



Semester: V
Academic Year: 2022-23
Class / Branch: TE IT
Subject: Advanced Devops Lab (ADL)
Name of Instructor: Prof. Manjusha K.

Name of Student:
Student ID:

EXPERIMENT NO. 12

Aim: To create a Lambda function which will log “An Image has been added” once you add an object to a specific bucket in S3

Theory:

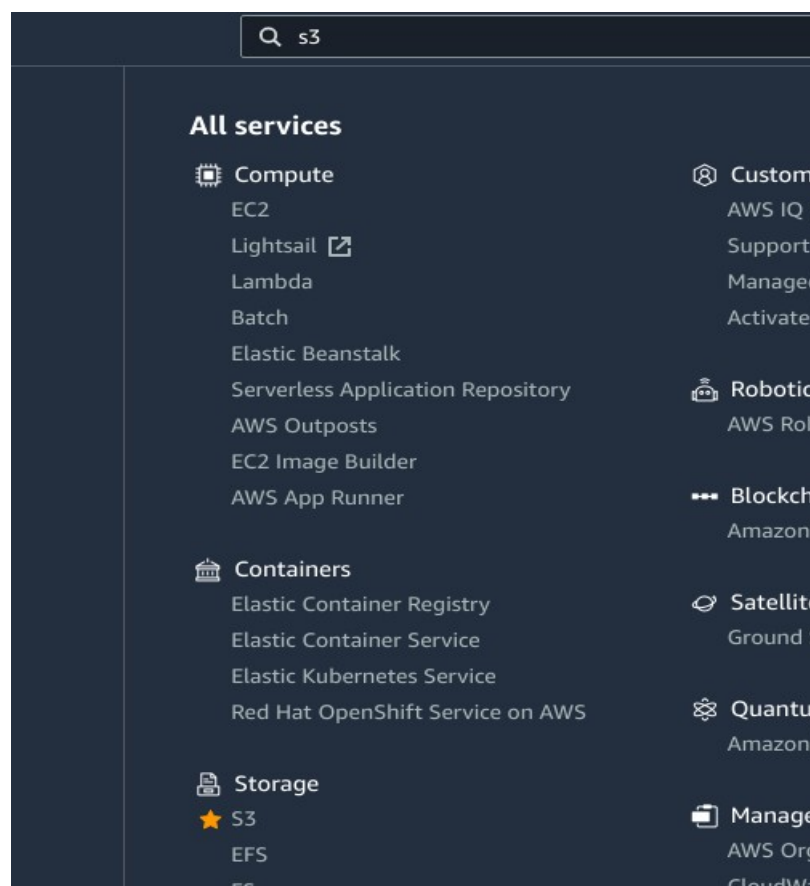
Creating S3 Bucket

Let us start first by creating a s3 bucket in AWS console using the steps given below

—

Step 1

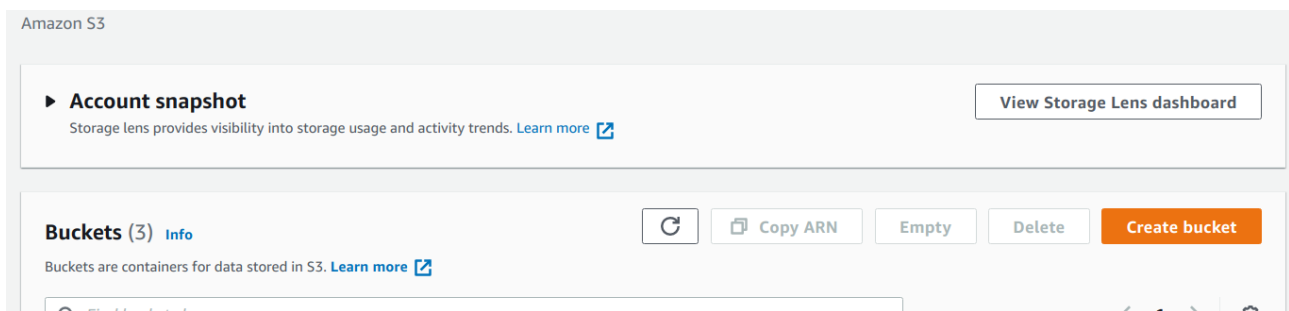
Go to Amazon services and click **S3** in storage section as highlighted in the image given below –





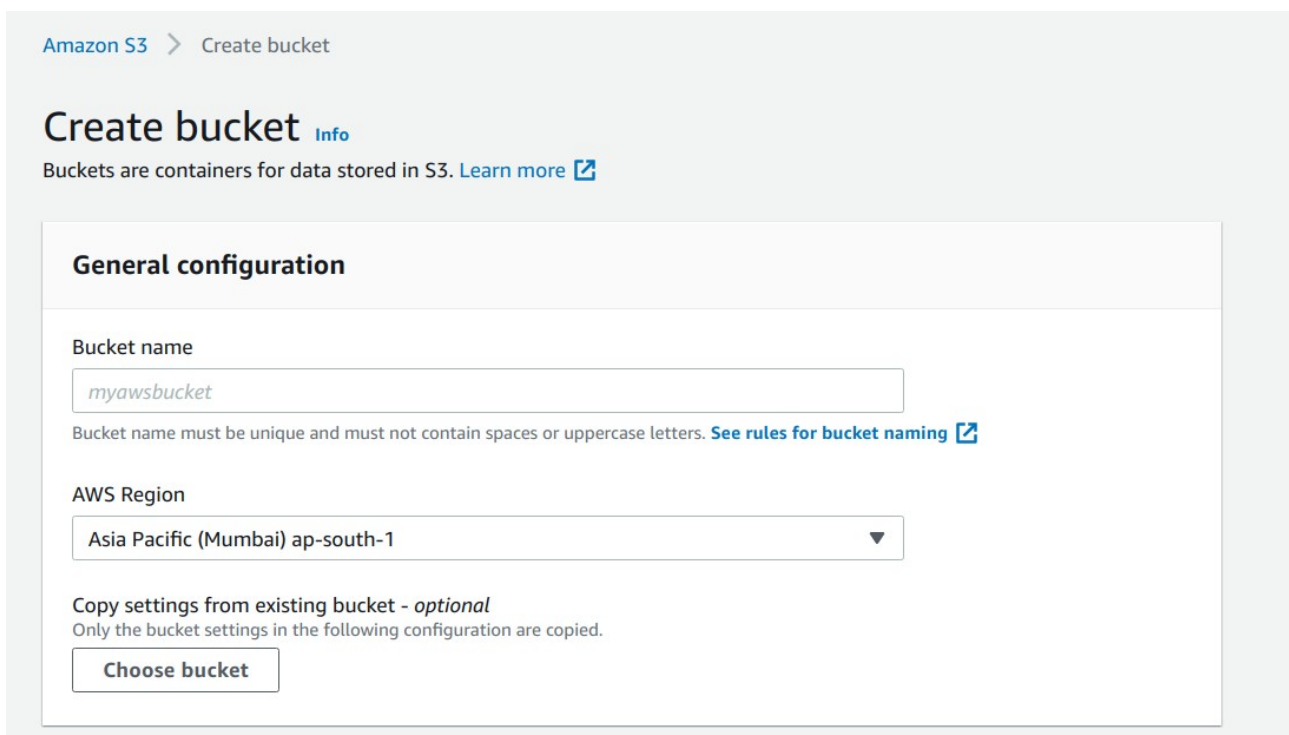
Step 2

Click **S3** storage and **Create bucket** which will store the files uploaded.



Step 3

Once you click Create bucket button, you can see a screen as follows –





Step 4

Enter the details Bucket name, Select the Region and click Create button at the bottom left side. Thus, we have created bucket with name :

<input type="radio"/>	lambdawiths3	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	August 3, 2021, 11:22:23 (UTC+05:30)
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Step 5

Now, click the bucket name and it will ask you to upload files as shown below –

The screenshot shows the AWS S3 console interface. At the top, a green banner indicates "Upload succeeded". Below this, the "Upload: status" section shows a summary of the upload: "Destination: s3://tanmaybucket-2", "Succeeded: 1 file, 12.9 KB (100.00%)", and "Failed: 0 files, 0 B (0%)". The "Files and folders" tab is selected, showing a table with one file: "apsit.png" (Image/png, 12.9 KB, Status: Succeeded). The console also displays the AWS account ID and region (United States (N. Virginia)).

Thus, we are done with bucket creation in S3.

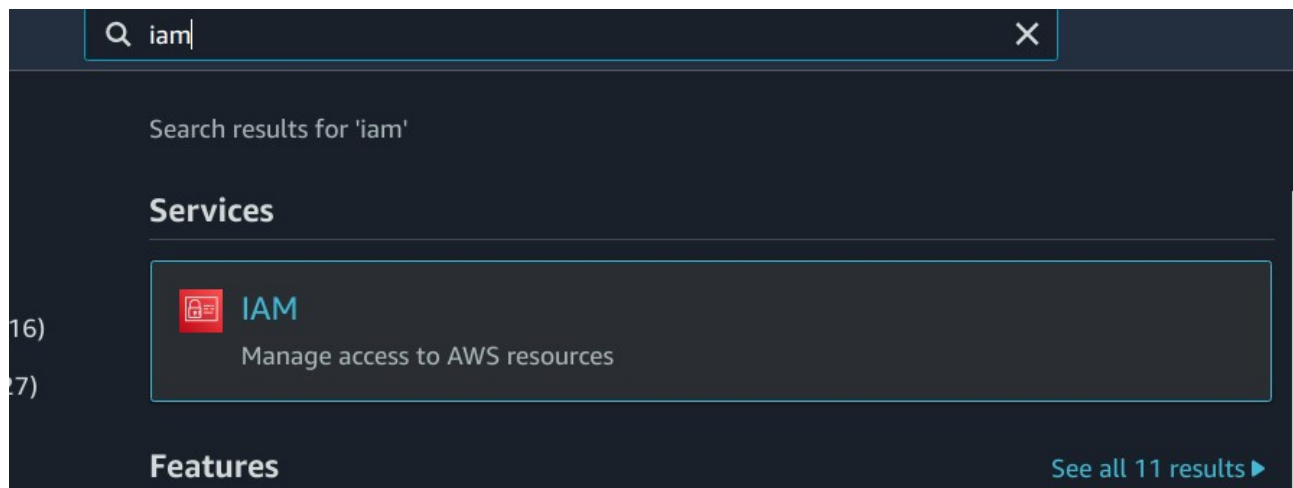
Create Role that Works with S3 and Lambda



To create role that works with S3 and Lambda, please follow the Steps given below –

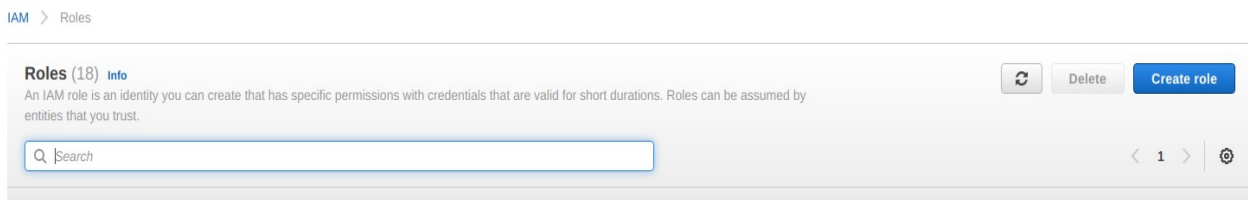
Step 1

Go to AWS services and select IAM as shown below –



Step 2

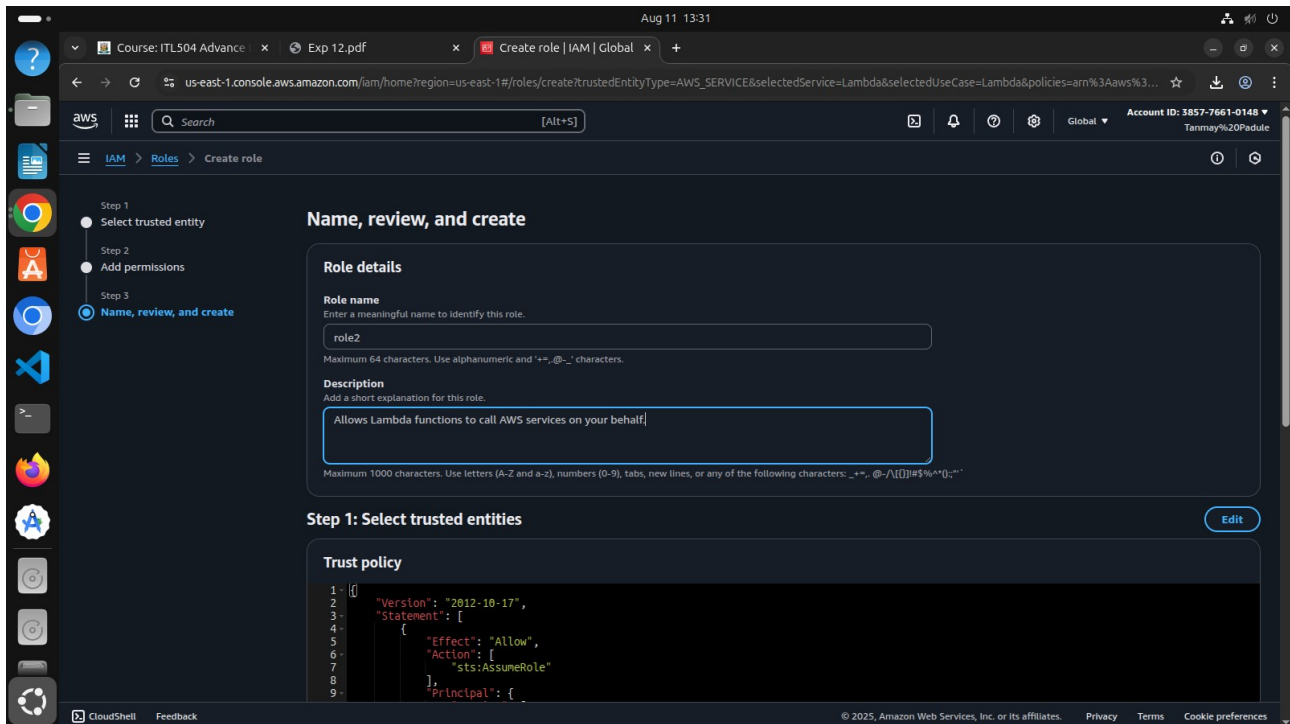
Now, click **IAM** -> **Roles** as shown below –





Step 3

Now, click **Create role** and choose the services that will use this role. Select Lambda and click **Permission** button.



Step 4

Add the permission from below and click Review.

AmazonS3FullAccess, AWSLambdaFullAccess and CloudWatchFullAccess.

Step 5

Observe that we have chosen the following permissions –



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Create role

1

2

3

Review

Provide the required information below and review this role before you create it.

Role name*

Use alphanumeric and '+=,._@-_' characters. Maximum 64 characters.

Role description

Allows Lambda functions to call AWS services on your behalf.

Maximum 1000 characters. Use alphanumeric and '+=,._@-_' characters.

Trusted entities AWS service: lambda.amazonaws.com

Policies



AmazonS3FullAccess



AWSLambda_FullAccess



CloudWatchFullAccess



Permissions boundary Permissions boundary is not set

No tags were added.

Observe that the Policies that we have selected are **AmazonS3FullAccess**, **AWSLambdaFullAccess** and **CloudWatchFullAccess**.

Step 6

Now, enter the Role name, Role description and click Create Role button at the bottom.



lambdawiths3service

AWS Service: lambda

Thus, our role named lambdawiths3service is created.

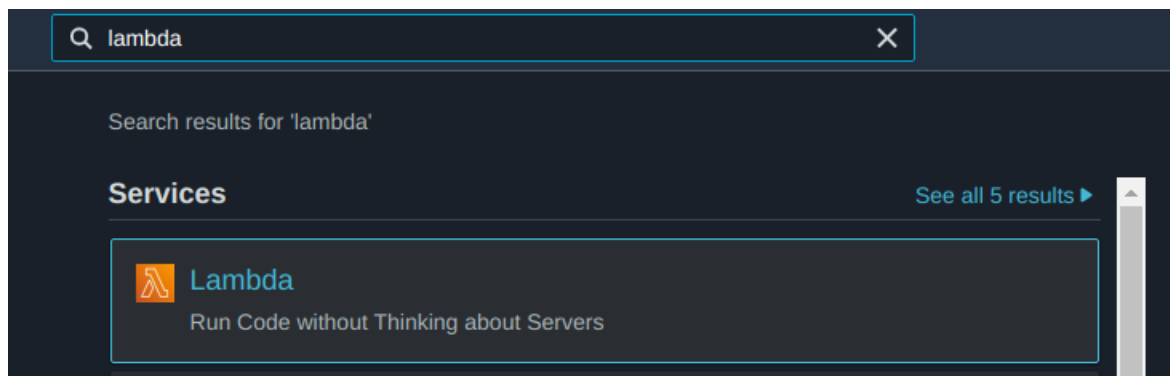
Create Lambda function and Add S3 Trigger



In this section, let us see how to create a Lambda function and add a S3 trigger to it. For this purpose, you will have to follow the Steps given below –

Step 1

Go to AWS Services and select Lambda as shown below –



Step 2

Click **Lambda** and follow the process for adding **Name**. Choose the **Runtime**, **Role** etc. and create the function. The Lambda function that we have created is shown in the screenshot below –



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Course: ITL504 Advance x Exp 12.pdf x Demo2 | Functions | Lam x +

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/Demo2subtab=triggers&tab=configure

Search [Alt+5]

United States (N. Virginia) Account ID: 3857-7661-0148 Tanmay%20Padule

Lambda > Functions > Demo2

Code Test Monitor **Configuration** Aliases Versions

General configuration

Triggers

Permissions

Destinations

Function URL

Environment variables

Tags

VPC

RDS databases

Monitoring and operations tools

Concurrency and recursion detection

Asynchronous invocation

Code signing

Triggers (1) Info

Find triggers

Trigger

S3: tanmaybucket-2
arn:aws:s3::tanmaybucket-2

Details

Fix errors Edit Delete Add trigger

Info Tutorials

Learn how to implement common use cases in AWS Lambda.

Create a simple web app

In this tutorial you will learn how to:

- Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
- Invoke your function through its function URL

Learn more

Start tutorial

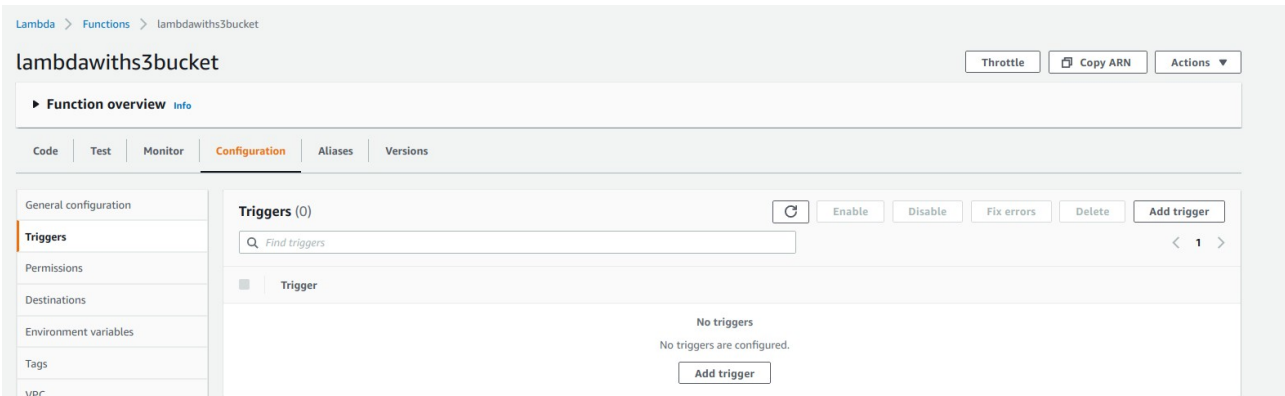
CloudShell Feedback

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Step 3

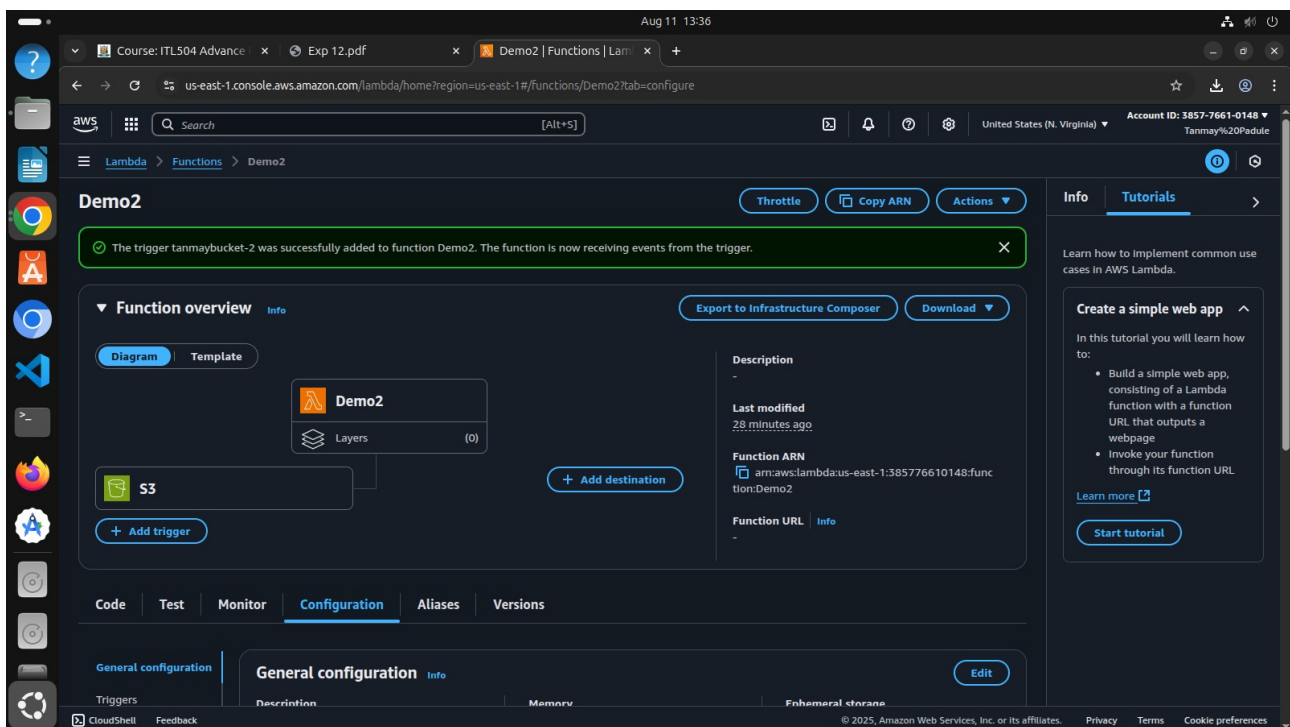
Now let us add the S3 trigger.



Step

4

Choose the trigger from above and add the details as shown below –

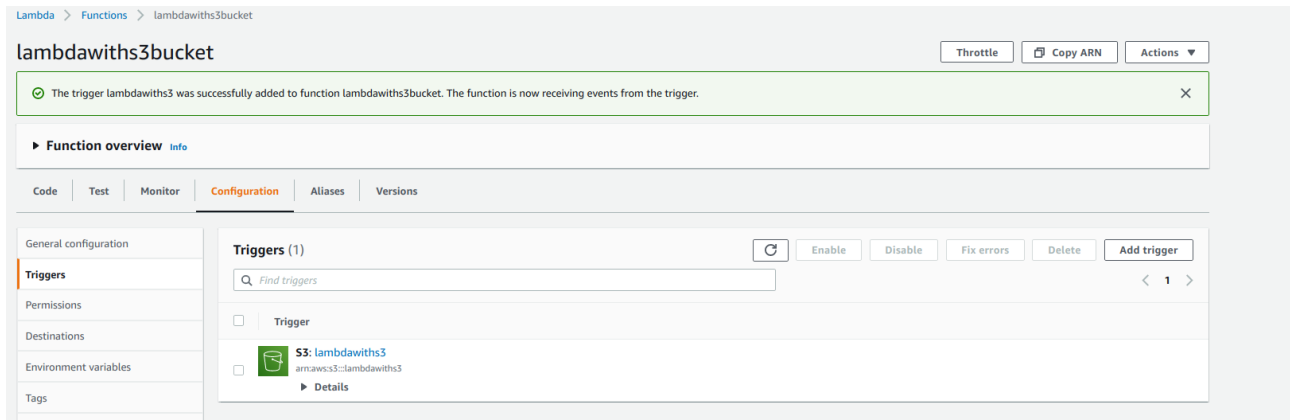


You can add Prefix and File pattern which are used to filter the files added. For Example, to trigger lambda only for .jpg images. as we need to trigger Lambda for all jpg image files uploaded. Click Add button to add the trigger.



Step 5

You can find the the trigger display for the Lambda function as shown below –



Step 6

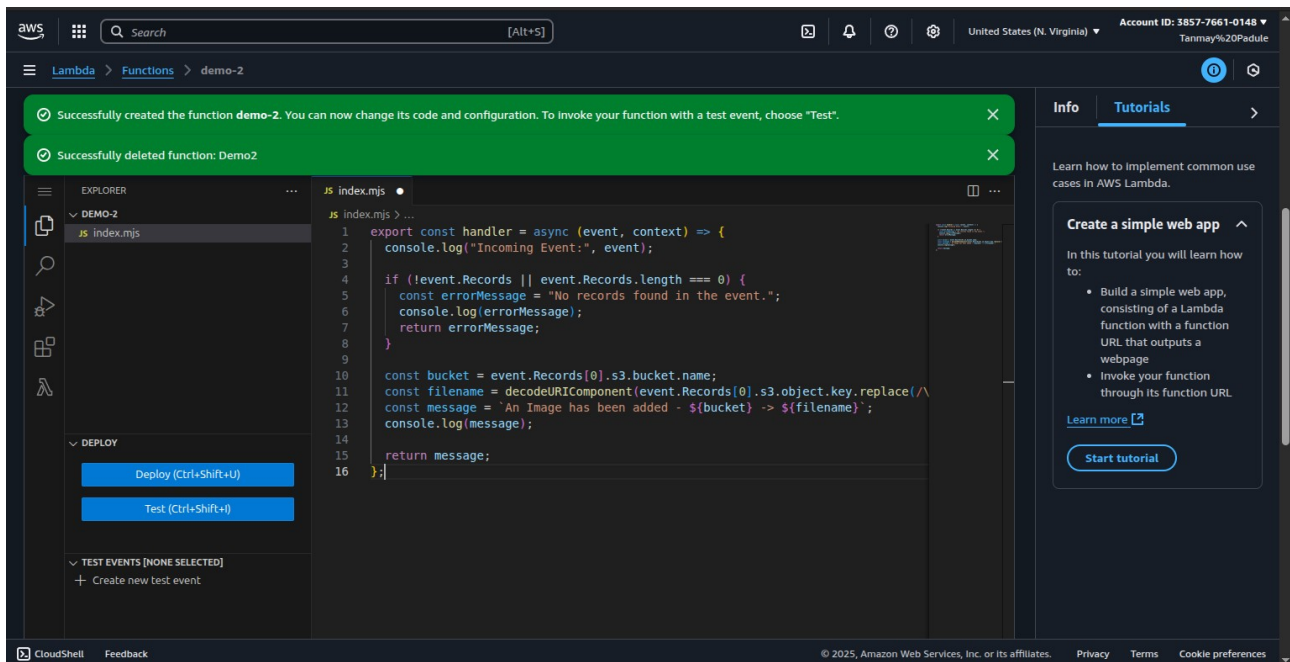
Let's add the details for the aws lambda function. Here, we will use the online editor to add our code and use nodejs as the runtime environment.

To trigger S3 with AWS Lambda, we will have to use S3 event in the code as shown below –



Step 7:

let us save the changes and test the lambda function with S3upload.



Step 8:

Now, save the Lambda function. Open S3 from Amazon services and open the bucket we created earlier namely lambdawiths3.

Upload the image in it as shown below –

Click **Add files** to add files. You can also drag and drop the files. Now, click **Upload** button.



Upload [Info](#)

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)

Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**.

Files and folders (1 Total, 44.0 KB)

[Remove](#)[Add files](#)[Add folder](#)

All files and folders in this table will be uploaded.

[<](#) 1 [>](#)

<input type="checkbox"/>	Name ▲	Folder ▼	Type ▼	Size ▼
<input type="checkbox"/>	apsit_logo.jpg	-	image/jpeg	44.0 KB

Thus, we have uploaded one image in our S3 bucket.

Step 9

To see the trigger details, go to AWS service and select CloudWatch. Open the logs for the Lambda AWS Lambda function gets triggered when file is uploaded in S3 bucket and the details are logged in Cloudwatch as shown below –

An image has been Added -> apsit_logo.jpg you can see in cloudwatch logs.



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The screenshot shows the AWS CloudWatch console for a Lambda function named `/aws/lambda/demo-2`. The left sidebar contains navigation links for CloudWatch, Log groups, Alarms, and Metrics. The main panel displays the 'Log events' for the selected log group. The log events are listed in a table with columns for Timestamp and Message. The events show the function's execution flow, including initialization, request processing, and image uploads to S3.

Timestamp	Message
2025-08-11T08:30:22.422Z	INIT_START Runtime Version: nodejs:22.v48 Runtime Version ARN: arn:aws:lambda:us-east-1::runtime:3319d7328c2e45f97764ca1...
2025-08-11T08:30:22.599Z	START RequestId: ea79191f-7038-4ba0-9615-94deda50cda8 Version: \$LATEST
2025-08-11T08:30:22.602Z	2025-08-11T08:30:22.602Z ea79191f-7038-4ba0-9615-94deda50cda8 INFO Incoming Event: { Records: [{ eventVersion: '2.1', e...
2025-08-11T08:30:22.648Z	2025-08-11T08:30:22.648Z ea79191f-7038-4ba0-9615-94deda50cda8 INFO An Image has been added - tanmaybucket-02 -> apsit.png
2025-08-11T08:30:22.689Z	END RequestId: ea79191f-7038-4ba0-9615-94deda50cda8
2025-08-11T08:30:22.689Z	REPORT RequestId: ea79191f-7038-4ba0-9615-94deda50cda8 Duration: 89.12 ms Billed Duration: 90 ms Memory Size: 128 MB Max...
2025-08-11T08:33:03.067Z	START RequestId: f9af6f46-b5a1-4f8e-88a7-1a1328ccd55f Version: \$LATEST
2025-08-11T08:33:03.068Z	2025-08-11T08:33:03.068Z f9af6f46-b5a1-4f8e-88a7-1a1328ccd55f INFO Incoming Event: { Records: [{ eventVersion: '2.1', e...
2025-08-11T08:33:03.069Z	2025-08-11T08:33:03.069Z f9af6f46-b5a1-4f8e-88a7-1a1328ccd55f INFO An Image has been added - tanmaybucket-02 -> dog.jpeg
2025-08-11T08:33:03.116Z	END RequestId: f9af6f46-b5a1-4f8e-88a7-1a1328ccd55f
2025-08-11T08:33:03.116Z	REPORT RequestId: f9af6f46-b5a1-4f8e-88a7-1a1328ccd55f Duration: 49.01 ms Billed Duration: 50 ms Memory Size: 128 MB Max...

Conclusion: we have studied to create a Lambda function which will log “An Image has been added” once you add an object to a specific bucket in S3