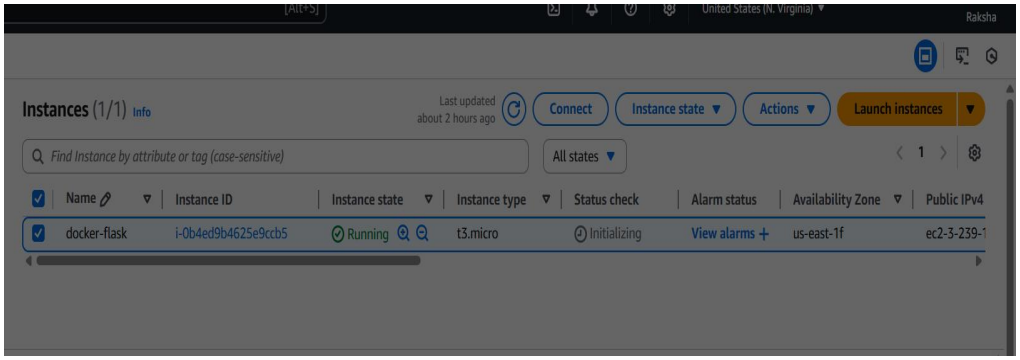

Fig 1: Snapshot of the aws ec2 instance

In security group, add inbound rules: Allow **SSH → Port 22**

Add rule: **Custom TCP → Port 5000** (for Flask)

Step 2: Connect to EC2 using gitbash

ssh -i "key pair name.pem" ubuntu@<ec2-public-ip>

Step 3: Install Docker on EC2

Sudo apt install docker.io -y

Step 4: Create the project folder

flask-docker

Step 4: Create the 3 files for the app

- ***app.py***
- ***requirements.txt***
- ***Dockerfile***

File app.py

```
from flask import Flask

app = Flask(__name__)

@app.route('/')
def home():
   return "Hello from Docker on AWS EC2!   "

if __name__ == '__main__':
   app.run(host='0.0.0.0', port=5000)
```

File requirements.txt

```
Flask
```

Dockerfile

```
FROM python:3.9-slim

WORKDIR /app

COPY . /app

RUN pip install -r requirements.txt

CMD ["python", "app.py"]
```

Step 5: build docker image

```
sudo docker build -t flask-app .
```

Output: *Successfully tagged flask-app:latest*

Step 6: Run docker container

```
sudo docker run -d -p 5000:5000 flask-app
```

```
CONTAINER ID   IMAGE         COMMAND             CREATED           STATUS
PORTS                                                 NAMES
140e39415e4f   flask-app     "python app.py"     24 seconds ago    Up 23
seconds    0.0.0.0:5000->5000/tcp, [::]:5000->5000/tcp    beautiful_bassi
```

Docker container Output

Step 7: Final Result

Open Browser, then type : http://<ec2-public-ip>:5000

Fig 2: Snapshot of the final result in the browser