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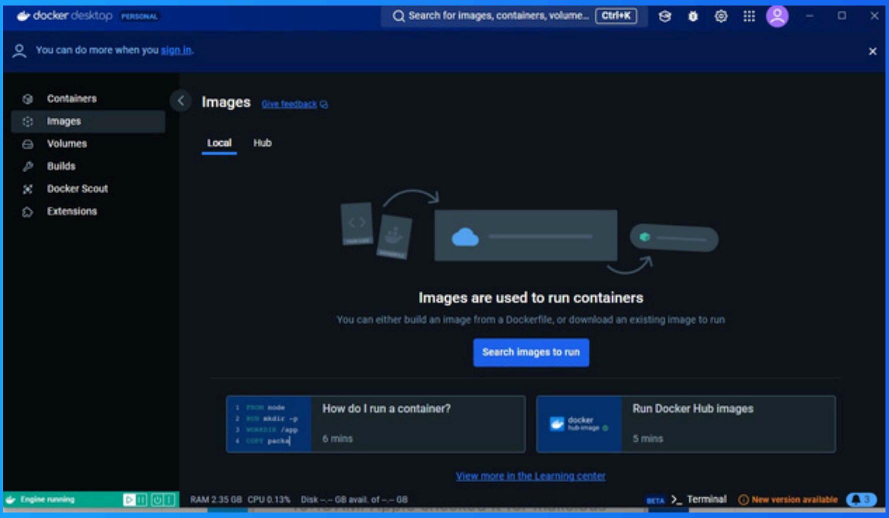
Containers on Elastic Beanstalk

Kanika Mathur
github.com/KanikaGenesis



You can do more when you sign in.

Images are used to run containers

You can either build an image from a Dockerfile, or download an existing image to run

```
FROM node
RUN mkdir -p
WORKDIR /app
COPY packa
```

Introducing Today's Project!

What is Docker?

Containers package up our application and everything it needs to run in one file. Docker helps you create, manage, and deploy these containers efficiently. In this project, I used docker to create containers on container images and set up my own container image.

One thing I didn't expect...

One thing I didn't expect was how quick it was to deploy an application using Elastic Beanstalk.

This project took me...

This project took me around 2 and half hours including documentation.

Understanding Containers and Docker

Containers

Containers are tools for packaging applications in a way that is easy for developers to run. They are useful because they allow developers/ engineers working in a team to share their work more efficiently!

A container image is a template/ blueprint for creating containers. Containers created from the same container image will behave in the same way, which helps developers in the team to have a unified experience when they are running the application.

Docker

Docker is a platform for creating and managing data. Docker makes working with containers easy. Docker Desktop is a software for using/ interacting with Docker itself easy.

The Docker daemon is like the 'engine' for Docker. It receives commands we send through clients, e.g., clients in the Docker Desktop or text commands sent in the terminal, and actually creates/ manages/controls the container.

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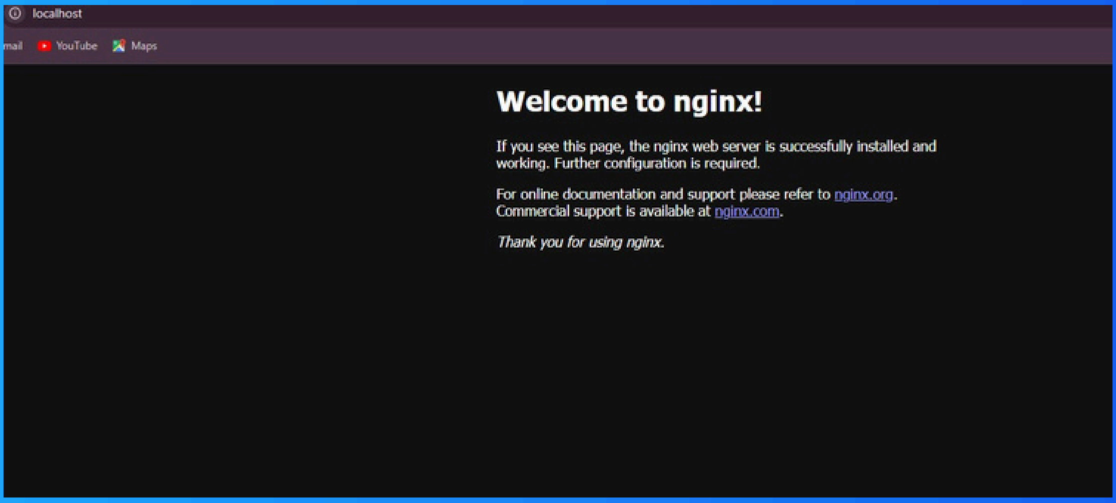
Running an Nginx Image

Nginx is a web server/software that helps serve web content. It is often referred to as a proxy server, which means it helps distribute traffic to your application across the instances running your application.

The command to start a new container was docker run. I also set the flags '-d - p 80:80 nginx', which means we are running the container in the background (- d) and matching port 80 in our host computer to the container's port 80 (-p 80:80).



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

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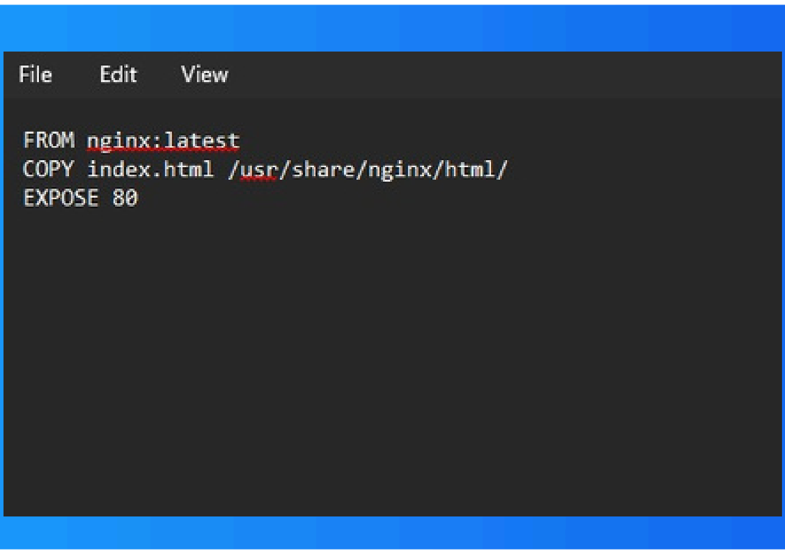
Creating a Custom Image

The Dockerfile is a set of instructions that tells how to build your custom container image.

My Dockerfile tells Docker three things. First, my custom container image uses the latest version of the Nginx container image at its base. Then, I am modifying this base by replacing the Nginx welcome page with my own custom index.html.

The command I used to build a custom image with my Dockerfile was `docker build`. The '.' at the end of the command means it tells Docker to find the Dockerfile in the current directory, i.e. the Compute folder on the desktop.

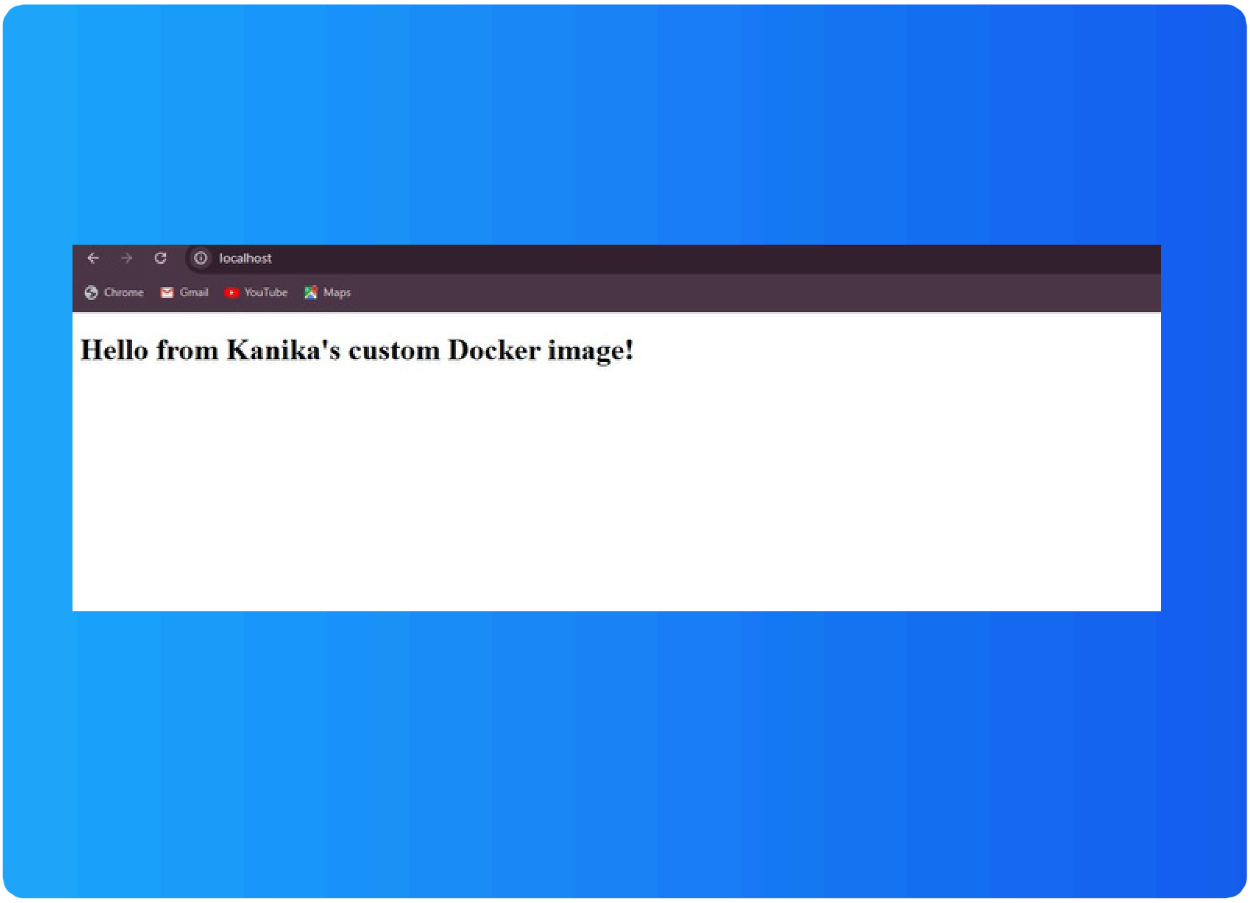


```
FROM nginx:latest
COPY index.html /usr/share/nginx/html/
EXPOSE 80
```

Running My Custom Image

There was an error when I ran my custom image because I tried to map my port 80 with the new container's port 80, but a running container was already using it. I resolved this by stopping the running container so that we could start the new one.

In this example, the container image is the template for creating a new container running an Nginx server that serves our custom index.html file. The container is the actual software running an Nginx web server with those customizations.

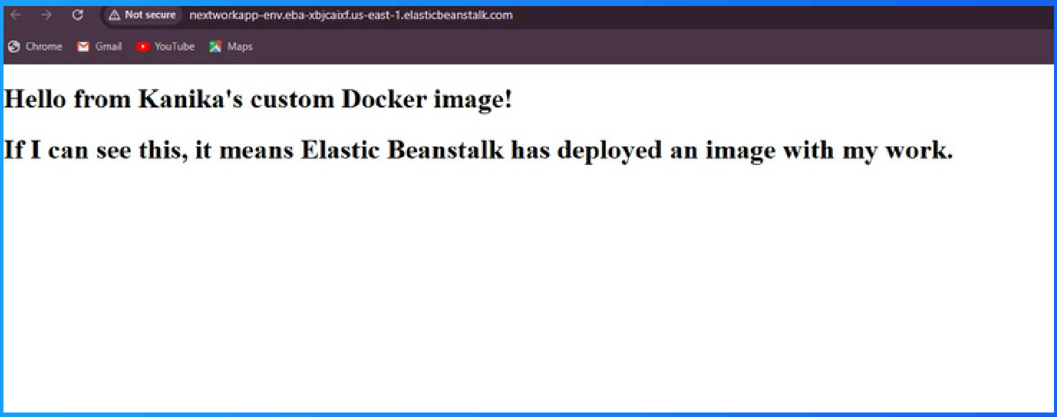


Hello from Kanika's custom Docker image!

Elastic Beanstalk

Elastic Beanstalk is an AWS service that helps with deploying applications in the cloud. It abstracts away a lot of work with setting up cloud infrastructure when deploying applications.

Deploying my custom image with Elastic Beanstalk took me 10 minutes. This includes the time it took to launch the Elastic Beanstalk application.



Hello from Kanika's custom Docker image!

If I can see this, it means Elastic Beanstalk has deployed an image with my work.

Everyone should be in a job they love.

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