

# **Docker Project**

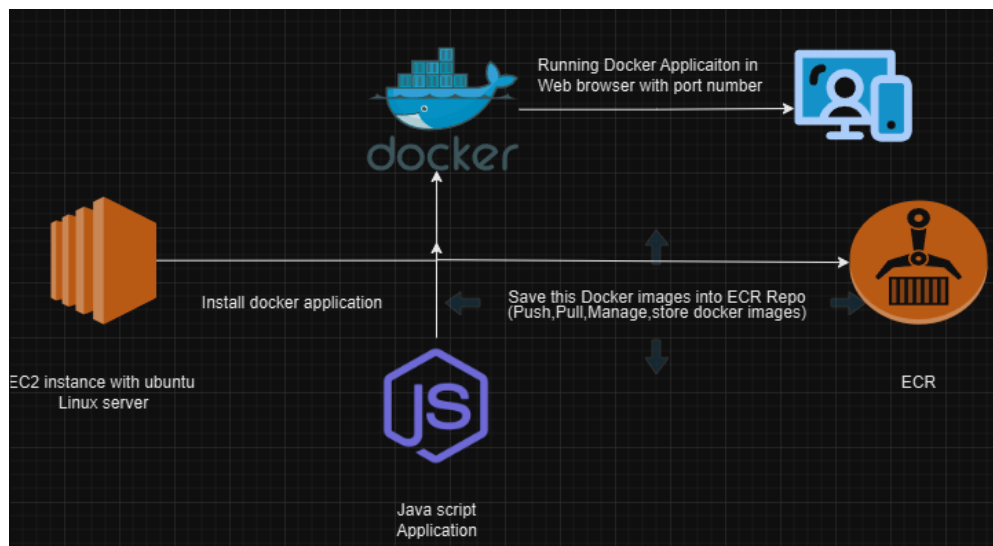
## **Introduction:**

In this Project where I integrated Docker with Amazon Elastic Container Registry (ECR). This project involved:

Building Docker Images: We created efficient and optimized Docker images for our applications.

Setting Up ECR: We configured Amazon ECR to securely store and manage our Docker images.

## **Diagram:**



## **Installing EC2 Instances:**

I have installed an Ubuntu machine in AWS and installed a docker application on that server and a Java 17 application as well to proceed further with this project.

Instances (1) info

Last updated less than a minute ago

Connect

Instance state ▾

Actions ▾

Launch instances

Q Find Instance by attribute or tag (case-sensitive)

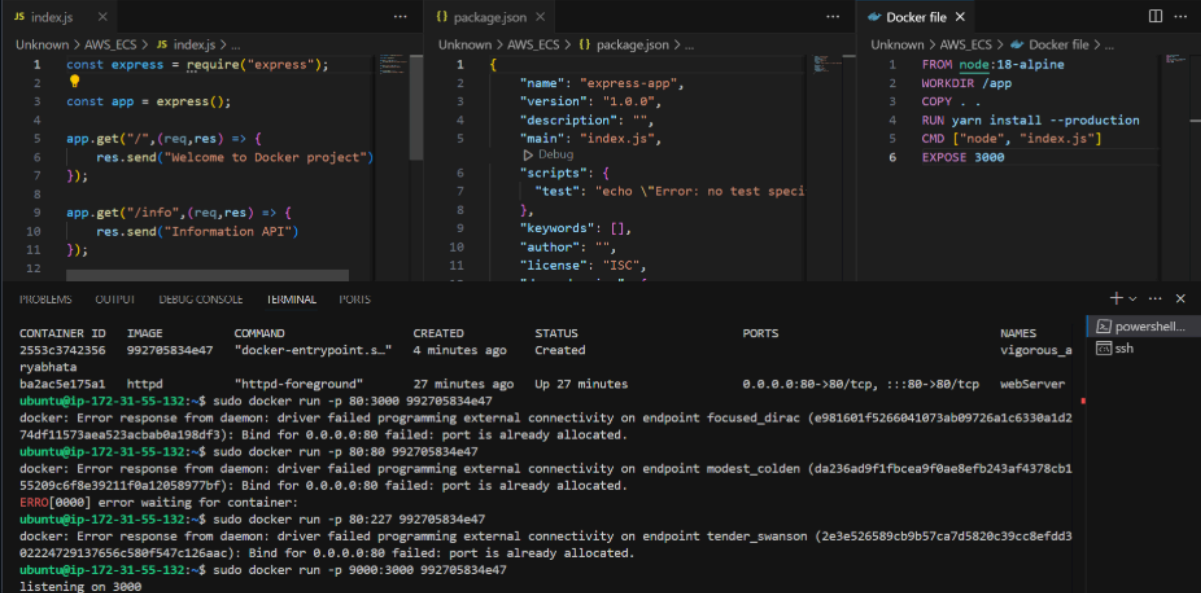
All states ▾

< 1 >

<input type="checkbox"/>	Name <a href="#">🔗</a> ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾
<input type="checkbox"/>	Docker	i-0835be03735ec1845	<span>✔ Running</span> <a href="#">🔗</a> <a href="#">🔍</a>	t2.micro	<span>✔ 2/2 checks passed...</span> <a href="#">View alarms</a> +	us-east-1c	

## Docker Configuration:

I have developed a docker image with node js application and run the docker container in that server and allowed port number to establish docker application in the browser.



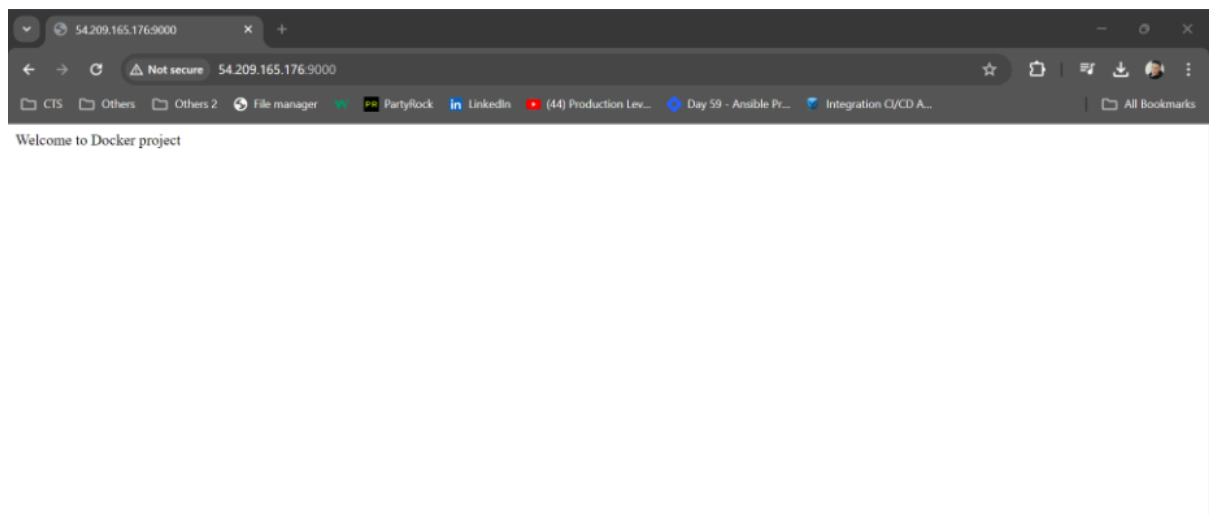
The screenshot shows a VS Code editor with three files open: `index.js`, `package.json`, and `Dockerfile`. The `index.js` file contains an Express.js application. The `package.json` file defines the application's metadata and scripts. The `Dockerfile` file defines the Docker image build process. Below the editor, the `TERMINAL` tab shows the output of Docker commands, including the creation of a container and the attempt to run it with port mappings. The output indicates that the port 80 is already allocated, leading to an error.

```
index.js
1 const express = require("express");
2
3 const app = express();
4
5 app.get("/", (req, res) => {
6   res.send("Welcome to Docker project");
7 });
8
9 app.get("/info", (req, res) => {
10  res.send("Information API");
11 });
12

package.json
1 {
2   "name": "express-app",
3   "version": "1.0.0",
4   "description": "",
5   "main": "index.js",
6   "scripts": {
7     "test": "echo \"Error: no test speci"
8   },
9   "keywords": [],
10  "author": "",
11  "license": "ISC",
12

Dockerfile
1 FROM node:18-alpine
2 WORKDIR /app
3 COPY . .
4 RUN yarn install --production
5 CMD ["node", "index.js"]
6 EXPOSE 3000

TERMINAL
CONTAINER ID   IMAGE               COMMAND                  CREATED        STATUS        PORTS                               NAMES
2553c3742356   992705834e47       "docker-entrypoint.s..." 4 minutes ago   Created                                vigorous_a
nyabhata
ba2ac5e175a1   httpd              "httpd-foreground"      27 minutes ago   Up 27 minutes   0.0.0.0:80->80/tcp, :::80->80/tcp   webServer
ubuntu@ip-172-31-55-132:~$ sudo docker run -p 80:3000 992705834e47
docker: Error response from daemon: driver failed programming external connectivity on endpoint focused_dirac (e981601f5266041073ab09726a1c6330aid2
74df11573aea523acbab0a198df3): Bind for 0.0.0.0:80 failed: port is already allocated.
ubuntu@ip-172-31-55-132:~$ sudo docker run -p 80:80 992705834e47
docker: Error response from daemon: driver failed programming external connectivity on endpoint modest_colden (da236ad9f1fbcea9f0ae8efb243af4378cb1
55209c6f8e39211f0a12058977bf): Bind for 0.0.0.0:80 failed: port is already allocated.
ERRO[0000] error waiting for container:
ubuntu@ip-172-31-55-132:~$ sudo docker run -p 80:227 992705834e47
docker: Error response from daemon: driver failed programming external connectivity on endpoint tender_swanson (2e3e526589cb9b57ca7d5820c39cc8efdd3
02224729137656c580f547c126aac): Bind for 0.0.0.0:80 failed: port is already allocated.
ubuntu@ip-172-31-55-132:~$ sudo docker run -p 9000:3000 992705834e47
listening on 3000
```



## Docker push to ECR:

I have pushed our developed docker image to amazon ECR and saved it to the private repository.

```
ubuntu@ip-172-31-55-132:~$ sudo docker build -t anbuweb_123 .
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 277.7MB
Step 1/6 : FROM node:18-alpine
--> e64c650e0bf3
Step 2/6 : WORKDIR /app
--> Using cache
--> 31726fe6e767
Step 3/6 : COPY . .
--> Using cache
--> 0c8a6f8f50c2
Step 4/6 : RUN yarn install --production
--> Using cache
--> e7b0291cd08f
Step 5/6 : CMD ["node", "index.js"]
--> Using cache
--> d59bf224526
Step 6/6 : EXPOSE 3000
--> Using cache
--> 8a65aa9c0db7
Successfully built 8a65aa9c0db7
Successfully tagged anbuweb_123:latest
ubuntu@ip-172-31-55-132:~$ docker tag anbuweb_123:latest public.ecr.aws/n0m3d2r3/anbuweb_123:latest
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/images/anbuweb_123:latest/tag?repo=public.ecr.aws%2Fn0m3d2r3%2Fanbuweb_123&tag=latest": dial unix /var/run/docker.sock: connect: permission denied
ubuntu@ip-172-31-55-132:~$ sudo docker tag anbuweb_123:latest public.ecr.aws/n0m3d2r3/anbuweb_123:latest
ubuntu@ip-172-31-55-132:~$ sudo docker push public.ecr.aws/n0m3d2r3/anbuweb_123:latest
The push refers to repository [public.ecr.aws/n0m3d2r3/anbuweb_123]
c970db38d931: Pushed
31709561f4e31: Pushed
e619b90ecc17: Pushed
28576e0eff32: Pushed
daa732f7b271: Pushed
7cc8f36eb357: Pushed
78561cef0761: Pushed
latest: digest: sha256:777d4212c9b521d0628a9c0b184749c84f0926eebd0477377d4d181fd71bb658 size: 1788
ubuntu@ip-172-31-55-132:~$
```

Amazon ECR > Public Registry > Repositories > anbuweb\_123 > sha256:777d4212c9b521d0628a9c0b184749c84f0926eebd0477377d4d181fd71bb658


## Image

Details


Image tags

latest

URI

 public.ecr.aws/n0m3d2r3/anbuweb\_123:latest

Digest

 sha256:777d4212c9b521d0628a9c0b184749c84f0926eebd0477377d4d181fd71bb658

General information

Artifact type	Repository	Pushed at
Image	anbuweb_123	August 27, 2024, 00:05:44 (UTC+05.5)
Size (MB)		
165.38		

Thank you ! Happy learning !