

## AWS CodePipeline (CI / CD) Tutorial with CDK

Be A Better Dev  
177K subscribers

Subscribe

1.2K



Share

Download

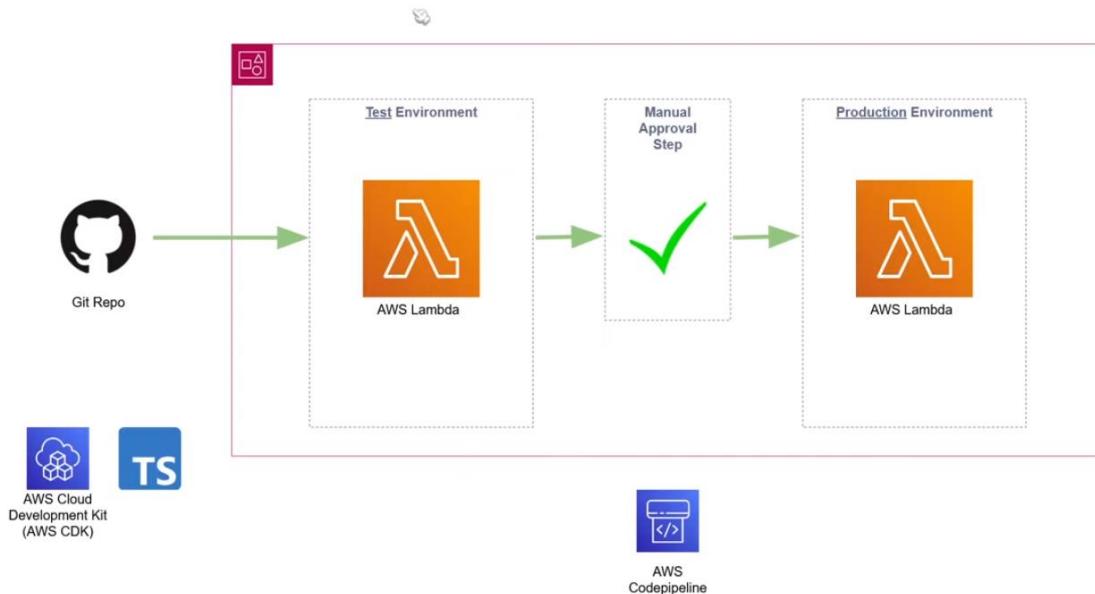
Thanks

...

65,634 views Feb 7, 2022 AWS DevOps Playlist - Must Know Services

CodePipeline is a popular Continuous Integration (CI) and Continuous Delivery (CD) tool on AWS. In this tutorial, I show you how to setup a CI / CD pipeline using CodePipeline, CDK and TypeScript. We set up two stages, test and prod. I show you how to structure your CDK code to deploy two different lambda functions. In upcoming videos, I'll show you how to add unit testing to your pipeline to ensure application health prior to deployment.

# Deployment Pipeline



When you commit the CDK code to the GitHub repo, it will deploy to the Test environment, then a manual approval to get it to the Production environment.

The screenshot shows a GitHub repository page for "ci-cd-aws-pipeline-demo". The repository is public, has 2 stars, 26 forks, and 7 watchers. It contains 1 branch ("main") and 0 tags. The repository was created by "beabetterdevv" on Feb 12, 2022, with 23 commits. The commit history includes:

File	Message	Date
bin	added	2 years ago
lib	Shellstep update for Unit Tests	last year
test	Testing adding test shellstep	last year
.gitignore	initial commit	2 years ago
.npmignore	initial commit	2 years ago
README.md	initial commit	2 years ago
buildspec.yml	Testing buildspec	last year
cdk.json	initial commit	2 years ago
jest.config.js	Testing buildspec	last year
package-lock.json	Testing buildspec	last year
package.json	Testing buildspec	last year
tsconfig.json	initial commit	2 years ago

The repository has no releases or packages published. The languages used are TypeScript (82.5%) and JavaScript (17.5%).

<https://github.com/beabetterdevv/ci-cd-aws-pipeline-demo>

File Edit Selection View Go Run Terminal Help instructions - ci-cd-aws-pipeline-demo - Visual Studio Code

EXPLORER ... ⚡ instructions X

C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> Pre-Reqs

1) CDK  
2) NPM  
3) A Github repository

1. Run this command  
2. Create github repo - mine is <https://github.com/beabetterdevv/ci-cd-aws-pipeline-demo.git>  
3. Clone your repo onto local - git clone https://github.com/beabetterdevv/ci-cd-aws-pipeline-demo.git ci-cd-aws-pipeline-demo

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> cdk init app --language typescript  
Applying project template app for typescript  
# Welcome to your CDK TypeScript project!

This is a blank project for TypeScript development with CDK.

The 'cdk.json' file tells the CDK Toolkit how to execute your app.

## Useful commands

\* 'npm run build' compile typescript to js  
\* 'npm run watch' watch for changes and compile  
\* 'npm run test' perform the jest unit tests  
\* 'cdk deploy' deploy this stack to your default AWS account/region  
\* 'cdk diff' compare deployed stack with current state  
\* 'cdk synth' emits the synthesized CloudFormation template

Executing npm install...  
[#.....] \ fetchMetadata: sill install loadAllDepsIntoIdealTree

File Edit Selection View Go Run Terminal Help instructions - ci-cd-aws-pipeline-demo - Visual Studio Code

EXPLORER ... ⚡ instructions X

C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> Pre-Reqs

1) CDK  
2) NPM  
3) A Github repository

1. Run this command  
2. Create github repo - mine is <https://github.com/beabetterdevv/ci-cd-aws-pipeline-demo.git>  
3. Clone your repo onto local - git clone https://github.com/beabetterdevv/ci-cd-aws-pipeline-demo.git ci-cd-aws-pipeline-demo

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

Executing npm install...  
npm WARN deprecated resolve-url@0.2.1: https://github.com/lydell/resolve-url#deprecated  
npm WARN deprecated urix@0.1.0: Please see https://github.com/lydell/urix#deprecated  
npm notice created a lockfile as package-lock.json. You should commit this file.  
npm WARN notsup Unsupported engine for aws-cdk-lib@2.9.0: wanted: {"node":">= 14.15.0"} (current: {"node":"12.18.0","npm":"6.14.10"})  
npm WARN notsup Not compatible with your version of node/npm: aws-cdk-lib@2.9.0  
npm WARN notsup Unsupported engine for aws-cdk@2.9.0: wanted: {"node":">= 14.15.0"} (current: {"node":"12.18.0","npm":"6.14.10"})  
npm WARN notsup Not compatible with your version of node/npm: aws-cdk@2.9.0  
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.1.2 (node\_modules\jest-haste-map\node\_modules\fsevents):  
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.3.2: wanted {"os":"darwin","arch":"any"}  
(current: {"os":"win32","arch":"x64"})  
npm WARN ci-cd-aws-pipeline-demo@0.1.0 No repository field.  
npm WARN ci-cd-aws-pipeline-demo@0.1.0 No license field.

>All done!

PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo>

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help
- Title Bar:** instructions - ci-cd-aws-pipeline-demo - Visual Studio Code
- Explorer:** Shows the project structure under CI-CD-AWS-PIPELINE-DEMO, including bin, lib, node\_modules, test, .gitignore, .npmignore, cdk.json, jest.config.js, and package.json.
- Editor:** The package.json file is open, showing code related to AWS CDK and NPM. A tooltip indicates the file is untracked.
- Terminal:** The terminal shows the output of the npm install command, which includes several WARN messages about deprecated packages like resolve-url@0.2.1 and urix@0.1.0, and optional dependencies like fsevents@2.1.2.
- Status Bar:** Shows the current directory as C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> and a PowerShell icon.
- Bottom Bar:** Includes Timeline and NPM Scripts buttons.

Delete your **package-lock.json** file because it has a version lock on the [cdk@2.9.0](#) version which we cannot use.

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help
- Title Bar:** package.json - ci-cd-aws-pipeline-demo - Visual Studio Code
- Explorer:** Shows the project structure under CI-CD-AWS-PIPELINE-DEMO, including bin, lib, node\_modules, test, .gitignore, .npmignore, cdk.json, jest.config.js, and package.json.
- Editor:** The package.json file is open, showing the "dependencies" section where the "aws-cdk-lib" dependency is explicitly set to "2.9.0".
- Status Bar:** Shows the current directory as C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo>.

Then update your cdk libraries to the 2.8.0 version as below

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help
- Title Bar:** package.json - ci-cd-aws-pipeline-demo - Visual Studio Code
- Explorer:** Shows the project structure under CI-CD-AWS-PIPELINE-DEMO, including bin, lib, node\_modules, test, .gitignore, .npmignore, cdk.json, jest.config.js, and package.json.
- Editor:** The package.json file is open, showing the "dependencies" section where the "aws-cdk-lib" dependency is explicitly set to "2.8.0".
- Status Bar:** Shows the current directory as C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo>.

https://github.com/beabetterdev/ci-cd-aws-pipeline-demo/blob/main/package.json

The screenshot shows the GitHub interface for the repository 'ci-cd-aws-pipeline-demo'. The 'package.json' file is open. The code editor displays the following JSON content:

```

1  {
2    "name": "ci-cd-aws-pipeline-demo",
3    "version": "0.1.0",
4    "bin": {
5      "ci-cd-aws-pipeline-demo": "bin/ci-cd-aws-pipeline-demo.js"
6    },
7    "scripts": {
8      "build": "tsc",
9      "watch": "tsc -w",
10     "test": "jest",
11     "cdk": "cdk"
12   },
13   "devDependencies": {
14     "@types/jest": "^26.0.10",
15     "@types/node": "10.17.27",
16     "aws-cdk": "2.8.0",
17     "jest": "^26.4.2",
18     "jest-junit": "^13.0.0",
19     "ts-jest": "26.2.0",
20     "ts-node": "9.0.0",
21     "typescript": "3.9.7"
22   },
23   "dependencies": {
24     "aws-cdk-lib": "2.8.0",
25     "constructs": "10.0.0",
26     "source-map-support": "0.5.16"
27   }
28 }

```

PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> npm install

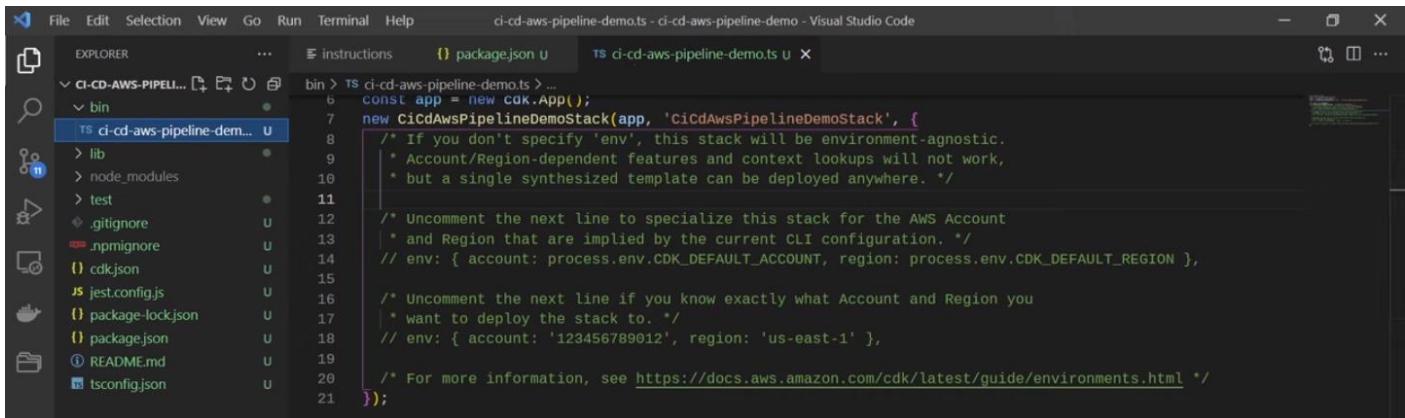
The screenshot shows Visual Studio Code with the 'package.json' file open in the editor. The terminal at the bottom shows the command 'npm install' being run in the directory 'C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo'. The output of the command is displayed in the terminal window:

```

All done!
PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> npm install
[...]
[preinstall:ci-cd-aws-pipeline-demo] info lifecycle ci-cd-aws-pipeline-demo@0.1.0-preinstall: ci-cd

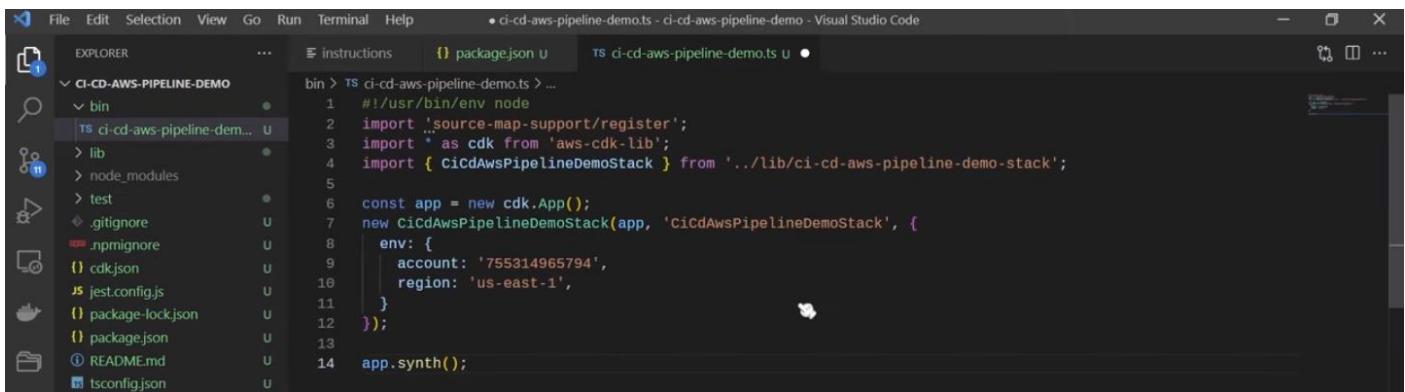
```

Now run the **npm install** command to generate a new **package-lock.json** file as above



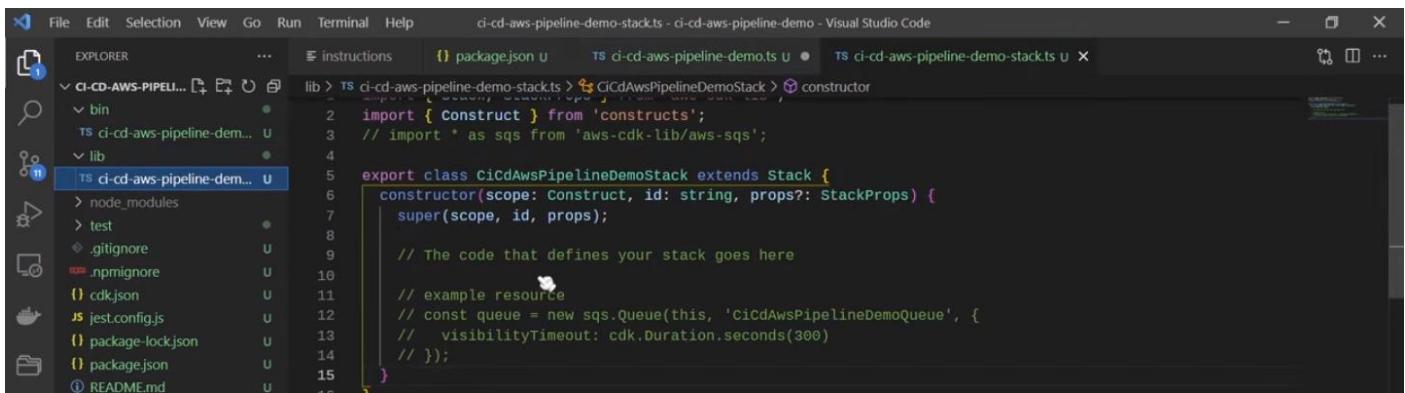
```
bin > ts ci-cd-aws-pipeline-demo.ts > ...
6   const app = new cdk.App();
7   new CiCdAwsPipelineDemoStack(app, 'CiCdAwsPipelineDemoStack', {
8     /* If you don't specify 'env', this stack will be environment-agnostic.
9      * Account/Region-dependent features and context lookups will not work,
10     * but a single synthesized template can be deployed anywhere. */
11    /*
12     * Uncomment the next line to specialize this stack for the AWS Account
13     * and Region that are implied by the current CLI configuration. */
14    // env: { account: process.env.CDK_DEFAULT_ACCOUNT, region: process.env.CDK_DEFAULT_REGION },
15    /*
16     * Uncomment the next line if you know exactly what Account and Region you
17     * want to deploy the stack to. */
18    // env: { account: '123456789012', region: 'us-east-1' },
19    /*
20     * For more information, see https://docs.aws.amazon.com/cdk/latest/guide/environments.html */
21  );
});
```

Open the file in your bin directory and replace the code as below with your AWS account and region values



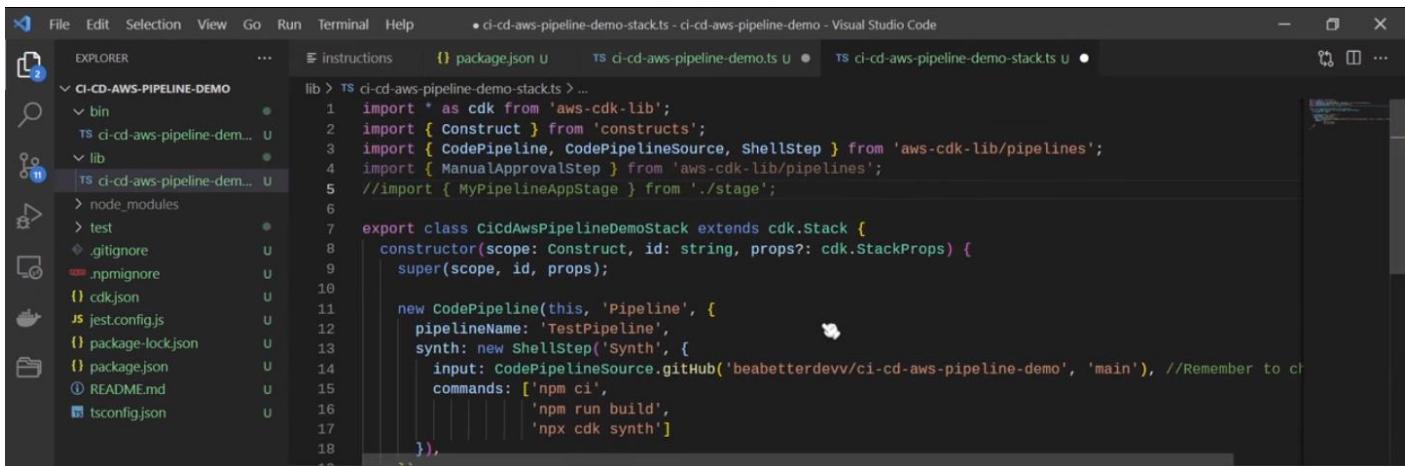
```
bin > ts ci-cd-aws-pipeline-demo.ts > ...
1  #!/usr/bin/env node
2  import '!source-map-support/register';
3  import * as cdk from 'aws-cdk-lib';
4  import { CiCdAwsPipelineDemoStack } from '../lib/ci-cd-aws-pipeline-demo-stack';
5
6  const app = new cdk.App();
7  new CiCdAwsPipelineDemoStack(app, 'CiCdAwsPipelineDemoStack', {
8    env: {
9      account: '755314965794',
10     region: 'us-east-1',
11   }
12 });
13
14 app.synth();
```

We are creating a new stack and the `app.synth()` method will then bootstrap the entire process for you



```
lib > ts ci-cd-aws-pipeline-demo-stack.ts > CiCdAwsPipelineDemoStack > constructor
1  import { Construct } from 'constructs';
2  // import * as sqs from 'aws-cdk-lib/aws-sqs';
3
4  export class CiCdAwsPipelineDemoStack extends Stack {
5    constructor(scope: Construct, id: string, props?: StackProps) {
6      super(scope, id, props);
7
8      // The code that defines your stack goes here
9
10     // example resource
11     // const queue = new sqs.Queue(this, 'CiCdAwsPipelineDemoQueue', {
12     //   visibilityTimeout: cdk.Duration.seconds(300)
13     // });
14   }
15 }
```

Replace the above to the below code



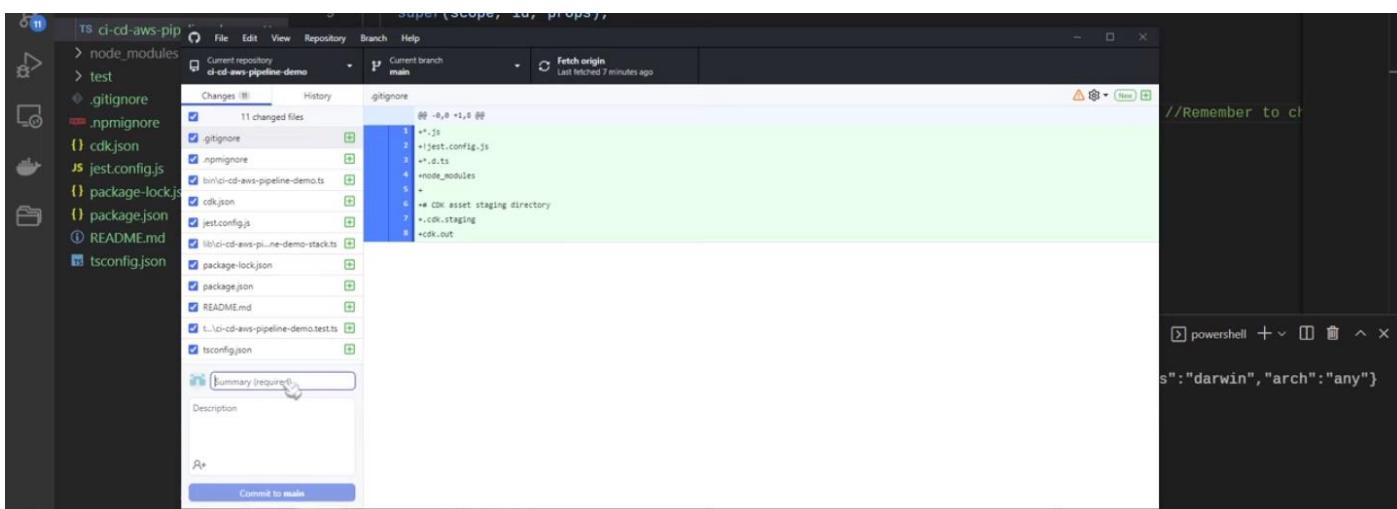
```
lib > ts ci-cd-aws-pipeline-demo-stack.ts > ...
1  import * as cdk from 'aws-cdk-lib';
2  import { Construct } from 'constructs';
3  import { CodePipeline, CodePipelineSource, ShellStep } from 'aws-cdk-lib/pipelines';
4  import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
5  //import { MyPipelineAppStage } from './stage';
6
7  export class CiCdAwsPipelineDemoStack extends cdk.Stack {
8    constructor(scope: Construct, id: string, props?: cdk.StackProps) {
9      super(scope, id, props);
10
11     new CodePipeline(this, 'Pipeline', {
12       pipelineName: 'TestPipeline',
13       synth: new ShellStep('Synth', {
14         input: CodePipelineSource.gitHub('beabetterdev/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this to your own repository
15         commands: ['npm ci',
16                   'npm run build',
17                   'npx cdk synth']
18       });
19   }
20 }
```

```

    lib > ts ci-cd-aws-pipeline-demo-stack.ts ...
    6
    7     export class CiCdAwsPipelineDemoStack extends cdk.Stack {
    8         constructor(scope: Construct, id: string, props?: cdk.StackProps) {
    9             super(scope, id, props);
   10
   11             new CodePipeline(this, 'Pipeline', {
   12                 pipelineName: 'TestPipeline',
   13                 synth: new ShellStep('Synth', {
   14                     input: CodePipelineSource.github('beabetterdevv/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this to your own repo
   15                     commands: ['npm ci',
   16                               'npm run build',
   17                               'npx cdk synth']
   18                 }),
   19             });
   20         }
   21     }

```

We are creating a new code pipeline which is a construct, we give it a name on 12, add a new shellstep on line 13 and point it to our GitHub repo on line 14. Then we supply the commands to run in the build step of the pipeline.



We then commit the code changes.

```

    lib > ts ci-cd-aws-pipeline-demo-stack.ts ...
    4     import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
    5     //import { MyPipelineAppStage } from './stage';
    6
    7     export class CiCdAwsPipelineDemoStack extends cdk.Stack {
    8         constructor(scope: Construct, id: string, props?: cdk.StackProps) {
    9             super(scope, id, props);
   10
   11             new CodePipeline(this, 'Pipeline', {
   12                 pipelineName: 'TestPipeline',
   13                 synth: new ShellStep('Synth', {
   14                     input: CodePipelineSource.github('beabetterdevv/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this to your own repo
   15                     commands: ['npm ci',
   16                               'npm run build',
   17                               'npx cdk synth']
   18                 }),
   19             });
   20         }
   21     }

```

A screenshot of a GitHub repository page for 'beabetterdev / ci-cd-aws-pipeline-demo'. The repository is public and contains 17 commits. The commit history shows an initial commit from 'beabetterdev' with various files like bin, lib, test, .gitignore, .npmignore, README.md, cdk.json, jest.config.js, package-lock.json, package.json, and tsconfig.json. The commit was made 5 minutes ago. The right sidebar shows basic repository statistics: 0 stars, 1 watching, 0 forks, and no releases or packages published.

We need to create an access token for AWS use from our GitHub code. We will then create a secret in AWS that contains the access token we got from our GitHub repo that the CDK and Code Pipeline can use.

A screenshot of the same GitHub repository page, but with a user profile sidebar open on the right. The sidebar shows the user 'beabetterdev' is signed in. It includes links for 'About', 'Profile', 'Releases', 'Packages', and 'Settings'. The 'Settings' link is highlighted with a blue background. Other settings options like 'Upgrade', 'Feature preview', and 'Help' are also visible.

github.com/settings/profile

Moderation

Code, planning, and automation

Repositories

Packages

Pages

Saved replies

Security

Code security and analysis

Integrations

Applications

Scheduled reminders

Archives

Security log

Sponsorship log

Developer settings

You can @mention other users and organizations to link to them.

URL

Twitter username

Company

You can @mention your company's GitHub organization to link it.

Location

All of the fields on this page are optional and can be deleted at any time, and by filling them out, you're giving us consent to share this data wherever your user profile appears. Please see our privacy statement to learn more about how we use this information.

Update profile

## Contributions

Include private contributions on my profile  
Get credit for all your work by showing the number of contributions to private repositories on your profile without any repository or organization information. Learn how we count contributions.

Update contributions

github.com/settings/apps

Search or jump to...

Pull requests Issues Marketplace Explore

Settings / Developer settings

GitHub Apps

OAuth Apps

Personal access tokens

New GitHub App

GitHub Apps

Want to build something that integrates with and extends GitHub? Register a new GitHub App to get started developing on the GitHub API. You can also read more about building GitHub Apps in our developer documentation.

© 2022 GitHub, Inc. Terms Privacy Security Status Docs Contact GitHub Pricing API Training Blog About

github.com/settings/tokens

Search or jump to...

Pull requests Issues Marketplace Explore

Settings / Developer settings

GitHub Apps

OAuth Apps

Personal access tokens

Personal access tokens

Generate new token Revoke all

Tokens you have generated that can be used to access the GitHub API.

AWS Access — admin:repo\_hook, repo Last used within the last week Delete

Expires on Mon, Feb 28 2022.

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to authenticate to the API over Basic Authentication.

github.com/settings/tokens/new

**New personal access token**

Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to authenticate to the API over Basic Authentication.

**Note**  
sfsfds

What's this token for?

**Expiration \***  
30 days The token will expire on Tue, Mar 1 2022

**Select scopes**  
Scopes define the access for personal tokens. [Read more about OAuth scopes](#).

<input checked="" type="checkbox"/> <b>repo</b>	Full control of private repositories
<input type="checkbox"/> <code>repo:status</code>	Access commit status
<input type="checkbox"/> <code>repo_deployment</code>	Access deployment status
<input type="checkbox"/> <code>public_repo</code>	Access public repositories
<input type="checkbox"/> <code>repo:invite</code>	Access repository invitations
<input type="checkbox"/> <code>security_events</code>	Read and write security events
<input type="checkbox"/> <b>workflow</b>	Update GitHub Action workflows
<input type="checkbox"/> <b>write:packages</b>	Upload packages to GitHub Package Registry
<input type="checkbox"/> <code>read:packages</code>	Download packages from GitHub Package Registry
<input type="checkbox"/> <b>delete:packages</b>	Delete packages from GitHub Package Registry
<input type="checkbox"/> <b>admin:org</b>	Full control of orgs and teams, read and write org projects
<input type="checkbox"/> <code>write:org</code>	Read and write org and team membership, read and write org projects
<input type="checkbox"/> <code>read:org</code>	Read org and team membership, read org projects
<input type="checkbox"/> <b>admin:public_key</b>	Full control of user public keys
<input type="checkbox"/> <code>write:public_key</code>	Write user public keys
<input type="checkbox"/> <code>read:public_key</code>	Read user public keys
<input checked="" type="checkbox"/> <b>admin:repo_hook</b>	Full control of repository hooks
<input type="checkbox"/> <code>write:repo_hook</code>	Write repository hooks
<input type="checkbox"/> <code>read:repo_hook</code>	Read repository hooks
<input type="checkbox"/> <b>admin:org_hook</b>	Full control of organization hooks
<input type="checkbox"/> <b>gist</b>	Create gists
<input type="checkbox"/> <b>notifications</b>	Access notifications

<input type="checkbox"/> <code>read:repo_hook</code>	Read repository hooks
<input type="checkbox"/> <b>admin:org_hook</b>	Full control of organization hooks
<input type="checkbox"/> <b>gist</b>	Create gists
<input type="checkbox"/> <b>notifications</b>	Access notifications
<input type="checkbox"/> <b>user</b>	Update ALL user data
<input type="checkbox"/> <code>read:user</code>	Read ALL user profile data
<input type="checkbox"/> <code>user:email</code>	Access user email addresses (read-only)
<input type="checkbox"/> <code>user:follow</code>	Follow and unfollow users
<input type="checkbox"/> <b>delete_repo</b>	Delete repositories
<input type="checkbox"/> <b>write:discussion</b>	Read and write team discussions
<input type="checkbox"/> <code>read:discussion</code>	Read team discussions
<input type="checkbox"/> <b>admin:enterprise</b>	Full control of enterprises
<input type="checkbox"/> <code>manage_runners:enterprise</code>	Manage enterprise runners and runner-groups
<input type="checkbox"/> <code>manage_billing:enterprise</code>	Read and write enterprise billing data
<input type="checkbox"/> <code>read:enterprise</code>	Read enterprise profile data
<input type="checkbox"/> <b>admin:gpg_key</b>	Full control of public user GPG keys (Developer Preview)
<input type="checkbox"/> <code>write:gpg_key</code>	Write public user GPG keys
<input type="checkbox"/> <code>read:gpg_key</code>	Read public user GPG keys

**Generate token** **Cancel**

You then copy the generated access token and go to the AWS console to create a secret

Console Home

Recently visited

- CloudFormation
- CodeBuild
- CodePipeline
- Secrets Manager
- Key Management Service
- CloudWatch
- IAM
- Simple Queue Service

Lambda

X-Ray

S3

DynamoDB

Step Functions

API Gateway

AWS Amplify

Welcome to AWS

Getting started with AWS

Training and certification

What's new with AWS?

AWS Health

Cost and usage

Services

Search results for 'secret'

Services (17)

Features (7)

Blogs (896)

Documentation (49,040)

Knowledge Articles (30)

Tutorials (2)

Events (31)

Marketplace (167)

Services

See all 17 results ▾

Secrets Manager

Easily rotate, manage, and retrieve secrets throughout their lifecycle

Top features

Secrets

IAM

Manage access to AWS resources

Systems Manager

AWS Systems Manager is a Central Place to View and Manage AWS Resources

Welcome to AWS

Getting started with AWS

Training and certification

What's new with AWS?

Services

Search for services, features, blogs, docs, and more

AWS Secrets Manager > Secrets

## Secrets

Secret name	Description	Last retrieved (UTC)
github-token	-	1/30/2022

Store a new secret

Services

Search for services, features, blogs, docs, and more

AWS Secrets Manager > Secrets

## Secrets

Secret name	Description	Last retrieved (UTC)
github-token	-	1/30/2022

Store a new secret

console.aws.amazon.com/secretsmanager/home?region=us-east-1#/newSecret?step=selectSecret

AWS Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia awssimplified\_user @ 7553-1496-5794

Step 1 Choose secret type Step 2 Configure secret Step 3 Configure rotation - optional Step 4 Review

### Store a new secret

**Secret type** Info

Credentials for Amazon RDS database  Credentials for Amazon DocumentDB database  Credentials for Amazon Redshift cluster  Credentials for other database API key, OAuth token, other.

**Key/value pairs** Info

Key/value **Plaintext**

yourTokenHere

**Encryption key** Info  
You can encrypt using the KMS key that Secrets Manager creates or a customer managed KMS key that you create.

console.aws.amazon.com/secretsmanager/home?region=us-east-1#/newSecret?step=selectName

AWS Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia awssimplified\_user @ 7553-1496-5794

Step 3 Configure secret Step 4 Review

### Secret name and description

**Secret name**  
A descriptive name that helps you find your secret later.  
prod/AppBeta/Mysql

Secret name must contain only alphanumeric characters and the characters /\_+=@-

**Description - optional**  
Access to MySQL prod database for my AppBeta

**Tags - optional**

Key Value - optional  
Enter key Enter value Remove Add

**Resource permissions - optional** Info  
Add or edit a resource policy to access secrets across AWS accounts. Edit permissions

**Replicate secret- optional**  
Create read-only replicas of your secret in other Regions. Replica secrets incur a charge. [Learn more](#) in the User Guide. **Replicate secret**

Secret name  
A descriptive name that helps you find your secret later.  
sdksfsd  
Secret name must contain only alphanumeric characters and the characters /\_+=.@[email]

Description - optional  
Access to MySQL prod database for my AppBeta  
Maximum 250 characters.

Tags - optional

Key	Value - optional
Enter key	Enter value
<a href="#">Remove</a>	
<a href="#">Add</a>	

Resource permissions - optional [Info](#)  
Add or edit a resource policy to access secrets across AWS accounts.  
[Edit permissions](#)

Replicate secret- optional  
Create read-only replicas of your secret in other Regions. Replica secrets incur a charge. [Learn more](#) in the User Guide.  
[Replicate secret](#)

Cancel Previous **Next**

The secret name should be **github-token** above

Secret name	Description	Last retrieved (UTC)
github-token	-	1/30/2022

[Store a new secret](#)

Create a secret called **github-token** as above. This is what the CDK will use when it handshakes the link between GitHub and AWS

```

File Edit Selection View Go Run Terminal Help ci-cd-aws-pipeline-demo-stack.ts - ci-cd-aws-pipeline-demo - Visual Studio Code
EXPLORER ci-cd-aws-pipeline-demo ...
instructions package.json TS ci-cd-aws-pipeline-demo.ts TS ci-cd-aws-pipeline-demo-stack.ts
lib > TS ci-cd-aws-pipeline-demo-stack.ts > CiCdAwsPipelineDemoStack > constructor > synth > commands
4 import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
5 //import { MyPipelineAppStage } from './stage';
6
7 export class CiCdAwsPipelineDemoStack extends cdk.Stack {
8   constructor(scope: Construct, id: string, props?: cdk.StackProps) {
9     super(scope, id, props);
10
11     new CodePipeline(this, 'Pipeline', {
12       pipelineName: 'TestPipeline',
13       synth: new ShellStep('Synth', {
14         input: CodePipelineSource.github('beabetterdevv/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this
15         commands: ['npm ci',
16                   'npm run build',
17                   'npx cdk synth']
18     }),
19   });
20 }
21

```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> **cdk deploy**

Make sure you commit the code changes into your GitHub repo, then run the **cdk deploy** command to create the initial version of our code pipeline

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo> cdk deploy
✖ Synthesis time: 7.67s

This deployment will make potentially sensitive changes according to your current security approval level (--require-approval broadening).
Please confirm you intend to make the following modifications:

IAM Statement Changes
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

This deployment will make potentially sensitive changes according to your current security approval level (--require-approval broadening).
Please confirm you intend to make the following modifications:

IAM Statement Changes
```

	Resource	Effect	Action	Principal	Condition
+	`\${Pipeline/Pipeline/ArtifactsBucket.Arn}` `\${Pipeline/Pipeline/ArtifactsBucket.Arn}/*` `\${Pipeline/Pipeline/ArtifactsBucket.Arn}/`	Deny	s3:"	AWS:*	"Bool": { "aws:SecureTransport": "false" }
	+	Allow	s3:Abort*	AWS:\${Pipeline/Pipeline}	

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

+ ${Pipeline/UpdatePipeline/SelfMutation/Role.Arn} Allow sts:AssumeRole Service:codebuild.amazonaws.com
+ * Allow cloudformation:DescribeStacks AWS:${Pipeline/UpdatePipeline/SelfMutation/Role}
+ * Allow s3>ListBucket AWS:${Pipeline/UpdatePipeline/SelfMutation/Role}
+ arn:${AWS::Partition}:codebuild:BatchPutCodeC Allow codebuild:BatchPutCodeC AWS:${Pipeline/Pipeline}
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

+ arn:aws:iam::755314965794:role/* Allow sts:AssumeRole AWS:${Pipeline/UpdatePipeline/SelfMutation/Role} "ForAnyValue:StringEquals" : {  
    "iam:ResourceTag/aws-cdk:bootstrap-role": [  
        "image-publishing",  
        "file-publishing",  
        "deploy"  
    ]  
}

(NOTE: There may be security-related changes not in this list. See https://github.com/aws/aws-cdk/issues/1299)

Do you wish to deploy these changes (y/n)?
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

(NOTE: There may be security-related changes not in this list. See https://github.com/aws/aws-cdk/issues/1299)

Do you wish to deploy these changes (y/n)? y
CiCdAwsPipelineDemoStack: deploying...
[0%] start: Publishing d2b599b1279c6ca03f4b8cd2b9f6b4a841f3280a61cb24d329b47df5580fad36:755314965794-us-east-1
[100%] success: Published d2b599b1279c6ca03f4b8cd2b9f6b4a841f3280a61cb24d329b47df5580fad36:755314965794-us-east-1
CiCdAwsPipelineDemoStack: creating CloudFormation changeset...
```

console.aws.amazon.com/secretsmanager/home?region=us-east-1#/listSecrets/

aws Services Search: cloudformation

CloudFormation

Search results for 'cloudform'

Services (1)

Features (4)

Blogs (381)

Documentation (5,110)

Knowledge Articles (30)

Marketplace (306)

Secrets

Secret name

github-token

CloudFormation

Create and Manage Resources with Templates

Top features

StackSets Resource Import Stacks Exports Designer

Designer

CloudFormation feature

Store a new secret

console.aws.amazon.com/cloudformation/home?region=us-east-1#stacks?filteringStatus=active&filteringText=&viewNested=true&hideStacks=false

CloudFormation > Stacks

**Stacks (4)**

Stack name	Status	Created time	Description
CICdAwsPipelineDemoStack	CREATE_IN_PROGRESS	2022-01-30 17:42:02 UTC-0500	This stack includes resources needed to deploy AWS CDK apps into this environment
CDKToolkit	CREATE_COMPLETE	2022-01-29 12:11:29 UTC-0500	
aws-sam-cli-managed-default	CREATE_COMPLETE	2021-11-14 12:57:04 UTC-0500	Managed Stack for AWS SAM CLI
CFWPStackwwwbeabetterdevcom	UPDATE_COMPLETE	2020-12-04 16:16:57 UTC-0500	

console.aws.amazon.com/cloudformation/home?region=us-east-1#stacks/stackInfo?filteringStatus=active&filteringText=&viewNested=true&hideStacks=false&stackId=arn%3Aaws%3Acloudformation%3Aus-east-1%3A755314965794%3Astack%2FCICd... N. Virginia awssimplified\_user @ 7553-1496-5794

CloudFormation > Stacks > CICdAwsPipelineDemoStack

**CICdAwsPipelineDemoStack**

Stack info Events Resources Outputs Parameters Template Change sets

**Overview**

Stack ID	arn:aws:cloudformation:us-east-1:755314965794:stack/CICdAwsPipelineDemoStack/d747eb80-821d-11ec-9239-0a7487bf6e8b	Description
Status	CREATE_IN_PROGRESS	Status reason
Root stack	-	Parent stack
Created time	2022-01-30 17:42:02 UTC-0500	Deleted time
Updated time	2022-01-30 17:42:13 UTC-0500	
Drift status	NOT_CHECKED	Last drift check time
Termination protection	Disabled	IAM role

console.aws.amazon.com/cloudformation/home?region=us-east-1#stacks/events?filteringStatus=active&filteringText=&viewNested=true&hideStacks=false&stackId=arn%3Aaws%3Acloudformation%3Aus-east-1%3A755314965794%3Astack%2FCICd... N. Virginia awssimplified\_user @ 7553-1496-5794

CloudFormation > Stacks > CICdAwsPipelineDemoStack

**CICdAwsPipelineDemoStack**

Stack info Events Resources Outputs Parameters Template Change sets

**Events (2)**

Timestamp	Logical ID	Status	Status reason
2022-01-30 17:42:13 UTC-0500	CICdAwsPipelineDemoStack	CREATE_IN_PROGRESS	User Initiated
2022-01-30 17:42:02 UTC-0500	CICdAwsPipelineDemoStack	REVIEW_IN_PROGRESS	User Initiated

Screenshot of the AWS CloudFormation console showing the Preferences dialog box. The dialog box is titled "Preferences" and contains a checkbox for "Wrap lines" with the sub-instruction "Wrap lines to display all text". Below this is a section titled "Select visible columns" with several checkboxes for filtering stack event data:

- Timestamp (checked)
- Logical ID (checked)
- Status (checked)
- Status reason (checked)
- Type (checked)
- Physical ID (unchecked)
- Client request token (unchecked)

At the bottom right of the dialog box are "Cancel" and "Confirm" buttons.

Screenshot of the AWS CloudFormation console showing the "Events" tab for the stack "CiCdAwsPipelineDemoStack". The table displays two events:

Timestamp	Logical ID	Status	Status reason	Type
2022-01-30 17:42:13 UTC-0500	CiCdAwsPipelineDemoStack	<span>CREATE_IN_PROGRESS</span>	User Initiated	AWS::CloudFormation::Stack
2022-01-30 17:42:02 UTC-0500	CiCdAwsPipelineDemoStack	<span>REVIEW_IN_PROGRESS</span>	User Initiated	AWS::CloudFormation::Stack

Screenshot of the AWS CloudFormation console showing the "Events" tab for the stack "CiCdAwsPipelineDemoStack". The table displays 17 events, mostly related to resource creation:

Timestamp	Logical ID	Status	Status reason	Type
2022-01-30 17:42:38 UTC-0500	CDKMetadata	<span>CREATE_COMPLETE</span>	-	AWS::CDK::Metadata
2022-01-30 17:42:38 UTC-0500	CDKMetadata	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::CDK::Metadata
2022-01-30 17:42:37 UTC-0500	PipelineArtifactsBucketAEA9A052	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::S3::Bucket
2022-01-30 17:42:37 UTC-0500	PipelineBuildSynthCodePipelineActionRole4E7A6C97	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineRoleB27FAA37	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineUpdatePipelineSelfMutationRole57E559E8	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineBuildSynthCodePipelineActionRole4E7A6C97	<span>CREATE_IN_PROGRESS</span>	-	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineBuildSynthCdkBuildProjectRole231EEA2A	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineUpdatePipelineSelfMutateCodePipelineActionRole0604E5CF	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role

CloudFormation > Stacks > CiCdAwsPipelineDemoStack

**Events (17)**

Timestamp	Logical ID	Status	Status reason	Type
2022-01-30 17:42:37 UTC-0500	PipelineArtifactsBucketAEA9A052	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::S3::Bucket
2022-01-30 17:42:37 UTC-0500	PipelineBuildSynthCodePipelineActionRole4E7A6C97	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineRoleB27FAA37	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineUpdatePipelineSelfMutationRole57E59E8	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineBuildSynthCodePipelineActionRole4E7A6C97	<span>CREATE_IN_PROGRESS</span>	-	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineBuildSynthCdkBuildProjectRole231EEA2A	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineUpdatePipelineSelfMutationCodePipelineActionRole6D4E5CF	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::IAM::Role
2022-01-30 17:42:37 UTC-0500	PipelineRoleB27FAA37	<span>CREATE_IN_PROGRESS</span>	-	AWS::IAM::Role
2022-01-30 17:42:36 UTC-0500	CDKMetadata	<span>CREATE_IN_PROGRESS</span>	-	AWS::CDK::Metadata
2022-01-30 17:42:36 UTC-0500	PipelineArtifactsBucketAEA9A052	<span>CREATE_IN_PROGRESS</span>	-	AWS::S3::Bucket
2022-01-30 17:42:36 UTC-0500	PipelineUpdatePipelineSelfMutationRole57E59E8	<span>CREATE_IN_PROGRESS</span>	-	AWS::IAM::Role
2022-01-30 17:42:36 UTC-0500	PipelineBuildSynthCdkBuildProjectRole231EEA2A	<span>CREATE_IN_PROGRESS</span>	-	AWS::IAM::Role

CloudFormation > Stacks > CiCdAwsPipelineDemoStack

**Events (54)**

Timestamp	Logical ID	Status	Status reason	Type
2022-01-30 17:43:28 UTC-0500	CiCdAwsPipelineDemoStack	<span>CREATE_COMPLETE</span>	-	AWS::CloudFormation::Stack
2022-01-30 17:43:27 UTC-0500	PipelineSourcebeabetterdevvccicdawsplinedemoWebhookResource30D67994	<span>CREATE_COMPLETE</span>	-	AWS::CodePipeline::Webhook
2022-01-30 17:43:27 UTC-0500	PipelineSourcebeabetterdevvccicdawsplinedemoWebhookResource30D67994	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::CodePipeline::Webhook
2022-01-30 17:43:24 UTC-0500	PipelineSourcebeabetterdevvccicdawsplinedemoWebhookResource30D67994	<span>CREATE_IN_PROGRESS</span>	-	AWS::CodePipeline::Webhook
2022-01-30 17:43:21 UTC-0500	Pipeline98508417	<span>CREATE_COMPLETE</span>	-	AWS::CodePipeline::Pipeline
2022-01-30 17:43:20 UTC-0500	Pipeline98508417	<span>CREATE_IN_PROGRESS</span>	Resource creation Initiated	AWS::CodePipeline::Pipeline
2022-01-30 17:43:18 UTC-0500	Pipeline98508417	<span>CREATE_IN_PROGRESS</span>	-	AWS::CodePipeline::Pipeline
2022-01-30 17:43:15 UTC-0500	PipelineRoleDefaultPolicy7BD01ABB	<span>CREATE_COMPLETE</span>	-	AWS::IAM::Policy

CloudFormation

Services (1)

**Services**

CodePipeline

Release Software using Continuous Delivery

See all 84 results ▾

**Blogs**

- Chaos Testing with AWS Fault Injection Simulator and AWS CodePipeline
- Using AWS CodePipeline for deploying container images to AWS Lambda Functions
- Building containers images for AWS Marketplace containers-based product with AWS CodePipeline
- Creating container images with Cloud Native Buildpacks using AWS CodeBuild and AWS CodePipeline

**Tutorials**

- Create a Continuous Delivery Pipeline

Feedback

Stack details

Drifts

StackSets

Exports

Designer

Registry

Public extensions

Activated extensions

Publisher

Delete Update Stack actions Create stack

Status Status reason

- CREATE\_COMPLETE
- CREATE\_COMPLETE
- CREATE\_IN\_PROGRESS Resource creation initiated
- CREATE\_IN\_PROGRESS
- CREATE\_COMPLETE
- CREATE\_IN\_PROGRESS Resource creation initiated
- CREATE\_IN\_PROGRESS
- CREATE\_COMPLETE

Developer Tools

**CodePipeline**

- Source + CodeCommit
- Artifacts + CodeArtifact
- Build + CodeBuild
- Deploy + CodeDeploy
- Pipeline + CodePipeline
- Getting started
- Pipelines**
- Settings

Search for services, features, blogs, docs, and more [Alt+S]

Developer Tools > CodePipeline > Pipelines

**Pipelines**

Name	Most recent execution	Latest source revisions	Last executed
TestPipeline	In progress	beabetterdevv_ci_cd_aws_pipeline-demo - b2b2497e	Just now

Create pipeline

Developer Tools

**CodePipeline**

- Source + CodeCommit
- Artifacts + CodeArtifact
- Build + CodeBuild
- Deploy + CodeDeploy
- Pipeline + CodePipeline
- Getting started
- Pipelines
- Pipeline**
- History
- Settings
- Go to resource
- Feedback

Search for services, features, blogs, docs, and more [Alt+S]

Developer Tools > CodePipeline > Pipelines > TestPipeline

**TestPipeline**

Source Succeeded

Pipeline execution ID: 9b1f97f4-9b07-4f4e-a75d-513975609bea

beabetterdevv\_ci\_cd\_aws... GitHub (Version 1) Succeeded - Just now b2b2497e

b2b2497e beabetterdevv\_ci\_cd\_aws\_pipeline-demo: added

Disable transition

Build In progress

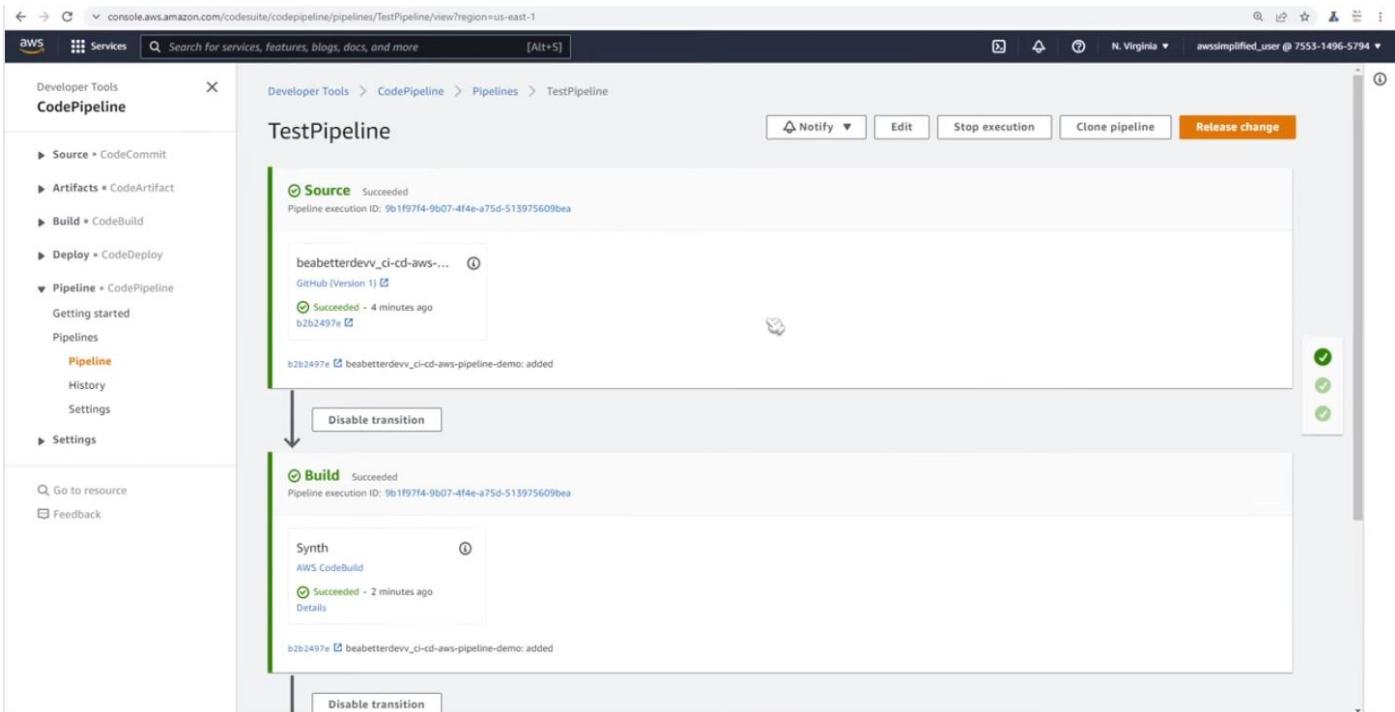
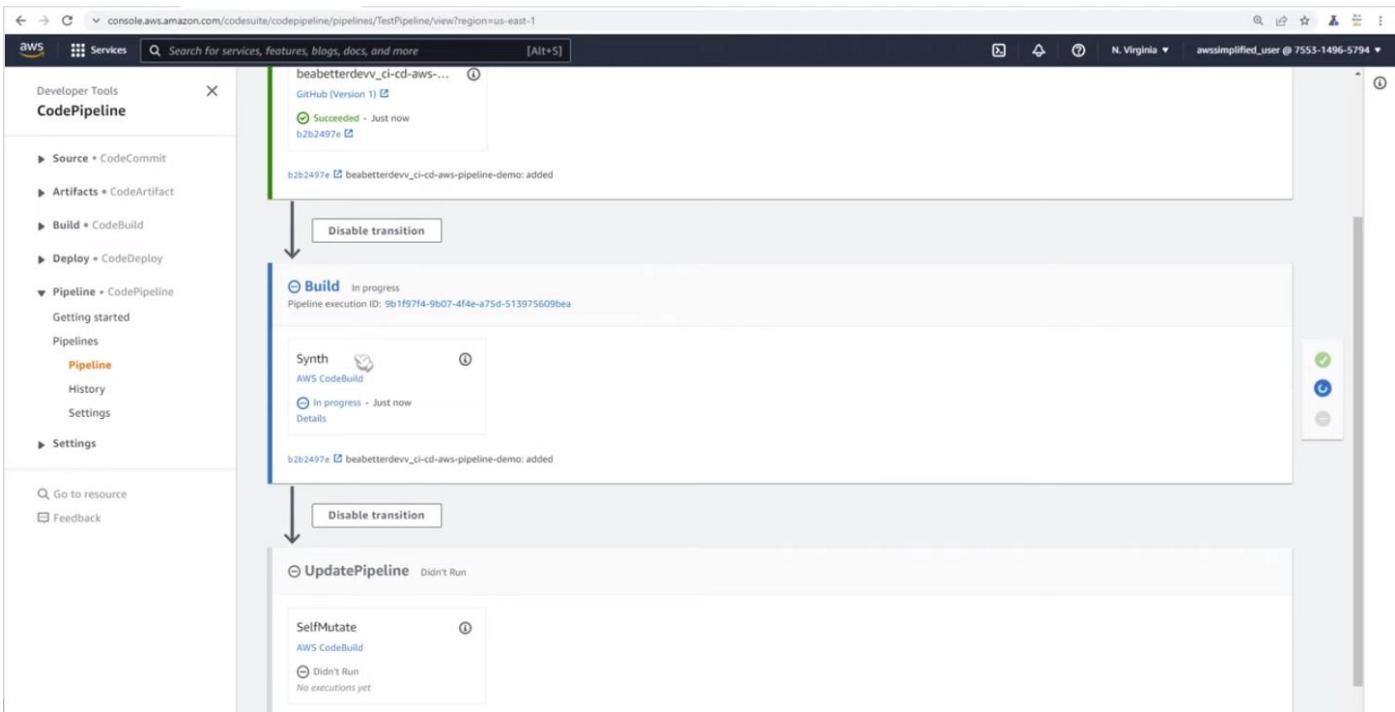
Pipeline execution ID: 9b1f97f4-9b07-4f4e-a75d-513975609bea

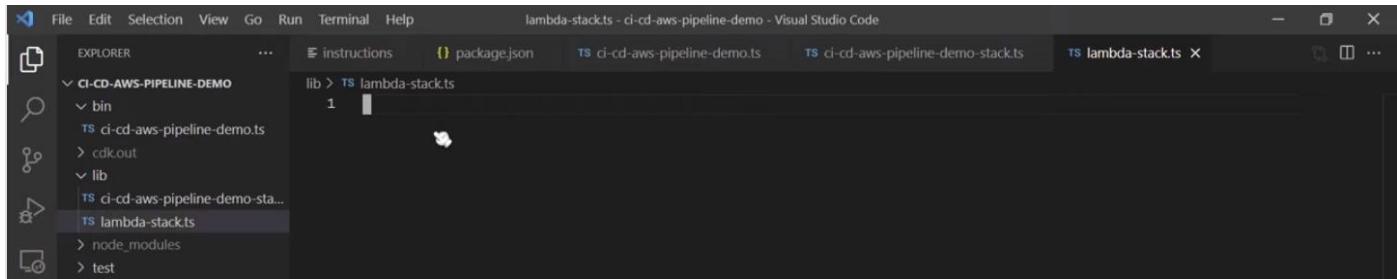
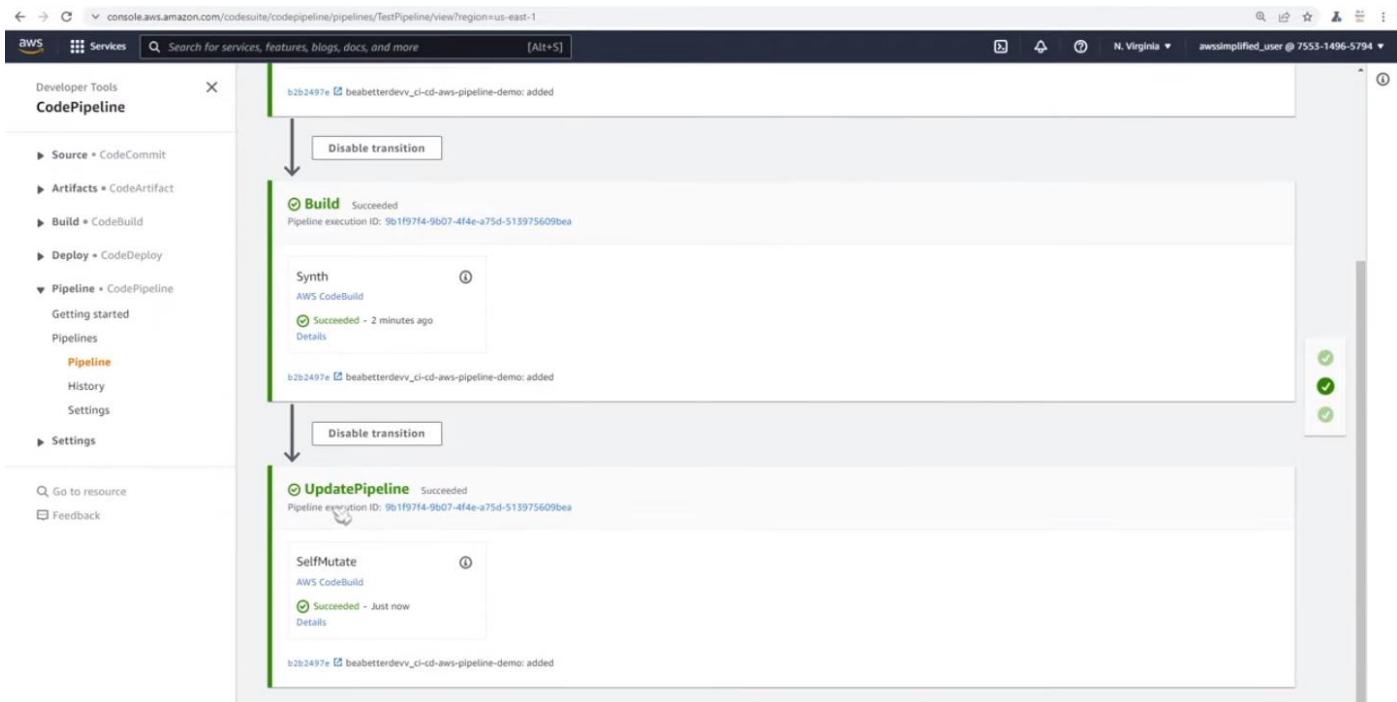
Synth AWS CodeBuild In progress - Just now Details

b2b2497e beabetterdevv\_ci\_cd\_aws\_pipeline-demo: added

Disable transition

We can see that Code Pipeline is now correctly linked to our GitHub repository and shows the commits made to it.





Next, we can now start to create our Lambda stack as below

```

import * as cdk from 'aws-cdk-lib';
import { Construct } from 'constructs';
import { Function, InlineCode, Runtime, Code } from 'aws-cdk-lib/aws-lambda';
import * as path from 'path';

export class MyLambdaStack extends cdk.Stack {
  constructor(scope: Construct, id: string, stagename: string, props?: cdk.StackProps) {
    super(scope, id, props);
    new Function(this, 'LambdaFunction', {
      runtime: Runtime.NODEJS_12_X, //using node for this, but can easily use python or other
      handler: 'handler.handler',
      code: Code.fromAsset(path.join(__dirname, 'lambda')), //resolving to ./lambda directory
      environment: { "stageName": stagename } //inputting stagename
    });
  }
}

```

Note the environment variable called **stageName** on line 7 and 13, this will allow us set environments like test, production to deploy to and toggle features for.

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "CI-CD-AWS-Pipeline-Demo".
- Code Editor:** Displays the content of `handler.ts`:
 

```
1  export async function handler(event: string, context: string) {
2    console.log('Stage Name is: ' + process.env.stage);
3    return {
4      body: 'Hello from a Lambda Function',
5      statusCode: 200,
6    };
7  }
```
- Terminal:** Shows the command `cd ci-cd-aws-pipeline-demo`.

Then create a folder called **lambda** and a new file within it called **handler.ts**, put in the code above just for now

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "CI-CD-AWS-Pipeline-Demo".
- Code Editor:** Displays the content of `stage.ts`:
 

```
1  import * as cdk from 'aws-cdk-lib';
2  import { Construct } from "constructs";
3  import { MyLambdaStack } from './lambda-stack';
4
5  export class MyPipelineAppStage extends cdk.Stage {
6    constructor(scope: Construct, stageName: string, props?: cdk.StageProps) {
7      super(scope, stageName, props);
8
9      const lambdaStack = new MyLambdaStack(this, 'LambdaStack', stageName);
10    }
11  }
```
- Terminal:** Shows the command `cd ci-cd-aws-pipeline-demo`.

Next, we need to set up our stages using the file **stage.ts** as above, test and production stages.

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "ci-cd-aws-pipeline-demo-stack".
- Code Editor:** Displays the content of `ci-cd-aws-pipeline-demo-stack.ts`:
 

```
1  import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
2  //import { MyPipelineAppStage } from './stage';
3
4  export class CiCdAwsPipelineDemoStack extends cdk.Stack {
5    constructor(scope: Construct, id: string, props?: cdk.StackProps) {
6      super(scope, id, props);
7
8      new CodePipeline(this, 'Pipeline', {
9        pipelineName: 'TestPipeline',
10       synth: new ShellStep('synth', {
11         input: CodePipelineSource.github('beabetterdev/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this
12         commands: ['npm ci',
13                   'npm run build',
14                   'npx cdk synth']
15       });
16     });
17   }
18 }
```
- Terminal:** Shows the command `cd ci-cd-aws-pipeline-demo`.

We now need to change the above code by adding our new stages

```

File Edit Selection View Go Run Terminal Help • ci-cd-aws-pipeline-demo-stack.ts - ci-cd-aws-pipeline-demo - Visual Studio Code
EXPLORER instructions package.json ts ci-cd-aws-pipeline-demo.ts ts ci-cd-aws-pipeline-demo-stack.ts ● TS handler.ts U TS stage.ts U ...
lib > ts ci-cd-aws-pipeline-demo-stack.ts > CiCdAwsPipelineDemoStack > constructor > pipeline
    4 import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
    5 //import { MyPipelineAppStage } from './stage';
    6
    7 export class CiCdAwsPipelineDemoStack extends cdk.Stack {
    8     constructor(scope: Construct, id: string, props?: cdk.StackProps) {
    9         super(scope, id, props);
   10
   11         const pipeline = new CodePipeline(this, 'Pipeline', {
   12             pipelineName: 'TestPipeline',
   13             synth: new ShellStep('Synth', {
   14                 input: CodePipelineSource.gitHub('beabetterdevv/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this
   15                 commands: ['npm ci',
   16                         'npm run build',
   17                         'npx cdk synth']
   18             });
   19         });
   20     }
   21 }

```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\Users\Dan\Documents\temp\pipelines\ci-cd-aws-pipeline-demo>

```

File Edit Selection View Go Run Terminal Help • ci-cd-aws-pipeline-demo-stack.ts - ci-cd-aws-pipeline-demo - Visual Studio Code
EXPLORER instructions package.json ts ci-cd-aws-pipeline-demo.ts ts ci-cd-aws-pipeline-demo-stack.ts 2 ● TS handler.ts U TS stage.ts U ...
lib > ts ci-cd-aws-pipeline-demo-stack.ts > CiCdAwsPipelineDemoStack > constructor
    14     input: CodePipelineSource.gitHub('beabetterdevv/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this
    15     commands: ['npm ci',
    16                 'npm run build',
    17                 'npx cdk synth']
    18             });
    19         );
    20
    21         const testingStage = pipeline.addStage(new MyPipelineAppStage(this, "test", {
    22             env: { account: "755314965794", region: "us-east-1" }
    23         });
    24
    25         testingStage.addPost(new ManualApprovalStep('Manual approval before production'));
    26
    27         const prodStage = pipeline.addStage(new MyPipelineAppStage(this, "prod", {
    28             env: { account: "755314965794", region: "us-east-1" }
    29         });
    30     );
    31 }

```

Now add the imports and the stage details as below

```

File Edit Selection View Go Run Terminal Help • ci-cd-aws-pipeline-demo-stack.ts - ci-cd-aws-pipeline-demo - Visual Studio Code
EXPLORER instructions package.json ts ci-cd-aws-pipeline-demo.ts ts ci-cd-aws-pipeline-demo-stack.ts ● TS handler.ts U TS stage.ts U ...
lib > ts ci-cd-aws-pipeline-demo-stack.ts ...
    1 import * as cdk from 'aws-cdk';
    2 import { Construct } from 'constructs';
    3 import { CodePipeline, CodePipelineSource, ShellStep } from 'aws-cdk-lib/pipelines';
    4 import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
    5 import { MyPipelineAppStage } from './stage';
    6
    7 export class CiCdAwsPipelineDemoStack extends cdk.Stack {
    8     constructor(scope: Construct, id: string, props?: cdk.StackProps) {
    9         super(scope, id, props);
   10
   11         const pipeline = new CodePipeline(this, 'Pipeline', {
   12             pipelineName: 'TestPipeline',
   13             synth: new ShellStep('Synth', {
   14                 input: CodePipelineSource.gitHub('beabetterdevv/ci-cd-aws-pipeline-demo', 'main'), //Remember to change this
   15                 commands: ['npm ci',
   16                         'npm run build',
   17                         'npx cdk synth']
   18             });
   19         });
   20     }
   21 }

```

```

17      },
18      ],
19    );
20  });
21
22  const testingStage = pipeline.addStage(new MyPipelineAppStage(this, "test", {
23    env: { account: "755314965794", region: "us-east-1" }
24  });
25
26  testingStage.addPost(new ManualApprovalStep('Manual approval before production'));
27
28  const prodStage = pipeline.addStage(new MyPipelineAppStage(this, "prod", {
29    env: { account: "755314965794", region: "us-east-1" }
30  }));
31});
32

```

Not that we added a **manual approval post step** between our **test** and **prod** stages above, this step requires that someone goes to the **AWS console** and manually clicks the approve button so that code can be deployed to prod.

```

diff --git a/lib/ci-cd-aws-pipeline-demo-stack.ts b/lib/ci-cd-aws-pipeline-demo-stack.ts
@@ -2,13 +2,13 @@ import * as cdk from 'aws-cdk-lib';
 2 2   import { Construct } from 'constructs';
 3 3   import { CodePipeline, CodePipelineSource, ShellStep } from 'aws-cdk-lib/pipelines';
 4 4   import { ManualApprovalStep } from 'aws-cdk-lib/pipelines';
 5 5   import { MyPipelineAppStage } from './stage';
 6 6   import { MyPipelineAppStage } from './stage';
 7 7
 8 8   export class CiCdAwsPipelineDemoStack extends cdk.Stack {
 9 9     constructor(scope: Construct, id: string, props: cdk.StackProps) {
10 10       super(scope, id, props);
11 11       new CodePipeline(this, 'Pipeline', {
12 12         const pipeline = new CodePipeline(this, 'Pipeline', {
13 13           pipelineName: 'testPipeline',
14 14           synth: new ShellStep('Synth', {
15 15             input: CodePipelineSource.github('beabetterdev/ci-cd-aws-pipeline-demo', 'main'), //Remember to change
16 16             //the branch name here
17 17             commands: [
18 18               'npm install',
19 19               'npx cdk synth'
20 20             ],
21 21           }),
22 22         const testingStage = pipeline.addStage(new MyPipelineAppStage(this, "test", {
23 23           env: { account: "755314965794", region: "us-east-1" }
24 24         }));
25 25         testingStage.addPost(new ManualApprovalStep('Manual approval before production'));
26 26       });
27 27     }
28 28   }
29 29 }
30 30

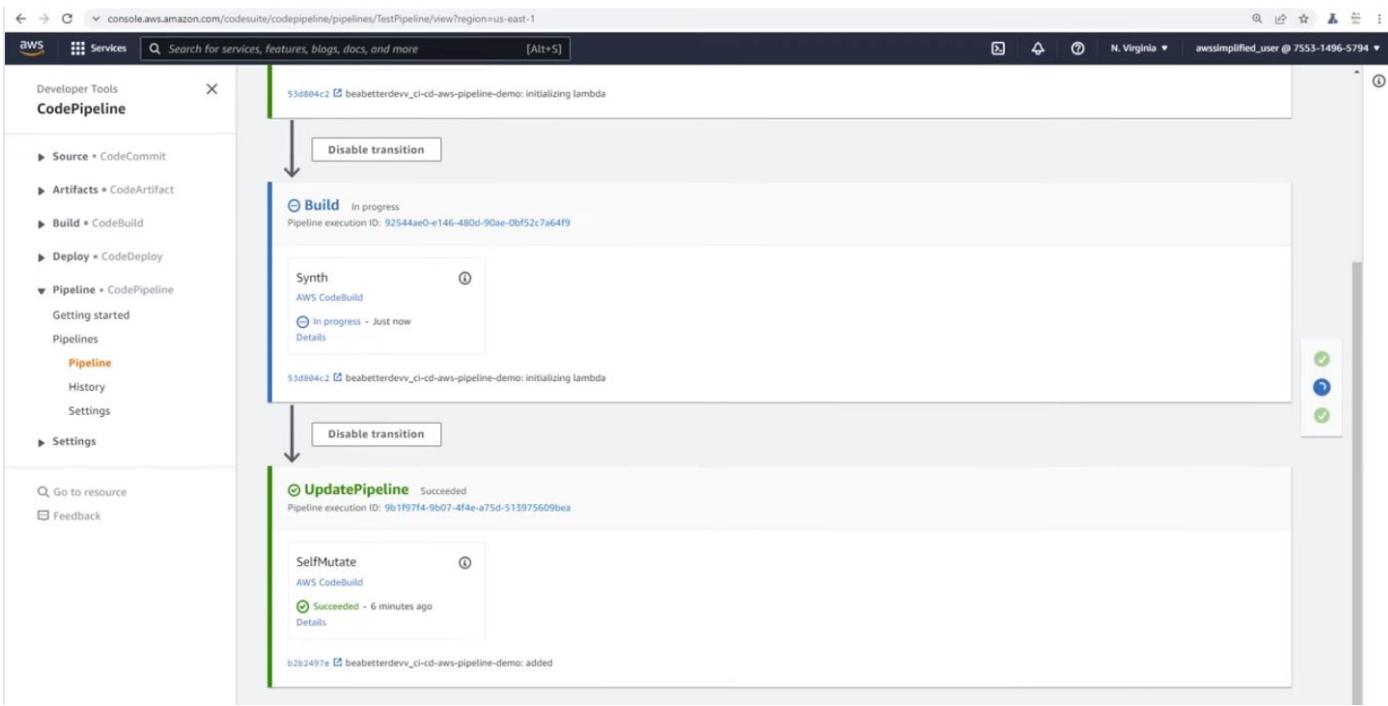
```

We then commit the code to our GitHub repo

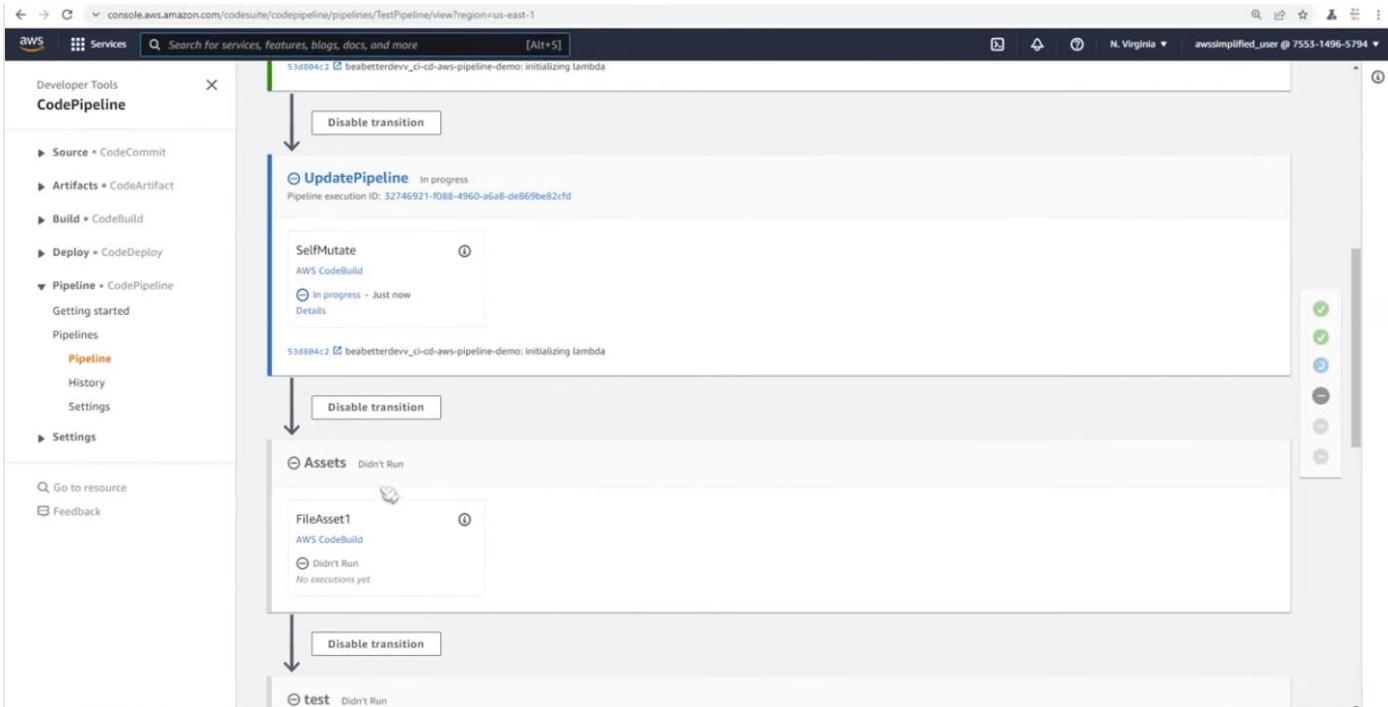
The screenshot shows the AWS CodePipeline console for the 'TestPipeline'. The pipeline structure is as follows:

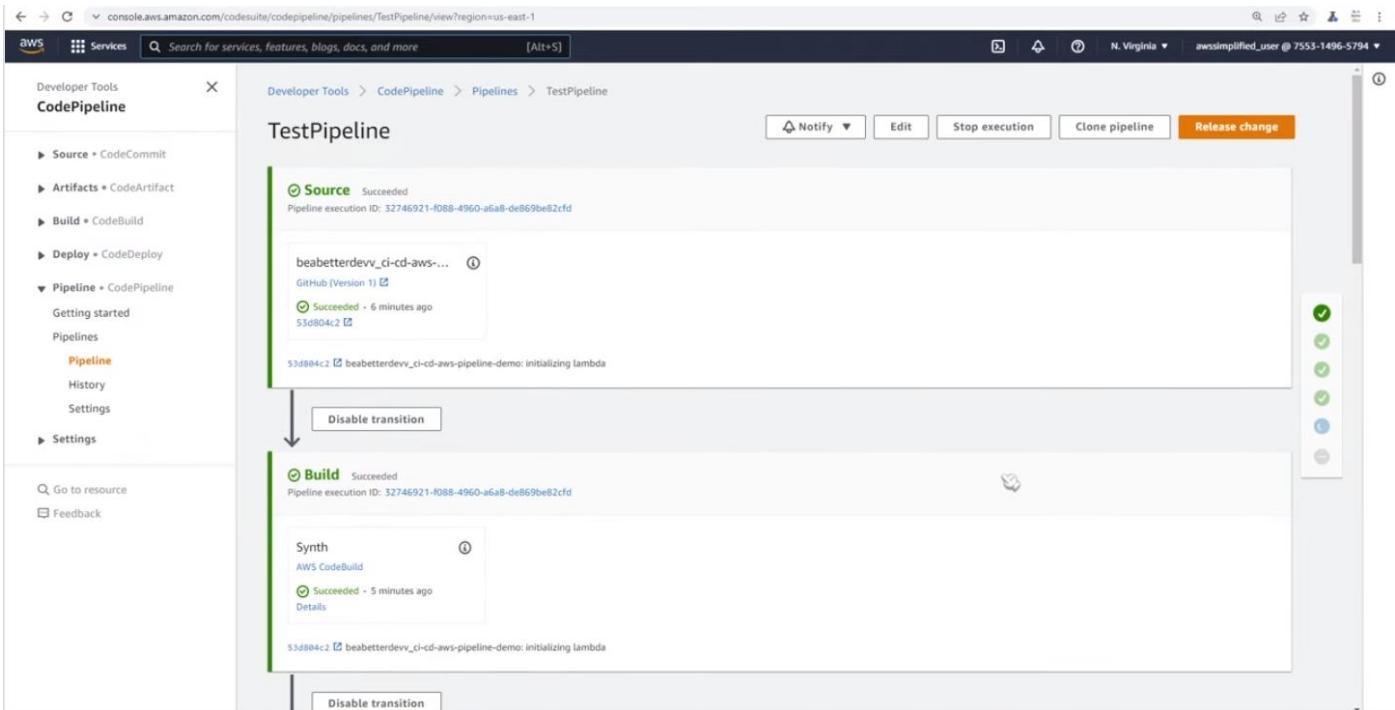
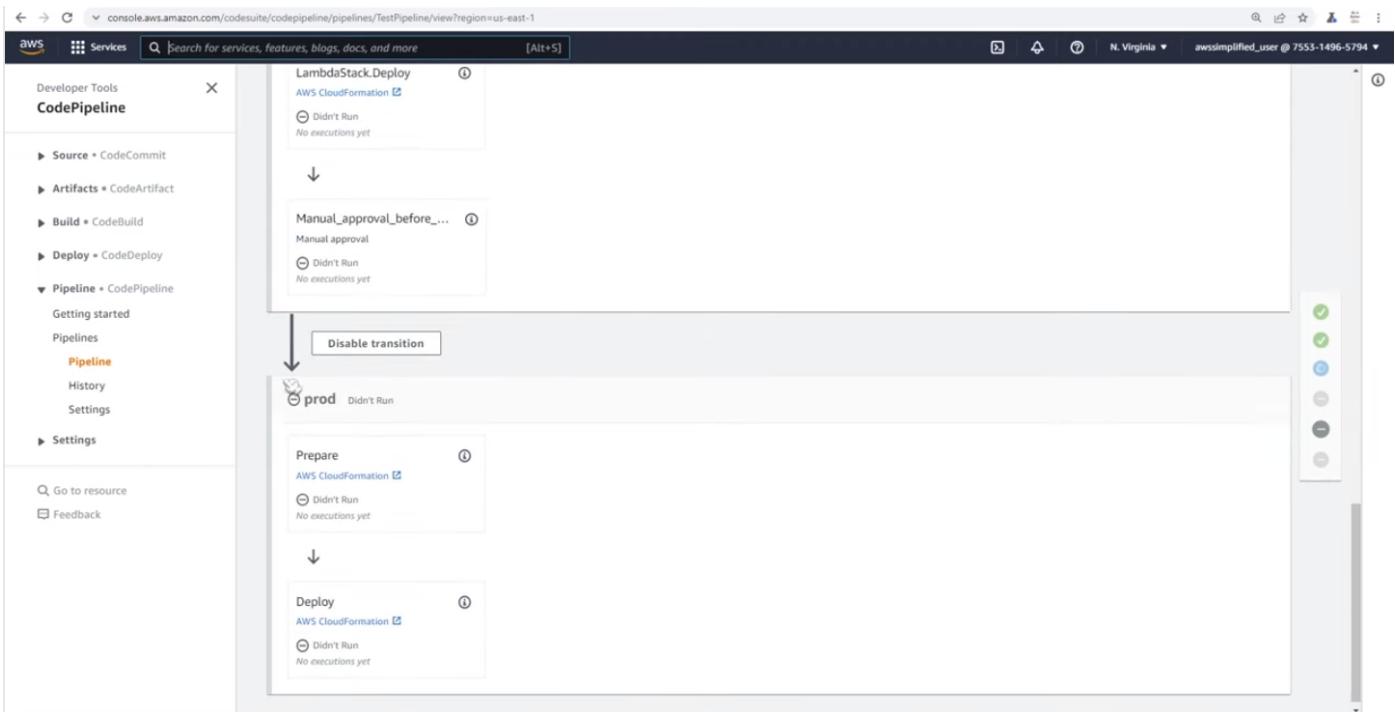
- Source**: Succeeded. Pipeline execution ID: 92544ae0-e146-480d-90ae-0bf52c7a64f9. Status: Succeeded - Just now. Task: beabetterdev\_ci-cd-aws... (GitHub Version 1).
- Build**: In progress. Pipeline execution ID: 92544ae0-e146-480d-90ae-0bf52c7a64f9. Status: In progress - Just now. Task: Synth (AWS CodeBuild).

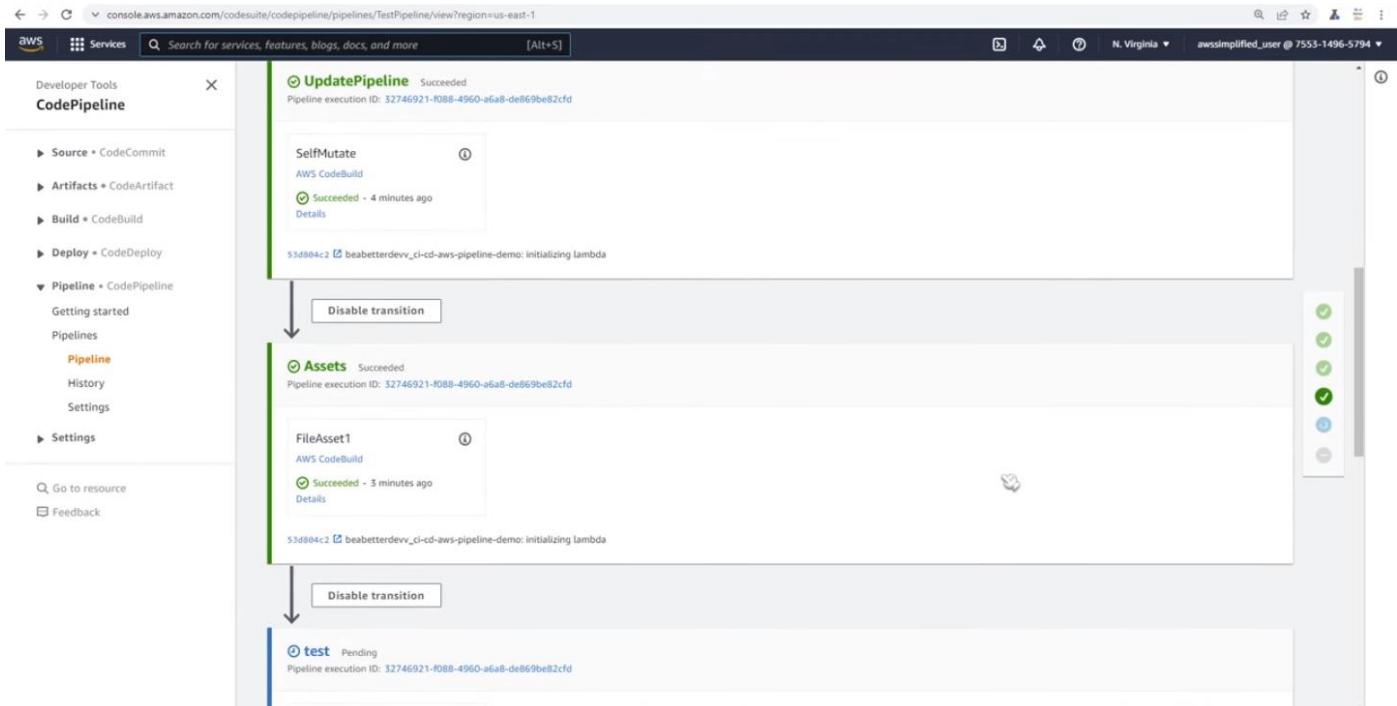
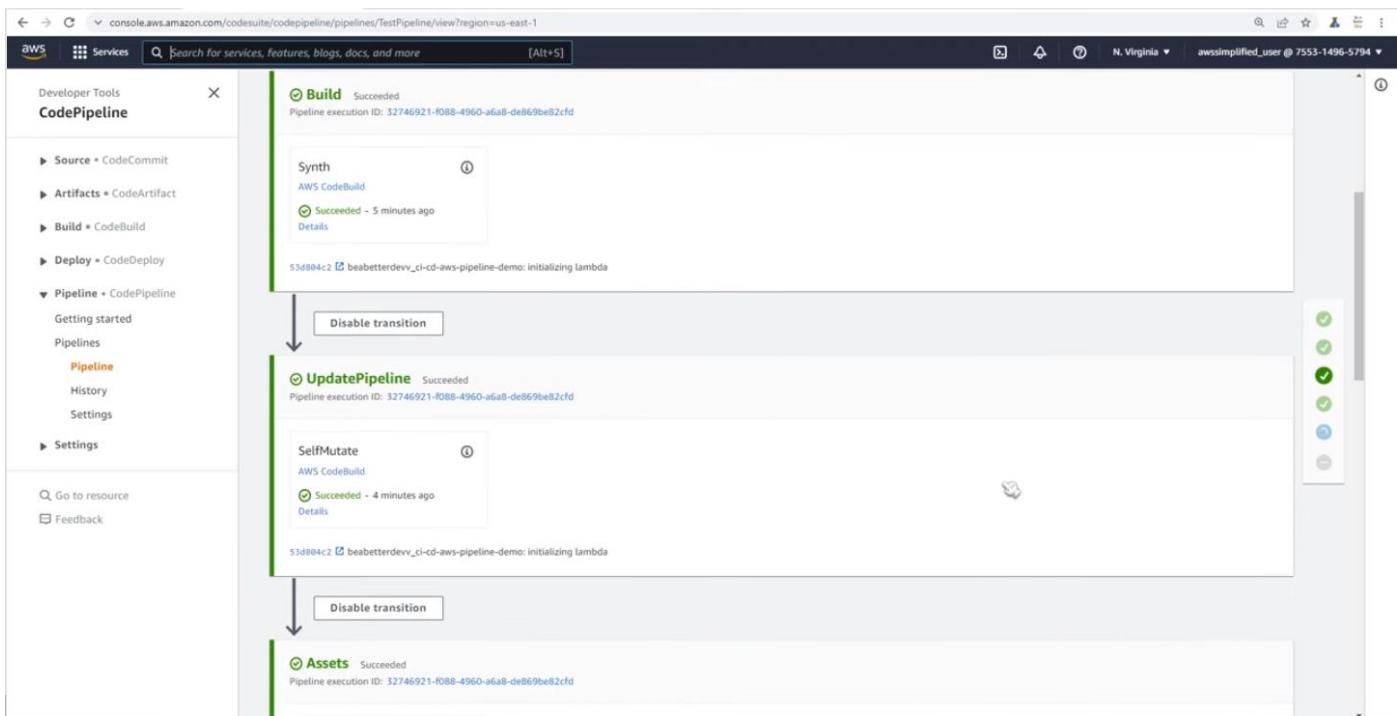
Below the stages, there are 'Disable transition' buttons for each stage. The pipeline is currently at the 'Build' stage.

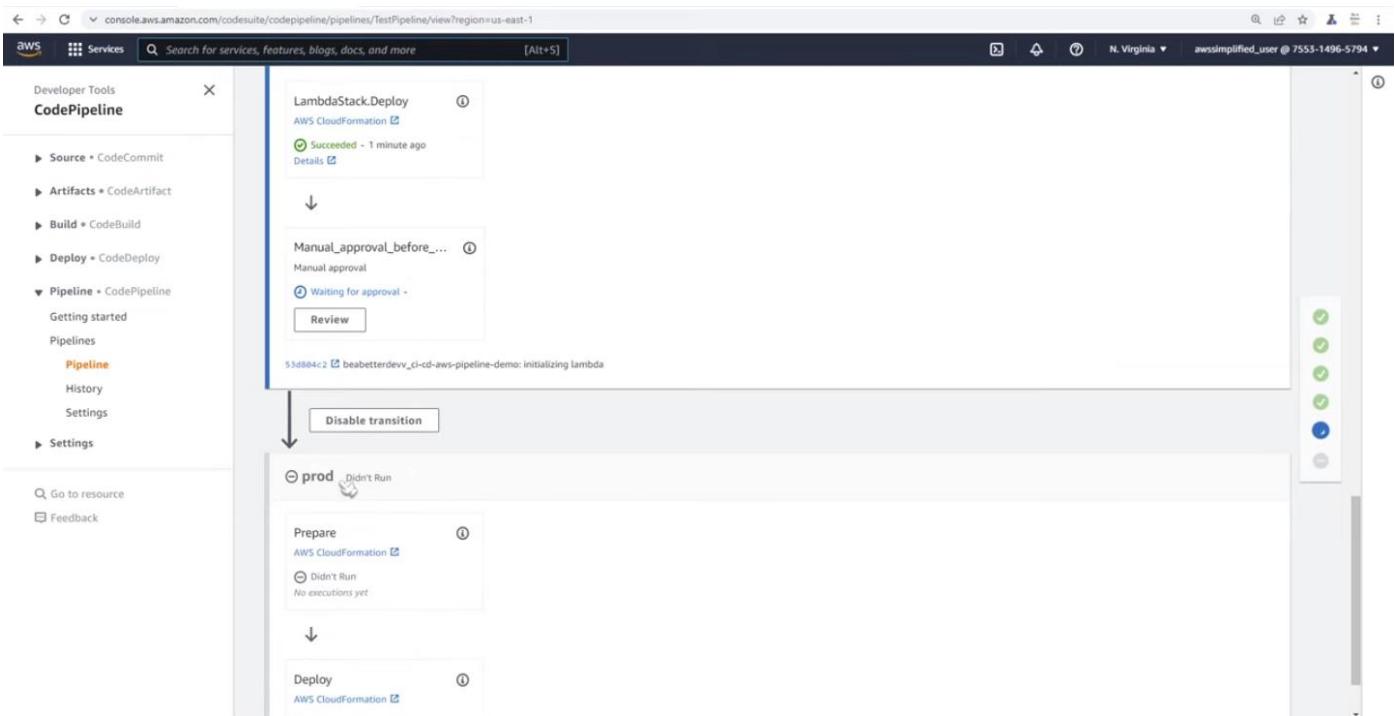
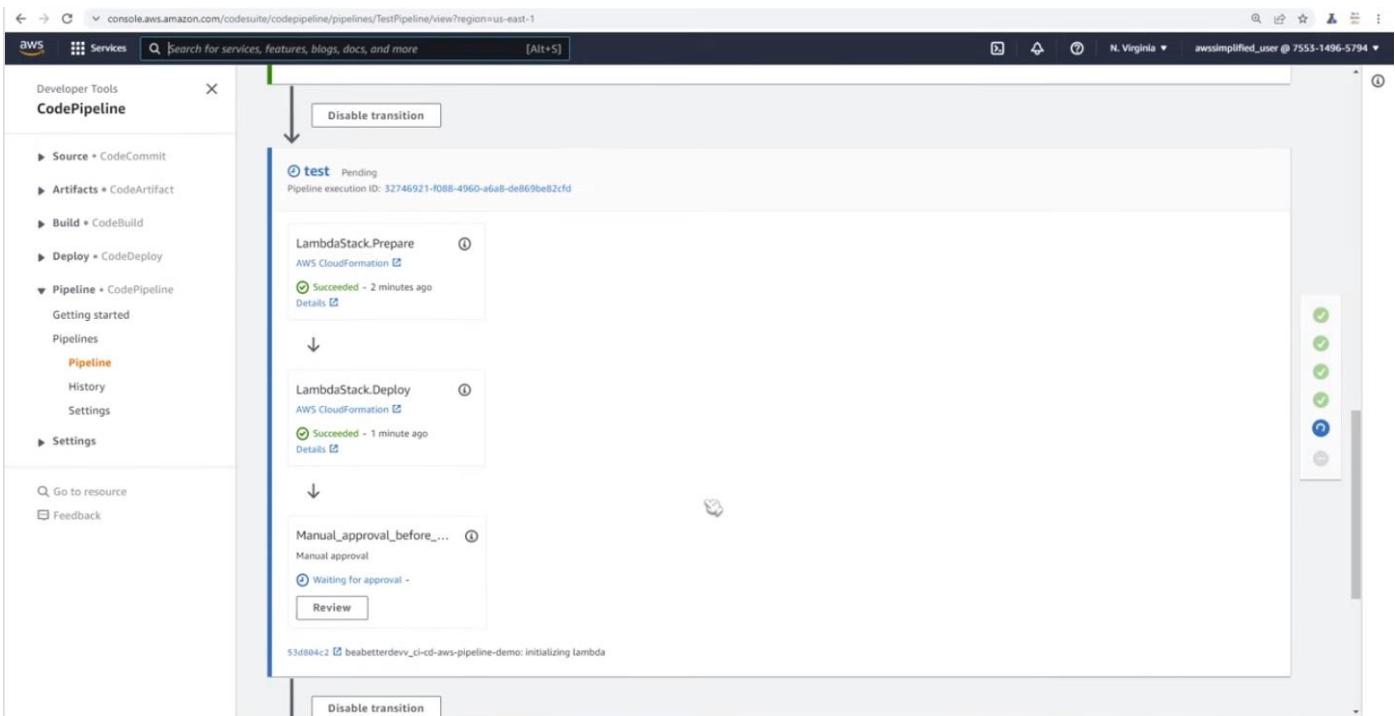


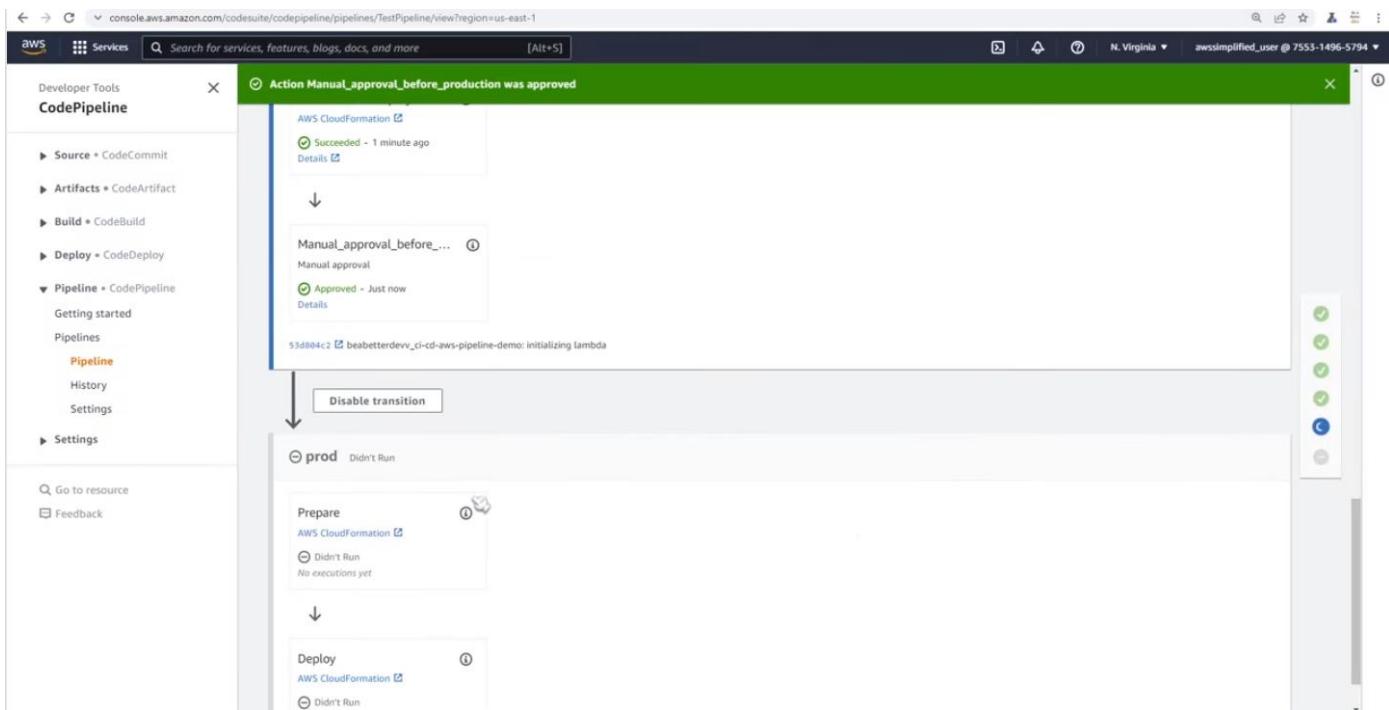
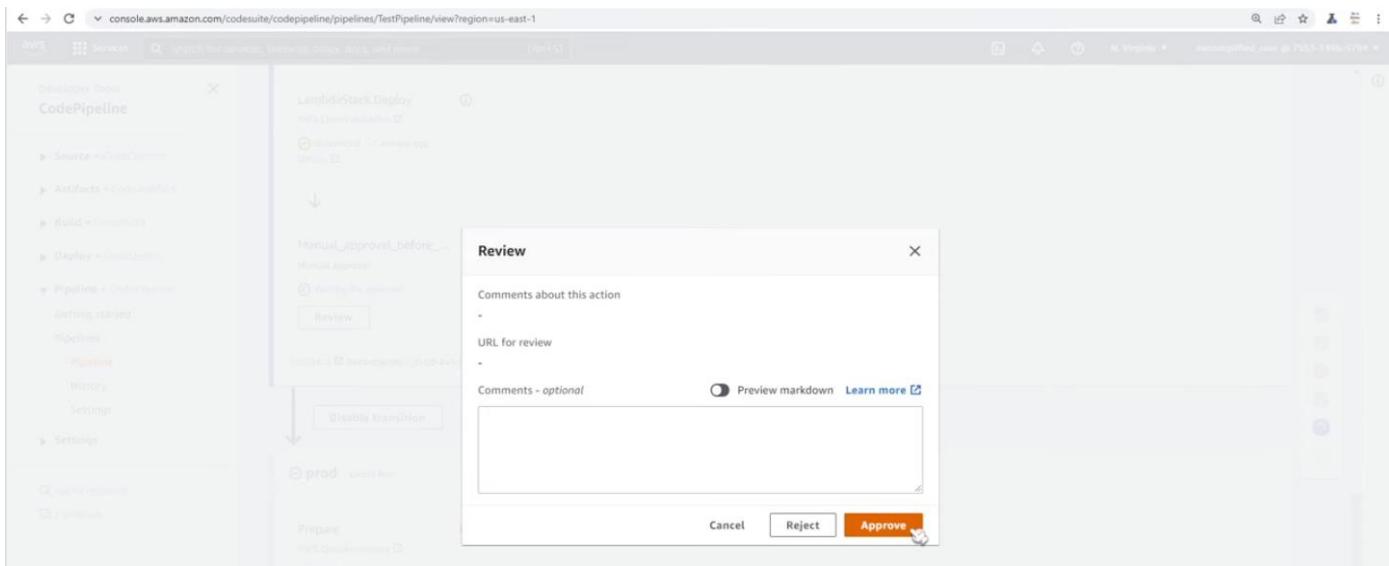
The shape of the **UpdatePipeline** step will change to include deployment to a test environment, a manual step, then deployment to a prod environment.

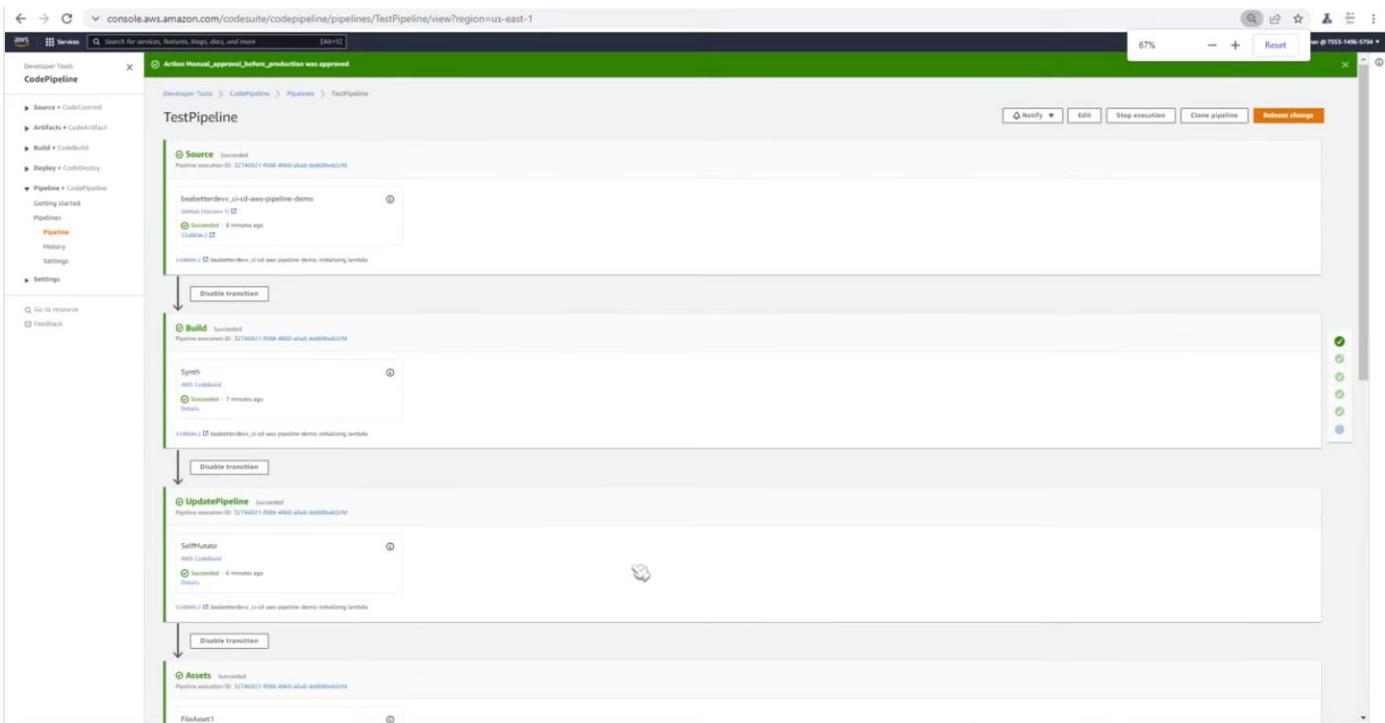




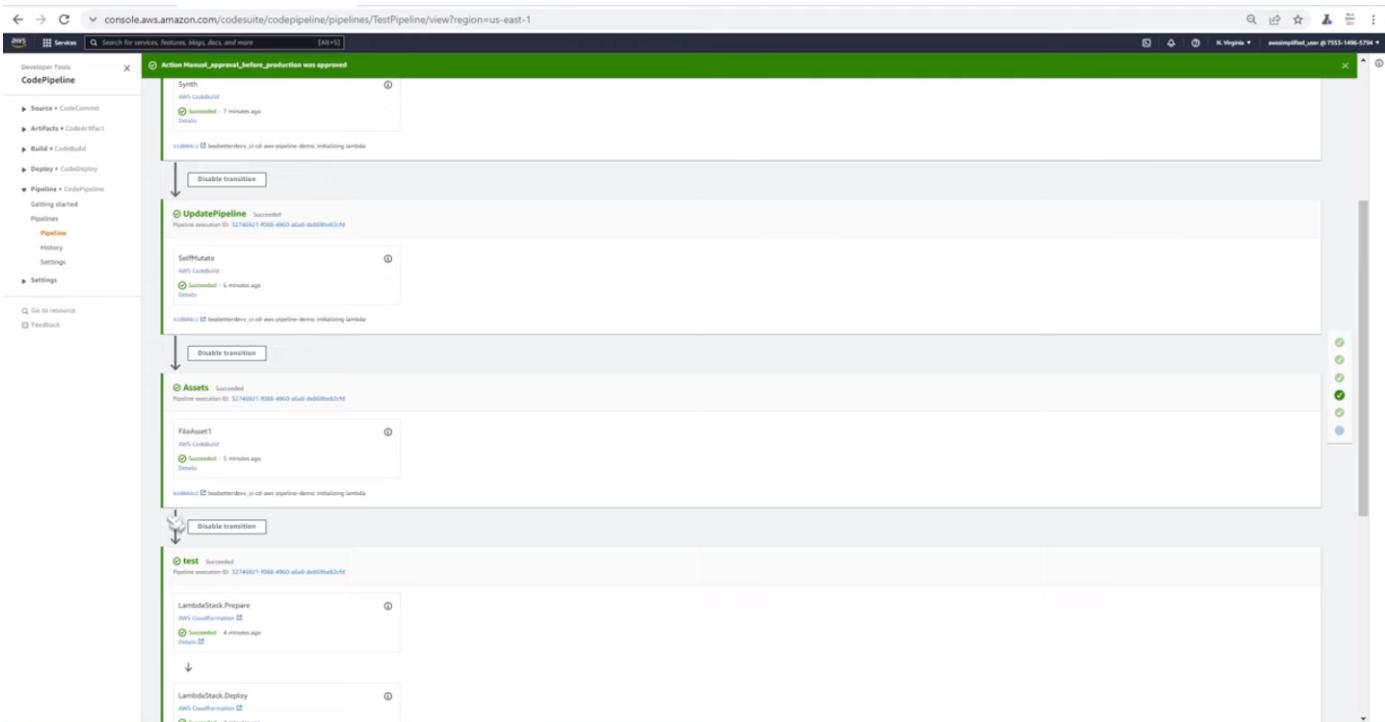








We can also add a unit test step after the build into our pipeline before the UpdatePipeline step



Screenshot of the AWS CloudFormation console showing the events for the CiCdAwsPipelineDemoStack.

**CloudFormation**

**Stacks (5)**

- test-LambdaStack (Active) - CREATE\_COMPLETE
- CiCdAwsPipelineDemoStack (Active) - UPDATE\_COMPLETE
- CDKToolkit (Active) - CREATE\_COMPLETE
- aws-sam-cli-managed-default (Active) - CREATE\_COMPLETE
- CFWPStackwwwbeabetterdevcom (Active) - UPDATE\_COMPLETE

**CiCdAwsPipelineDemoStack**

**Events (54)**

Timestamp	Logical ID	Status	Status reason	Type
2022-01-30 17:43:28 UTC-0500	CiCdAwsPipelineDemoStack	CREATE_COMPLETE	-	AWS::CloudFormation::Stack
2022-01-30 17:43:27 UTC-0500	PipelineSourcebabetterdevvvcdawspipelinemoWebhookResource30D67994	CREATE_COMPLETE	-	AWS::CodePipeline::Webhook
2022-01-30 17:43:27 UTC-0500	PipelineSourcebabetterdevvvcdawspipelinemoWebhookResource30D67994	CREATE_IN_PROGRESS	Resource creation Initiated	AWS::CodePipeline::Webhook
2022-01-30 17:43:24 UTC-0500	PipelineSourcebabetterdevvvcdawspipelinemoWebhookResource30D67994	CREATE_IN_PROGRESS	-	AWS::CodePipeline::Webhook
2022-01-30 17:43:21 UTC-0500	Pipeline9850B417	CREATE_COMPLETE	-	AWS::CodePipeline::Pipeline
2022-01-30 17:43:20 UTC-0500	Pipeline9850B417	CREATE_IN_PROGRESS	Resource creation Initiated	AWS::CodePipeline::Pipeline
2022-01-30 17:43:18 UTC-0500	Pipeline9850B417	CREATE_IN_PROGRESS	-	AWS::CodePipeline::Pipeline
2022-01-30 17:43:15 UTC-0500	PipelineRoleDefaultPolicy7BDC1ABB	CREATE_COMPLETE	-	AWS::IAM::Policy

Screenshot of the AWS CloudFormation console showing the services for Lambda.

**CloudFormation**

**Services (5)**

- Lambda
- CodeBuild
- AWS Signer
- Amazon Lex
- Local processing

**Lambda**

**Functions (29)**

Function name	Description	Package type	Runtime	Code size	Last modified
test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr	-	Zip	Node.js 12.x	1.4 kB	2 minutes ago
LoggingDemo	-	Zip	Python 3.9	1.3 kB	1 month ago
PurchaseEventProcessor	-	Zip	Python 3.9	196.0 byte	2 months ago
LambdaEventFilterDemo	-	Zip	Python 3.9	196.0 byte	2 months ago
DemoLambdaFunction	-	Zip	Python 3.8	731.0 byte	2 months ago
Normal	-	Zip	Python 3.9	705.0 byte	2 months ago
amplify-login-custom-message-3312a243	-	Zip	Node.js 12.x	2.2 kB	3 months ago
amplify-login-create-auth-challenge-3312a243	-	Zip	Node.js 12.x	1.1 kB	3 months ago
amplify-login-define-auth-challenge-3312a243	-	Zip	Node.js 12.x	1.7 kB	3 months ago
amplify-login-verify-auth-challenge-3312a243	-	Zip	Node.js 12.x	2.5 kB	3 months ago

Screenshot of the AWS Lambda console showing the functions.

**AWS Lambda**

**Functions (29)**

Function name	Description	Package type	Runtime	Code size	Last modified
test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr	-	Zip	Node.js 12.x	1.4 kB	2 minutes ago
LoggingDemo	-	Zip	Python 3.9	1.3 kB	1 month ago
PurchaseEventProcessor	-	Zip	Python 3.9	196.0 byte	2 months ago
LambdaEventFilterDemo	-	Zip	Python 3.9	196.0 byte	2 months ago
DemoLambdaFunction	-	Zip	Python 3.8	731.0 byte	2 months ago
Normal	-	Zip	Python 3.9	705.0 byte	2 months ago
amplify-login-custom-message-3312a243	-	Zip	Node.js 12.x	2.2 kB	3 months ago
amplify-login-create-auth-challenge-3312a243	-	Zip	Node.js 12.x	1.1 kB	3 months ago
amplify-login-define-auth-challenge-3312a243	-	Zip	Node.js 12.x	1.7 kB	3 months ago
amplify-login-verify-auth-challenge-3312a243	-	Zip	Node.js 12.x	2.5 kB	3 months ago

Screenshot of the AWS Lambda console showing the function overview for 'test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr'.

**Function Overview:**

- Name:** test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr
- Description:** (empty)
- Last modified:** 3 minutes ago
- Function ARN:** arn:aws:lambda:us-east-1:755314965794:function:test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr
- Application:** test-LambdaStack

**Code Source:**

handler.js

```
1 "use strict";
2 Object.defineProperty(exports, "__esModule", { value: true });
3 exports.handler = void 0;
4 async function handler(event, context) {
5     console.log('Stage Name is: ' + process.env.stage);
6     return {
7         body: 'Hello from a Lambda Function',
8         statusCode: 200,
9     };
10 }
11 exports.handler = handler;
12 // # sourceMappingURL=data:application/json;base64,eyJ2ZXJzaW9uIjozLC0maWxlIjoiGfuZGxlcisInNvdXJzjZVjb3QiOiiilCzb3VyY2VzIjpBImhhbmRsZXIudH
```

console.aws.amazon.com/lambda/home?region=us-east-1#/functions/test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr?tab=configure

aws Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia awssimplified\_user @ 7553-1496-5794

Lambda > Functions > test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr

test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr

This function belongs to an application. Click here to manage it.

Function overview Info

Layers (0)

+ Add trigger + Add destination

Description

Last modified 3 minutes ago

Function ARN arn:aws:lambda:us-east-1:755314965794:function:test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr

Application test-LambdaStack

Code Test Monitor Configuration Aliases Versions

console.aws.amazon.com/lambda/home?region=us-east-1#/functions/test-LambdaStack-LambdaFunctionBF21E41F-65bVvAi27sZr?tab=configure

aws Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia awssimplified\_user @ 7553-1496-5794

Code Test Monitor Configuration Aliases Versions

General configuration Info Edit

Description - Memory 128 MB Timeout 0 min 3 sec

General configuration Info

Triggers Permissions Destinations

Application test-LambdaStack

General configuration Info Edit

Description - Memory 128 MB Timeout 0 min 3 sec

AWS Compute Optimizer Opt in to see memory recommendations for your Lambda functions. View details

General configuration Info

Triggers Permissions Destinations Environment variables Tags VPC Monitoring and operations tools Concurrency Asynchronous invocation Code signing Database proxies File systems State machines

console.aws.amazon.com/lambda/home?region=us-east-1#/functions/test-LambdaStack-LambdaFunctionBF21E41F-65bVvAIz7zR?tab=configure

N. Virginia N. Virginia awssimplified\_user @ 7553-1496-5794

mbdaFunctionBF21E41F-65bVvAIz7zR

Application test-LambdaStack

Code Test Monitor Configuration Aliases Versions

General configuration

Triggers

Permissions

Destinations

**Environment variables**

Tags

VPC

Monitoring and operations tools

Concurrency

Asynchronous invocation

Code signing

Database proxies

File systems

State machines

**Environment variables (1)**

The environment variables below are encrypted at rest with the default Lambda service key.

Key	Value
stageName	test

Edit

Key Value

stageName test