

AWS CDK code for Continuous deployment pipeline on AWS for Lambda canary deployment with alias traffic shifting for the application code hosted on Github/CodeCommit.

Workaround for integration between CodePipeline and CodeDeploy Lambda Deployments which is currently unsupported.

What problem does the artifact solve?

Problem statement:

- With AWS Lambda deployment, after we update our code, new requests to our function will be processed using the updated code. Newly deployed code may contain unidentified bugs which can impact the users.
- CodePipeline only supports ZIP/TAR/TGZ as the bundle type, and CodeDeploy requires the bundle to be YAML or JSON for a Lambda deployment. Hence, CodePipeline does not support CodeDeploy Lambda Deployments.

Solution:

- Canary deployments help us in these situations. This pipeline will run on every commit to main branch of your configured Github/CodeCommit repository and then automatically deploy the code to Lambda Function by creating a new version.
- Alias Traffic Shifting using CodeDeploy (Canary deployment) to release the app code to an initial subset of user and eventually to all users
- To make CodePipeline support CodeDeploy Lambda Deployment, CodeBuild is used to deploy to lambda version and create an appspec.yaml file which will be consumed by CodeDeploy in our pipeline.

Pipeline in CodePipeline will look like:

Source (Github/CodeCommit) → CodeBuild → CodeDeploy

Code is hosted at <https://gitlab.aws.dev/baigmohd/cdk-project>

Pre-requisites:

1. Lambda function must pre-exist
2. Atleast one version of this Lambda must be published.

Usage:

1. Give the already existing Lambda name and ARN in file "Constants.java"
2. Create a package using command "mvn package"
3. Deploy the solution using command "cdk deploy"
4. Update the already existing Lambda to make the alias "prod" point to your latest version of Lambda.
5. Go to CodeCommit and update the code on "main" branch.
6. Pipeline will run automatically as soon as the commit is made, and will deploy the code to your Lambda function via Alias traffic shifting Canary deployment.

Who is the audience?

Developers/Engineers who host their application code on Github/CodeCommit

Services that we will be using:

Lambda, CodeBuild, CodeDeploy, CodePipeline
Complete setup will be deployed via AWS CDK