Lab: NGINX Docker with Environment Variables

# Overview

In this lab, you will build a Docker image based on the official NGINX image. The image will inject environment variables into an HTML page, and display it on the default NGINX homepage.

# Project Structure

nginx-env-demo/  
├── Dockerfile  
├── entrypoint.sh  
├── index.html.template

# Dockerfile

Create a file named Dockerfile with the following content:

FROM nginx:alpine  
  
COPY index.html.template /usr/share/nginx/html/index.html.template  
COPY entrypoint.sh /docker-entrypoint.d/entrypoint.sh  
  
RUN chmod +x /docker-entrypoint.d/entrypoint.sh  
  
EXPOSE 80

# entrypoint.sh

Create a file named entrypoint.sh with the following content:

#!/bin/sh  
set -e  
  
# Replace the placeholder with the environment variable  
envsubst '${WELCOME\_MSG} ${ENV}' < /usr/share/nginx/html/index.html.template > /usr/share/nginx/html/index.html

# index.html.template

Create a file named index.html.template with the following content:

<!DOCTYPE html>  
<html>  
<head>  
 <title>Welcome to NGINX</title>  
</head>  
<body>  
 <h1>${WELCOME\_MSG}</h1>  
 <p>Environment: ${ENV}</p>  
</body>  
</html>

# Build and Run the Docker Image

Build the Docker image:

docker build -t nginx-env-demo .

Run the container with environment variables:

docker run -d -p 8080:80 -e WELCOME\_MSG="Hello from Dockerized NGINX!" -e ENV="Production" nginx-env-demo

# Kubernetes Pod YAML

Create a file named `nginx-env-demo-pod.yaml` with the following content:

apiVersion: v1  
kind: Pod  
metadata:  
 name: nginx-env-demo  
 labels:  
 app: nginx-env-demo  
spec:  
 containers:  
 - name: nginx  
 image: nginx-env-demo:latest  
 ports:  
 - containerPort: 80  
 env:  
 - name: WELCOME\_MSG  
 value: "Hello from Kubernetes NGINX!"  
 - name: ENV  
 value: "Staging"

# Kubernetes Service YAML

Create a file named `nginx-env-demo-service.yaml` with the following content to expose the pod:

apiVersion: v1  
kind: Service  
metadata:  
 name: nginx-env-service  
spec:  
 type: NodePort  
 selector:  
 app: nginx-env-demo  
 ports:  
 - protocol: TCP  
 port: 80  
 targetPort: 80  
 nodePort: 30080