

Documentation for CI/CD Pipeline to Deploy AWS Lambda Using GitHub Actions (DFH-BackEnd)

This YAML script automates the deployment of a serverless application using Serverless Framework when changes are pushed to the `stage`, `dev`, or `test` branches in GitHub. It sets up Node.js, installs dependencies, configures AWS credentials securely via GitHub Secrets, and deploys the application using Serverless Framework. This ensures consistent and automated deployment of the serverless application on AWS Lambda and related services in the `us-east-1` region.

1. Set Up AWS IAM User

1. Sign in to the AWS Management Console and open the IAM console.
2. Navigate to Users > Add user.
3. Enter user details:
 - o User name: your-username
 - o Select Programmatic access.
4. Permissions:
 - o Select Attach existing policies directly.
 - o Search for AmazonLambdaFullAccess and check it.
5. Review and create the user. Note down the Access key ID and Secret access key.

2. Add AWS Credentials to GitHub Secrets

1. Go to GitHub repository > Settings > Secrets and variables > Actions.
2. Add secrets:
 - o AWS_ACCESS_KEY_ID: Your AWS Access key ID
 - o AWS_SECRET_ACCESS_KEY: Your AWS Secret access key

3. Create a New Branch for Staging

1. Go to your GitHub repository.
2. Create new branch: Type stage and press Enter.

4. Set Up GitHub Actions Workflow

1. Create folder: .github/workflows in your repository.
2. Create file: deploy-lambda.yml in the workflows folder.

5. Add Deployment Workflow.

```
1. name: Deploy Lambda
2.
3. on:
4.   push: # Trigger on push events
5.     branches:
6.       - stage
7.       - dev
8.       - test
9.
10. jobs:
11.   deploy:
12.     name: deploy
13.     runs-on: ubuntu-latest
14.     strategy:
15.       matrix:
16.         node-version: [18.x]
17.
18.     steps:
19.       - uses: actions/checkout@v3
```

```
20.
21.     - name: Use Node.js ${{ matrix.node-version }}
22.       uses: actions/setup-node@v3
23.       with:
24.         node-version: ${{ matrix.node-version }}
25.
26.     - name: Set AWS Credentials
27.       run: |
28.         aws configure set aws_access_key_id ${{ secrets.AWS_ACCESS_KEY_ID }}
29.         aws configure set aws_secret_access_key ${{
secrets.AWS_SECRET_ACCESS_KEY }}
30.         aws configure set default.region us-east-1
31.
32.     - run: | # Step to navigate to backend-service directory and install dependencies
33.         cd backend-service/
34.         npm install
35.
36.     - name: Install Serverless Framework
37.       run: npm install -g serverless
38.
39.     - name: serverless deploy # Step to deploy using Serverless Framework
40.       run : |
41.         cd backend-service/
42.         serverless deploy
43.
44.     env:
45.       AWS_ACCESS_KEY_ID: ${{ secrets.AWS_ACCESS_KEY_ID }}
46.       AWS_SECRET_ACCESS_KEY: ${{ secrets.AWS_SECRET_ACCESS_KEY }}
```

