

Setup CI/CD Pipeline for UI App using GitHub Actions

Before proceeding the Pipeline: make sure your application is currently being hosted on S3 bucket using **Cloud-Front**, and your code has been moved to GitHub.

- ⇒ Create a **GitHub** Action workflow within the folder where your app is located in folder **.github/workflows/build-and-deploy.yaml** (you can give any name as you like for **build-and-deploy.yaml**)
- ⇒ In this YAML file, configure all the required configurations as shown below.

.github/workflows/build-and-deploy.yaml

- ⇒ In this YAML file, configure all the required configurations as shown below.
- ⇒ This is for Bootstrap, Html javascript and css

```
---
name: Build and Deploy UI App to CloudFront
on:
  push:
    branches: [ main ]
jobs:
  build-and-deploy:
    name: Build and Deploy
    runs-on: ubuntu-latest
    env:
      BUCKET: www.esmelealelem.com
      DIST: ./
      REGION: us-east-1
      DIST_ID: E1AE44E6CJ86JT
    steps:
      - name: Checkout code
        uses: actions/checkout@v2
      - name: Configure AWS Credentials
```

```

- name: Configure AWS Credentials
  uses: aws-actions/configure-aws-credentials@v1
  with:
    aws-access-key-id: ${ secrets.AWS_ACCESS_KEY_ID }
    aws-secret-access-key: ${ secrets.AWS_SECRET_ACCESS_KEY }
    aws-region: ${ env.REGION }

# - name: Set up Node.js environment
#   uses: actions/setup-node@v2
#   with:
#     node-version: '14'

# - name: Install Dependencies
#   run: |
#     node --version
#     npm install

# - name: Build Static Website
#   # run: npm run build

```

```

# - name: Build Static Website
#   # run: npm run build

- name: Copy files to the production website with the AWS CLI
  run: |
    aws s3 sync --delete ${ env.DIST } s3://${ env.BUCKET }







- name: Copy files to the production website with the AWS CLI
  run: |
    aws cloudfront create-invalidation \
      --distribution-id ${ env.DIST_ID } \
      --paths "/*"

```











To allow GitHub Actions to upload files to S3 and create invalidation in CloudFront, it is necessary to generate a new IAM user and assign the necessary authorizations. We should make a policy like below.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "ListObjectsInBucket",
      "Effect": "Allow",
      "Action": "s3:ListBucket",
      "Resource": "<your bucket arn>"
    },
    {
      "Sid": "AllObjectActions",
      "Effect": "Allow",
      "Action": "s3:*Object",
      "Resource": "<your bucket arn>/*"
    },
    {
      "Sid": "InvalidateCF",
      "Effect": "Allow",
      "Action": "cloudfront:CreateInvalidation",
      "Resource": "*"
    }
  ]
}
```

- Create a new user with the name "github-actions" and attach the policy specified above to it.
- Navigate to the GitHub repository and set up two secrets, namely **AWS_ACCESS_KEY_ID** and **AWS_SECRET_ACCESS_KEY**.
- These secrets will be used to authenticate and authorize GitHub actions that require access to your Amazon Web Services (AWS) account.

Repository secrets		
 AWS_ACCESS_KEY_ID	Updated 2 hours ago	 
 AWS_SECRET_ACCESS_KEY	Updated 2 hours ago	 

The Continuous Integration/Continuous Deployment(CI/CD) pipeline has been successfully set up and you can verify its functionality by making changes to the source code. After committing and pushing the changes, the pipeline will be triggered, and you can observe the process in GitHub Actions.

Build and Deploy		
succeeded 1 hour ago in 11s		
Q Search logs		 
> 	Set up job	2s
> 	Checkout code	2s
> 	Configure AWS Credentials	0s
> 	Copy files to the production website with the AWS CLI	4s
> 	Copy files to the production website with the AWS CLI	1s
> 	Post Configure AWS Credentials	0s
> 	Post Checkout code	0s
> 	Complete job	0s

Prepared By:Esmelealem Mihretu - March 2023, MIU



Developer push code



GitHub

Setup github action to
deploy code to AWS

