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Deploy an App with Docker



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The screenshot shows the Docker Desktop application window. The title bar reads "docker desktop PERSONAL". The main area is titled "Containers" with a sub-instruction "View all your running containers and applications." Below this, there's a section titled "Your running containers show up here" with the sub-instruction "A container is an isolated environment for your code". On the left, a sidebar menu includes "Ask Gordon BETA", "Containers" (which is selected), "Images", "Volumes", "Builds", "Models BETA", "Docker Hub", "Docker Scout", and "Extensions". At the bottom, status information shows "Engine running", "RAM 1.97 GB CPU 0.25%", "Disk: 1.14 GB used (limit 1006.85 GB)", and "Terminal v4.41.2".

Introducing Today's Project!

What is Docker?

Docker is a platform for building, shipping, and running containers. We used it locally and on AWS EBS.

One thing I didn't expect...

So much of debugging on installation of Docker Desktop and while using EBS.

This project took me...

2 hrs more with high touch.

Understanding Containers and Docker

Containers

A container is a lightweight, portable, and self-sufficient package of software that includes everything needed to run an application.

A container image is a blueprint or template for containers. It gives Docker instructions on what to include in a container, such as application code, libraries, dependencies, and necessary files.

Docker

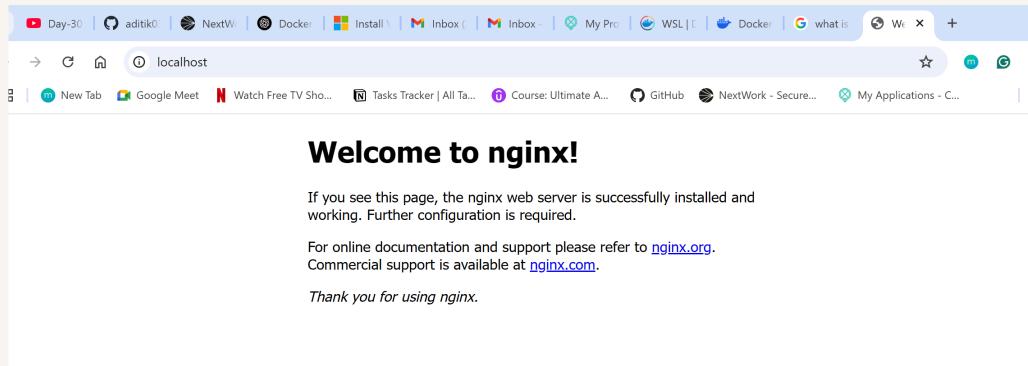
Docker is the platform to package applications with all the required dependencies and containerize them, and Docker Desktop is the User-friendly app that simplifies Docker development.

The Docker daemon is the long-running process that manages containers. It takes commands from the Docker client and does the heavy lifting of building, running, and distributing your containers.

Running an Nginx Image

Nginx is a web server, which means it's a program that serves web pages to people on the internet. Also referred to as a 'proxy server', which helps in load balancing.

The command I ran to start a new container was 'docker run -d -p 80:80 <base-image-name>'.

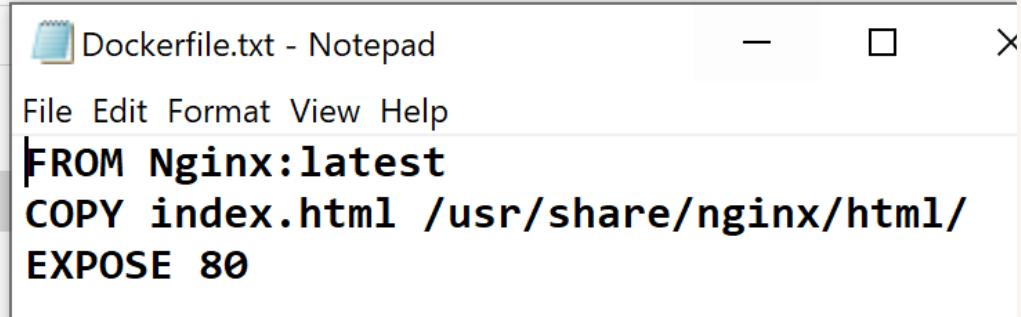


Creating a Custom Image

A Dockerfile is a text document containing instructions for building a Docker image. It acts as a script with commands that specify how to assemble an image, including setting up the base environment, installing dependencies, and configuring the application.

My Dockerfile tells Docker three things:
use Nginx as base image
replace nginx web content with custom web content
expose it to port 80

The command I used to build a custom image with my Dockerfile was "docker build -t my-web-app ." The '.' at the end of the command means the current directory.

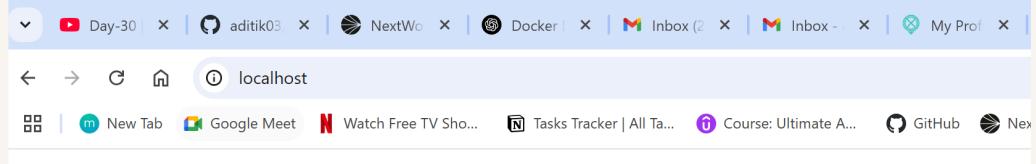


```
Dockerfile.txt - Notepad
File Edit Format View Help
FROM Nginx:latest
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```

Running My Custom Image

'There was an error when I ran my custom image because one container was already running on port 80. I resolved this by stopping the existing container.

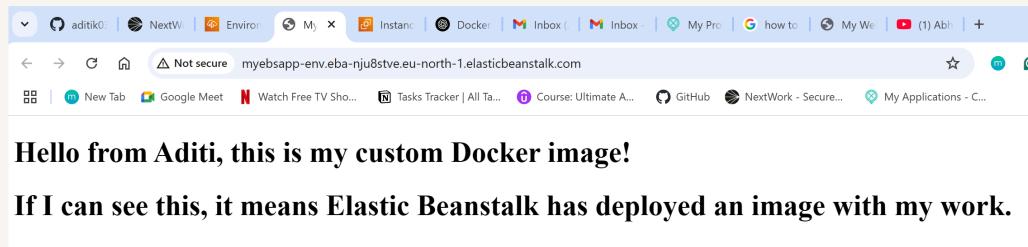
In this example, the container image is the custom image, and the container is running.



Elastic Beanstalk

Elastic Beanstalk is a service that makes it easy to deploy cloud applications without worrying about the underlying infrastructure.

Deploying my custom image with Elastic Beanstalk took me around 30 minutes.





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