

Lab Exercise 5- Building a Docker Image for an HTML App Using Nginx

1. Setup

You will need:

- Docker installed on your machine.
- A simple HTML file for the app.

2. Step 1: Create the HTML File

Create a directory for your HTML app and place an index.html file in it.

```
mkdir nginx-html-app
```

```
cd nginx-html-app
```

Inside the nginx-html-app directory, create the HTML file.

```
touch index.html
```

Edit the index.html file with the following content (or any custom HTML content you want):

```
<!DOCTYPE html>
<html>
<head>
  <title>Welcome to My Nginx HTML App</title>
</head>
<body>
  <h1>Hello, Nginx Docker!</h1>
  <p>This is a simple HTML app served by Nginx in a Docker container.</p>
</body>
</html>
```

3. Step 2: Create a Dockerfile

In the same directory, create a Dockerfile. This file will define how to build the Docker image using Nginx as the base image.

```
touch Dockerfile
```

Edit the Dockerfile and add the following content:

```
FROM nginx:latest
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```

4. Step 3: Build the Docker Image

Now that you have the Dockerfile and index.html, it's time to build the Docker image. Run the following command to build the image, giving it a tag (e.g., nginx-html-app):

```
docker build -t nginx-html-app .
```

```
C:\Users\Vibhav_Khaneja\OneDrive\Desktop\nnginx-html-app>docker build -t nginx-html-app .
[+] Building 0.0s (0/0)  docker:desktop-linux
2024/11/07 15:30:17 http2: server: error reading preface from client //./pipe/dockerDesktopLinuxEngine: file has already
[+] Building 18.6s (7/7) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 112B
=> [internal] load metadata for docker.io/library/nginx:latest
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [1/2] FROM docker.io/library/nginx:latest
=> [internal] load build context
=> => transferring context: 294B
=> [2/2] COPY index.html /usr/share/nginx/html/
=> exporting to image
=> => exporting layers
=> => writing image sha256:abcedd1010a97d428e03cb71f19ba50b1d5dbb4435f11bab06cb87a0b42e0f4db
=> => naming to docker.io/library/nginx-html-app

What's next:
  View a summary of image vulnerabilities and recommendations → docker scout quickview
C:\Users\Vibhav_Khaneja\OneDrive\Desktop\nnginx-html-app>
```

Docker will use the Nginx base image, copy your index.html into the appropriate directory, and build the image.

5. Step 4: Run the Docker Container

After building the image, you can run the container with the following command:

```
docker run -d -p 8080:80 nginx-html-app
```

```
C:\Users\Vibhav_Khaneja\OneDrive\Desktop\nnginx-html-app>docker run -d -p 8080:80 nginx-html-app
a7712577b64c1a8139e803e35a4fae3687b24b16f352831f6d71f216cf90d7f4
C:\Users\Vibhav_Khaneja\OneDrive\Desktop\nnginx-html-app>
```

This command runs the container in detached mode (-d) and maps port 8080 on your host machine to port 80 inside the container, where Nginx is serving your HTML app.

6. Step 5: Verify

Open a browser and go to <http://localhost:8080>. You should see your HTML page with the message “Hello, Nginx Docker!”.



7. Step 6: Stop and Remove the Container

Once you're done, you can stop and remove the container:

```
docker ps # to see running containers
```

```
docker stop <container-id>
```

```
docker rm <container-id>
```

```
C:\Users\Vibhav Khaneja\OneDrive\Desktop\nginx-html-app>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
a7712577b64c   nginx-html-app "/docker-entrypoint..." 2 minutes ago  Up 2 minutes  0.0.0.0:8080->80/tcp     unruffled
_shockley
```

```
C:\Users\Vibhav Khaneja\OneDrive\Desktop\nginx-html-app>docker stop a7712577b64c
a7712577b64c
```

```
C:\Users\Vibhav Khaneja\OneDrive\Desktop\nginx-html-app>
```

```
C:\Users\Vibhav Khaneja\OneDrive\Desktop\nginx-html-app>docker rm a7712577b64c
a7712577b64c
```

```
C:\Users\Vibhav Khaneja\OneDrive\Desktop\nginx-html-app>docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
```

```
C:\Users\Vibhav Khaneja\OneDrive\Desktop\nginx-html-app>
```