

Use case

CI/CD Pipeline with CodePipeline + CodeBuild

Use case Description

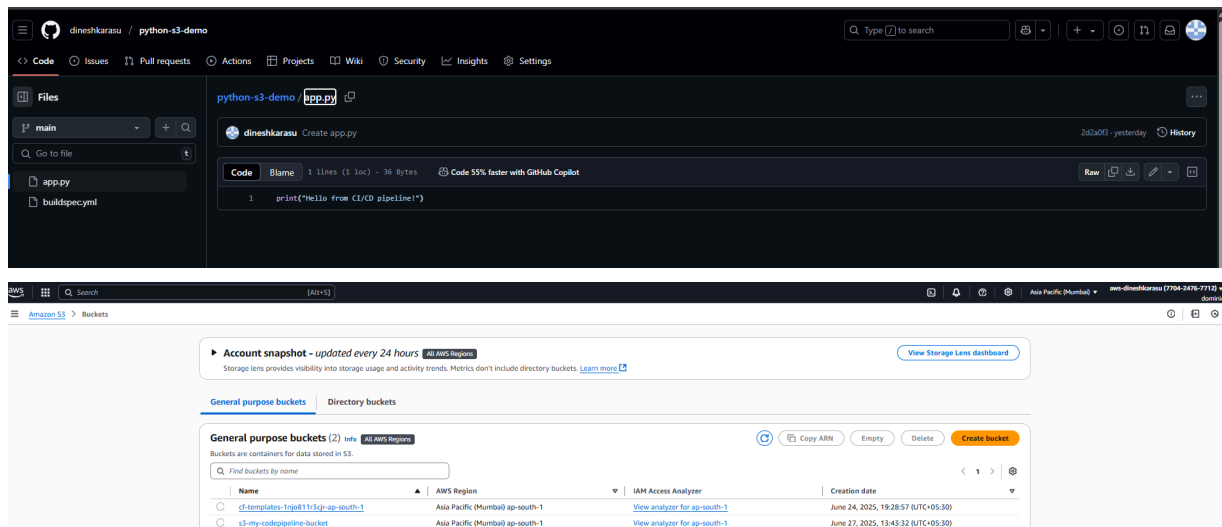
Trigger on code changes from GitHub/CodeCommit.

Build and deploy Python app to S3/EC2/Lambda.

Send pipeline notifications via SNS.

Approach :

1. Create a GitHub repository and add a branch where we upload our files
2. Create an S3 bucket where we deploy the code
3. Create a SNS topic to receive the CodePipeline Updates
4. Create a CodePipeLine [source = GitHub repository and branch , Code Build , Deploy = S3 bucket]
5. As we cannot directly send notification from code pipeline, create an EventBridge rule to trigger SNS
6. Create or upload buildspec.yml file in repository
7. Commit changes in GitHub and verify if the flow is working



Amazon EventBridge > Rules > CodePipeline_Status_Change

CodePipeline_Status_Change

Rule details info

Rule name CodePipeline_Status_Change	Status Enabled	Event bus name default	Type Standard
Description	Rule ARN arn:aws:events:ap-south-1:770424767112:rule/CodePipeline_Status_Change	Event bus ARN arn:aws:events:ap-south-1:770424767112:event-bus/default	

Event pattern info

```

{
  "source": ["aws.codepipeline"],
  "detail-type": ["CodePipeline Pipeline Execution State Change"]
}

```

Copy

The screenshot displays the AWS CodePipeline console for a pipeline named 'PythonApp-CI-CD'. The pipeline is in a 'Completed' state, as indicated by the green checkmarks above the stage boxes. The pipeline consists of three stages: 'Source', 'Build', and 'Deploy'. Each stage has a summary box showing the provider used and the status of the actions. The 'Source' stage uses the 'Source' provider, the 'Build' stage uses the 'AWS CodeBuild' provider, and the 'Deploy' stage uses the 'Amazon S3' provider. The pipeline is currently in a 'Completed' state, and the 'Source' stage is the active stage.

Developer Tools > CodePipeline > Pipelines > PythonApp-CI-CD > bdde314a

Pipeline execution: bdde314a

Run Stop execution < Previous execution Next execution >

Source Build Deploy

All actions succeeded.

Source
dineshkarasu PythonApp-CI-CD
32 minutes ago

Build
All actions succeeded.
Build
All actions succeeded
32 minutes ago

Deploy
All actions succeeded.
Deploy
All actions succeeded
31 minutes ago

Summary Timeline Variables Revisions Stage

Execution summary

Status	Started	Completed	Duration
Succeeded	32 minutes ago	31 minutes ago	39 seconds

Trigger

Commit 79c8d0f pushed in dineshkarasu/python-s3-demo/main

Update buildspec.yml

Pipeline execution ID

bdde314a-09cd-4b12-8ef2-38359dbc7ab7

Latest action execution message

Deployment Succeeded

AWS Notification Message



AWS Notifications <no-reply@sns.amazonaws.com>

To: Dinesh Karasu

Fri 6/27/2025 3:34 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

```
{
  "version": "0",
  "id": "376b7c88-04ca-4d7e-1cc1-285493e27d06",
  "detail-type": "CodePipeline Pipeline Execution State Change",
  "source": "aws.codepipeline",
  "account": "770424767712",
  "time": "2025-06-27T10:04:18Z",
  "region": "ap-south-1",
  "resources": [
    "arn:aws:codepipeline:ap-south-1:770424767712:PythonApp-CI-CD"
  ],
  "detail": {
    "pipeline": "PythonApp-CI-CD",
    "execution-id": "baeff8a5-6a17-4ae1-8b87-4a423f3df7dc",
    "execution-trigger": {
      "trigger-type": "WebhookV2",
      "trigger-detail": {
        "connectionArn": "arn:aws:codeconnections:ap-south-1:770424767712:connection/945ca144-c699-4c2d-9468-78138ed30ed1",
        "repositoryId": "dineshkarasu/python-s3-demo",
        "branchName": "main",
        "commitId": "e4c055b88e292a7b7c8266b6e3b539f3e6d2c368",
        "type": "PUSH_BRANCH"
      },
      "start-time": "2025-06-27T10:04:18.205Z",
      "state": "STARTED",
      "version": "1.0",
      "pipeline-execution-attempt": "1.0"
    }
  }
}
```

AWS Notification Message



AWS Notifications <no-reply@sns.amazonaws.com>

To: Dinesh Karasu

Fri 6/27/2025 3:35 PM

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```
{
  "version": "0",
  "id": "52732672-4e1f-af87-b12f-619af5dc0211",
  "detail-type": "CodePipeline Pipeline Execution State Change",
  "source": "aws.codepipeline",
  "account": "770424767712",
  "time": "2025-06-27T10:04:58Z",
  "region": "ap-south-1",
  "resources": [
    "arn:aws:codepipeline:ap-south-1:770424767712:PythonApp-CI-CD"
  ],
  "detail": {
    "pipeline": "PythonApp-CI-CD",
    "execution-id": "baeff8a5-6a17-4ae1-8b87-4a423f3df7dc",
    "start-time": "2025-06-27T10:04:18.205Z",
    "execution-trigger": {
      "author-display-name": "dineshkarasu",
      "full-repository-name": "dineshkarasu/python-s3-demo",
      "provider-type": "GitHub",
      "author-email": "dkarasu@evoketechnologies.com",
      "branch-name": "main",
      "commit-message": "Update buildspec.yml",
      "author-date": "2025-06-27T10:04:15Z",
      "commit-id": "e4c055b88e292a7b7c8266b6e3b539f3e6d2c368",
      "connection-arn": "arn:aws:codeconnections:ap-south-1:770424767712:connection/945ca144-c699-4c2d-9468-78138ed30ed1",
      "author-id": "dineshkarasu",
      "state": "SUCCEEDED",
      "version": "1.0",
      "pipeline-execution-attempt": "1.0"
    }
  }
}
```

Deploying in Lambda

Approach

1. Create an empty Lambda function
2. Create a GitHub repository and main branch
3. Use existing SNS for email triggering
4. Create CodePipeline
5. Create EventBridge rule to trigger SNS when pipeline status changes
6. Upload buildspec.yml file and commit changes in GitHub repository to test

Function name	Description	Package type	Runtime	Last modified
Send_HealthCheckDetails_to_SQS	-	Zip	Python 3.11	2 days ago
Lambda_Send_HealthCheckEmail	-	Zip	Python 3.11	2 days ago
Publish_CloudWatch_Metric	-	Zip	Python 3.11	2 days ago
Reboot_EC2_Instances	-	Zip	Python 3.11	2 days ago
Lambda_CoDePiPeLiNe_It	-	Zip	Python 3.11	55 seconds ago

python-s3-demo

Lambda_Deploy had recent pushes 20 minutes ago

Compare & pull request

Lambda_Deploy 2 Branches 0 Tags

This branch is 1 commit ahead of main

dineshkarasu Create lambda_function.py 0866c - 20 minutes ago 8 Commits

app.py Create app.py yesterday

buildspec.yml Update buildspec.yml 44 minutes ago

lambda_function.py Create lambda_function.py 20 minutes ago

README

About

No description, website, or topics provided.

Activity

0 stars

0 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Developer Tools > CodePipeline > Pipelines > CDD_Deploy_Lambda > ef4b50a7

Pipeline execution: ef4b50a7

Run Stop execution Previous execution Next execution

Source Build Deploy

Execution summary

Status	Started	Completed	Duration
Succeeded	2 minutes ago	1 minute ago	44 seconds

Trigger

CreatePipeline - daniel

Pipeline execution ID

ef4b50a7-7c41-4da7-a5f7-dc870b9f6ac7

Latest action execution message

Updated function code and published new version successfully.

python-s3-demo / lambda_function.py

dineshkarasu Update lambda_function.py

Code Blame 1 lines (1 loc) - 58 Bytes Code 55% faster with GitHub Copilot

```
1 print("Deploying this logic in lambda from CodePipeline")
```

Developer Tools > CodePipeline > Pipelines > CICD_Deploy_Lambda > 7721554a

Pipeline execution: 7721554a

Run Stop execution < Previous execution Next execution >

Source Build Deploy

Execution summary

Status	Started	Completed	Duration
Successful	2 minutes ago	1 minute ago	39 seconds

Trigger

Commit a7943b79 pushed in dineshkarasu/python-s3-demo/Lambda_Deploy

Update lambda_function.py

Pipeline execution ID

7721554a-a1c6-4c2a-a3a5-2f83b277b460

Latest action execution message

Updated function code and published new version successfully.

AWS Notification Message

AN AWS Notifications <no-reply@sns.amazonaws.com>

To: Dinesh Karasu

Fri 6/27/2025 4:24 PM

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```
{
  "version": "0",
  "id": "bb352f30-1c6c-750b-c3e0-0aefe24e1ca1",
  "detail-type": "CodePipeline Pipeline Execution State Change",
  "source": "aws.codepipeline",
  "account": "770424767712",
  "time": "2025-06-27T10:54:14Z",
  "region": "ap-south-1",
  "resources": [
    {
      "arn": "aws:codepipeline:ap-south-1:770424767712:CICD_Deploy_Lambda",
      "detail": {
        "pipeline": "CICD_Deploy_Lambda",
        "execution-id": "7721554a-a1c6-4c2a-a3a5-2f83b277b460",
        "execution-trigger": {
          "trigger-type": "WebhookV2",
          "trigger-detail": {
            "connectionArn": "arn:aws:codeconnections:ap-south-1:770424767712:connection/9d59c053-99c8-47f8-b963-251cdd08a7da",
            "repositoryId": "dineshkarasu/python-s3-demo",
            "branchName": "Lambda_Deploy",
            "commitId": "a7943b794496835e8588bd3b44012e7bec34ccc",
            "type": "PUSH_BRANCH"
          }
        },
        "start-time": "2025-06-27T10:54:14.389Z",
        "state": "STARTED",
        "version": "1.0",
        "pipeline-execution-attempt": "1.0"
      }
    }
  ]
}
```

AWS Notification Message

AN AWS Notifications <no-reply@sns.amazonaws.com>

To: Dinesh Karasu

Fri 6/27/2025 4:25 PM

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```
{
  "version": "0",
  "id": "4fa69ec1-1590-d93a-c593-a13407921f07",
  "detail-type": "CodePipeline Pipeline Execution State Change",
  "source": "aws.codepipeline",
  "account": "770424767712",
  "time": "2025-06-27T10:54:53Z",
  "region": "ap-south-1",
  "resources": [
    {
      "arn": "aws:codepipeline:ap-south-1:770424767712:CICD_Deploy_Lambda",
      "detail": {
        "pipeline": "CICD_Deploy_Lambda",
        "execution-id": "7721554a-a1c6-4c2a-a3a5-2f83b277b460",
        "start-time": "2025-06-27T10:54:14.389Z",
        "execution-trigger": {
          "author-display-name": "dineshkarasu",
          "full-repository-name": "dineshkarasu/python-s3-demo",
          "provider-type": "GitHub",
          "author-email": "dkarasu@evoketechtechnologies.com",
          "branch-name": "Lambda_Deploy",
          "commit-message": "Update lambda_function.py",
          "author-date": "2025-06-27T10:54:10Z",
          "commit-id": "a7943b794496835e8588bd3b44012e7bec34ccc",
          "connection-arn": "arn:aws:codeconnections:ap-south-1:770424767712:connection/9d59c053-99c8-47f8-b963-251cdd08a7da",
          "author-id": "dineshkarasu",
          "state": "SUCCEEDED",
          "version": "1.0",
          "pipeline-execution-attempt": "1.0"
        }
      }
    }
  ]
}
```

Lambda > Functions > Lambda_CodePipeLine_fn

Lambda_CodePipeLine_fn

Layers

+ Add trigger

Throttle

Copy ARN

Actions

Export to Infrastructure Composer

Download

Description

Last modified
4 minutes ago

Function ARN
arn:aws:lambda:ap-south-1:77042476712:function:Lambda_CodePipeLine_fn

Function URL

Code

Test

Monitor

Configuration

Aliases

Versions

Code source

Upload from

EXPLORER

LAMBDA_CODEPIPELINE_FN

src.py

buildspec.yml

lambda_function.py

1 print("Deploying this logic in lambda from CodePipeline")

2