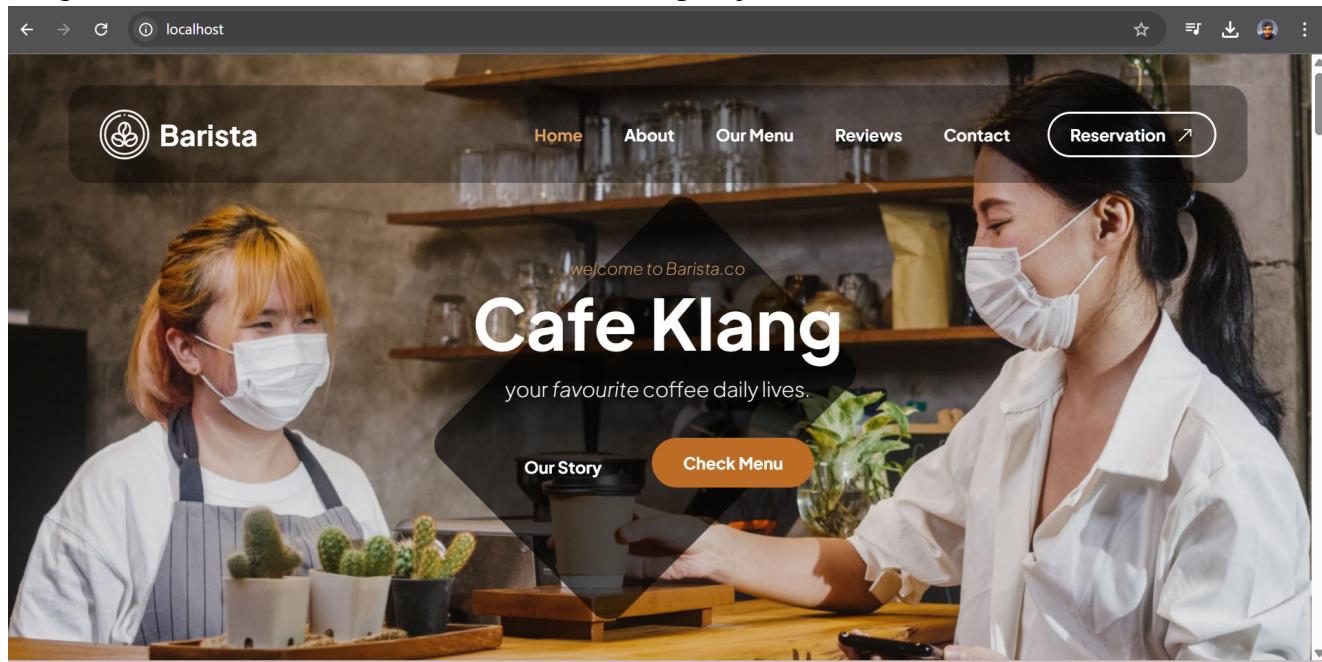


# Barista Cafe - Dockerized Static Website Deployment to AWS EKS

## Overview

This repository contains a static website (Barista Cafe) that is served using **Nginx** within a Docker container. The project is configured to be built and deployed to **AWS Elastic Kubernetes Service (EKS)** using **GitHub Actions** and **AWS Elastic Container Registry (ECR)**.



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

=> [internal] load build context
=> -> transferring context: 16.47MB
=> CACHED [2/4] WORKDIR /usr/share/nginx/html
=> CACHED [3/4] RUN rm -rf ./*
=> [4/4] COPY . /usr/share/nginx/html
=> exporting to image
=> -> exporting layers
=> -> exporting manifest sha256:05d4c2c63f5fbcd1f49043e12d2a1b71a1f9359be3543f895b9ed8b0e1b0ca0
=> -> exporting config sha256:d0436c84881c7317d4e162e20da0e18a43895cc24b4fc0ee955bb1037763b2cd
=> -> exporting attestation manifest sha256:35278addfe6faabab9a93358c3c773352a1c9c8f5ec2acdc0ce45ad0a1cce6
=> -> exporting manifest list sha256:496407bf91ff1f126356e82d421e9d8a4ad3c8e55aa612a8a16f47742f85bb39c
=> -> naming to docker.io/library/barista_cafe:latest
=> -> unpacking to docker.io/library/barista_cafe:latest

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/swu23vk85eb220m5j198tecdm
PS C:\Users\user\OneDrive - Netweb Technologies India Ltd\Documents\Important Document\My Document\Toothplate_project\2137_barista_cafe> docker run -d -p 80:80 barista_cafe
2ef3bd47cbfc5bba8b15962b3a3a82b9a491ce86a95bc69245c34c648828403
PS C:\Users\user\OneDrive - Netweb Technologies India Ltd\Documents\Important Document\My Document\Toothplate_project\2137_barista_cafe> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
2ef3bd47cbfc barista_cafe "/docker-entrypoint..." 47 seconds ago Up 46 seconds 0.0.0.0:80->80/tcp nostalgic_williams
PS C:\Users\user\OneDrive - Netweb Technologies India Ltd\Documents\Important Document\My Document\Toothplate_project\2137_barista_cafe>
```

## Features

- **Dockerized Static Website:** Uses Nginx to serve static content.
- **AWS ECR for Image Storage:** Stores the Docker image in AWS Elastic Container Registry.
- **AWS EKS for Deployment:** Runs the website on Kubernetes.
- **GitHub Actions for CI/CD:** Automates the build and deployment process.

## Folder Structure

```
2137_BARISTA_CAFE
├── css
├── fonts
├── images
├── js
├── videos
├── index.html
├── reservation.html
└── Dockerfile
└── ABOUT THIS TEMPLATE.txt
```

## 1 Testing Locally with Docker

### Step 1: Clone the Repository

```
git clone https://github.com/your-repository.git
cd your-repository
```

### Step 2: Build the Docker Image

```
docker build -t barista_cafe .
```

### Step 3: Run the Docker Container Locally (Optional)

```
docker run -d -p 80:80 --name barista_cafe barista_cafe
```

Access the website at <http://localhost/>.

## 2 Automated Deployment with GitHub Actions

### Prerequisites

1. AWS account and cli
2. Docker
3. Eksctl
4. GitHub Account

Let's begin by setting up all the necessary resources: (<https://github.com/tssundarraj/Barista-Cafe--->

## Step 4: Push the Image to AWS ECR

### 1. Authenticate Docker with AWS ECR

```
aws ecr get-login-password --region us-east-1 | docker login --username AWS --password-stdin <AWS_ACCOUNT_ID>.dkr.ecr.us-east-1.amazonaws.com
```

### 2. Create an ECR Repository (if not already created)

```
aws ecr create-repository --repository-name barista-cafe
```

### 3. Tag and Push the Image to ECR

```
ACCOUNT_ID=$(aws sts get-caller-identity --query "Account" --output text)  
IMAGE_URI="$ACCOUNT_ID.dkr.ecr.us-east-1.amazonaws.com/barista-cafe:latest"  
docker tag barista_cafe $IMAGE_URI  
docker push $IMAGE_URI
```

## Step 5: Deploy to AWS EKS

### 1. Update kubeconfig to access EKS Cluster

```
aws eks update-kubeconfig --region us-east-1 --name my-eks-cluster
```

### 2. Deploy to Kubernetes

```
kubectl set image deployment/nginx-deployment nginx=$IMAGE_URI -n default  
kubectl rollout status deployment/nginx-deployment -n default
```

## GitHub Actions Workflow

### GitHub Secrets Required

Go to [Settings > Secrets and Variables > Actions](#) and add:

- [AWS\\_ACCESS\\_KEY\\_ID](#)

- `AWS_SECRET_ACCESS_KEY`
- `AWS_REGION` (e.g., `us-east-1`)
- `ECR_REPOSITORY` (e.g., `barista-cafe`)

## GitHub Actions Workflow File (`.github/workflows/deploy.yml`)

```

name: Deploy to EKS

on:
  push:
    branches:
      - main # Trigger workflow when code is pushed to main

env:
  AWS_REGION: us-east-1 # Change this to your AWS region
  ECR_REPOSITORY: barista-cafe # Your ECR repo name
  CLUSTER_NAME: my-eks-cluster # Your EKS cluster name
  DEPLOYMENT_NAME: nginx-deployment # Your Kubernetes deployment name
  IMAGE_TAG: latest # Image tag to use

jobs:
  build-and-push:
    name: Build & Push Docker Image to ECR
    runs-on: ubuntu-latest

    steps:
      - name: Checkout Code
        uses: actions/checkout@v4

      - name: Configure AWS Credentials
        uses: aws-actions/configure-aws-credentials@v2
        with:
          aws-access-key-id: ${{ secrets.AWS_ACCESS_KEY_ID }}
          aws-secret-access-key: ${{ secrets.AWS_SECRET_ACCESS_KEY }}
          aws-region: ${{ env.AWS_REGION }}

      - name: Login to Amazon ECR
        id: login-ecr
        run:
          aws ecr get-login-password --region $AWS_REGION | docker login --username AWS --password-stdin $(aws sts get-caller-identity --query "Account" --output text).dkr.ecr.$AWS_REGION.amazonaws.com

      - name: Build & Tag Docker Image
        run:
          ACCOUNT_ID=$(aws sts get-caller-identity --query "Account" --output text)

          IMAGE_URI="$ACCOUNT_ID.dkr.ecr.$AWS_REGION.amazonaws.com/$ECR_REPOSITORY:$IMAGE_TAG"
          docker build -t $IMAGE_URI .

```

```

        docker push $IMAGE_URI
        echo "IMAGE_URI=$IMAGE_URI" >> $GITHUB_ENV

deploy:
  name: Deploy to EKS
  runs-on: ubuntu-latest
  needs: build-and-push

  steps:
    - name: Configure AWS Credentials
      uses: aws-actions/configure-aws-credentials@v2
      with:
        aws-access-key-id: ${{ secrets.AWS_ACCESS_KEY_ID }}
        aws-secret-access-key: ${{ secrets.AWS_SECRET_ACCESS_KEY }}
        aws-region: ${{ env.AWS_REGION }}

    - name: Update kubeconfig
      run: |
        aws eks update-kubeconfig --region $AWS_REGION --name $CLUSTER_NAME

    - name: Deploy to EKS
      run: |
        kubectl set image deployment/$DEPLOYMENT_NAME nginx=$IMAGE_URI -n
default
        kubectl rollout status deployment/$DEPLOYMENT_NAME -n default

```

## Accessing the Deployed Website

Once deployed, you can access the website using the external URL of the **LoadBalancer** service:

```
kubectl get svc -n default
```

Copy the **EXTERNAL-IP** and open it in your browser.

## Cleanup

To delete the deployment from EKS:

```
kubectl delete deployment nginx-deployment -n default
```

To delete the ECR repository:

```
aws ecr delete-repository --repository-name barista-cafe --force
```

To delete the EKS cluster:

```
eksctl delete cluster --name my-eks-cluster
```

---

## Conclusion

This setup automates the deployment of a static website using **Docker, AWS ECR, EKS, and GitHub**

**Actions.** The process ensures seamless CI/CD while hosting the website on a scalable Kubernetes environment.

 **Happy Deploying!**