

# 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

The screenshot shows the 'Create bucket' page in the AWS Management Console. The page is titled 'Create bucket' with a sub-header 'Buckets are containers for data stored in S3.' The 'General configuration' section is active, showing the 'AWS Region' as 'US East (N. Virginia) us-east-1'. Under 'Bucket type', 'General purpose' is selected, with a description: 'Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.' The 'Directory' option is also visible. The 'Bucket name' field contains 'mahvishlamdabucket'. Below the field, a note states: 'Bucket name must be unique within the global namespace and follow the bucket naming rules. See rules for bucket naming'. There is a 'Choose bucket' button and a format example: 'Format: s3://bucket/prefix'.

1. Create an AWS S3 bucket and save it.

The screenshot shows the 'Buckets' page in the AWS Management Console. A green banner at the top states 'Successfully created bucket "mahvishlamdabucket"'. Below the banner, there is a section for 'Account snapshot - updated every 24 hours'. The 'General purpose buckets' tab is selected, showing a list of 4 buckets. The table below lists the buckets with their names, regions, IAM Access Analyzer links, and creation dates.

Name	AWS Region	IAM Access Analyzer	Creation date
<a href="#">demo-bucket-676tyr4571dst</a>	US East (N. Virginia) us-east-1	<a href="#">View analyzer for us-east-1</a>	August 24, 2024, 14:22:45 (UTC+05:30)
<a href="#">elasticbeanstalk-us-east-1-938457417220</a>	US East (N. Virginia) us-east-1	<a href="#">View analyzer for us-east-1</a>	August 13, 2024, 14:23:15 (UTC+05:30)
<a href="#">mahvishlamdabucket</a>	US East (N. Virginia) us-east-1	<a href="#">View analyzer for us-east-1</a>	October 7, 2024, 20:03:23 (UTC+05:30)
<a href="#">test-mahvish</a>	US East (N. Virginia) us-east-1	<a href="#">View analyzer for us-east-1</a>	August 12, 2024, 20:04:18 (UTC+05:30)

## 2. Create an AWS Lambda Function, use python 3.11

The screenshot shows the 'Create function' page in the AWS Lambda console. The page title is 'Create function' with an 'Info' link. Below the title, it says 'Choose one of the following options to create your function.' There are three radio button options: 'Author from scratch' (selected), 'Use a blueprint', and 'Container image'. The 'Author from scratch' option has a subtext: 'Start with a simple Hello World example.' Below these options is the 'Basic information' section. It contains a 'Function name' field with the value 'mahvishimageloader'. Below the field, it says 'Function name must be 1 to 64 characters, must be unique to the Region, and can't include spaces. Valid characters are a-z, A-Z, 0-9, hyphens (-), and underscores (\_).' There is a 'Runtime' dropdown menu set to 'Python 3.11' and a refresh icon. Below that is the 'Architecture' section with two radio button options: 'x86\_64' (selected) and 'arm64'.

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Lambda > Functions > Create function

### Create function [Info](#)

Choose one of the following options to create your function.

☒ **Author from scratch**  
Start with a simple Hello World example.

☐ **Use a blueprint**  
Build a Lambda application from sample code and configuration presets for common use cases.

☐ **Container image**  
Select a container image to deploy for your function.

#### Basic information

**Function name**  
Enter a name that describes the purpose of your function.

Function name must be 1 to 64 characters, must be unique to the Region, and can't include spaces. Valid characters are a-z, A-Z, 0-9, hyphens (-), and underscores (\_).

**Runtime** [Info](#)  
Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.

**Architecture** [Info](#)  
Choose the instruction set architecture you want for your function code.

☒ **x86\_64**

☐ **arm64**

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The screenshot shows the 'mahvishimageloader' function page in the AWS Lambda console. At the top, there is a green success message: 'Successfully created the function mahvishimageloader. You can now change its code and configuration. To invoke your function with a test event, choose "Test".' Below the message, the page title is 'mahvishimageloader'. There are buttons for 'Throttle', 'Copy ARN', and 'Actions'. Below these is the 'Function overview' section with tabs for 'Diagram' and 'Template'. The 'Diagram' tab is active, showing a diagram of the function with a box labeled 'mahvishimageloader' and a 'Layers' section with '(0)' layers. There are buttons for '+ Add trigger' and '+ Add destination'. To the right of the diagram is a 'Description' section with fields for 'Description', 'Last modified' (10 seconds ago), 'Function ARN' (arn:aws:lambda:us-east-1:938457417220:function:mahvishimageloader), and 'Function URL' (Info). Below the diagram and description are tabs for 'Code', 'Test', 'Monitor', 'Configuration', 'Aliases', and 'Versions'.

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Successfully created the function mahvishimageloader. You can now change its code and configuration. To invoke your function with a test event, choose "Test".

Lambda > Functions > mahvishimageloader


### mahvishimageloader

Throttle Copy ARN Actions

Export to Application Composer Download

#### Function overview [Info](#)

Diagram Template

 mahvishimageloader

Layers (0)

+ Add trigger + Add destination

Description

Last modified  
10 seconds ago

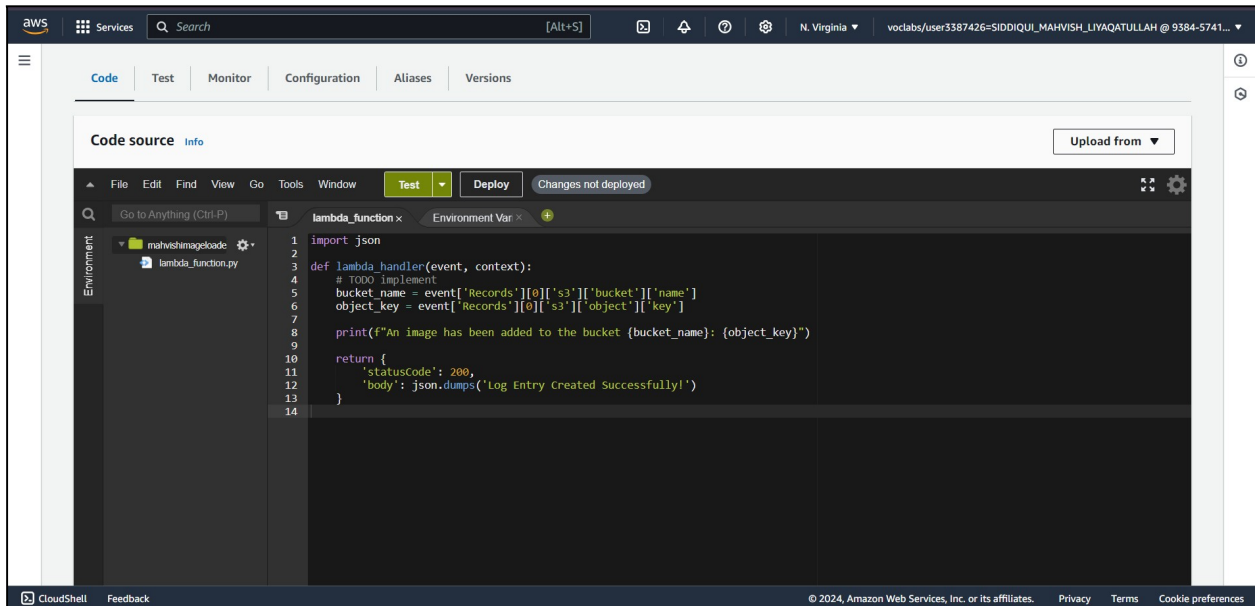
Function ARN  
arn:aws:lambda:us-east-1:938457417220:function:mahvishimageloader

Function URL [Info](#)

Code Test Monitor Configuration Aliases Versions

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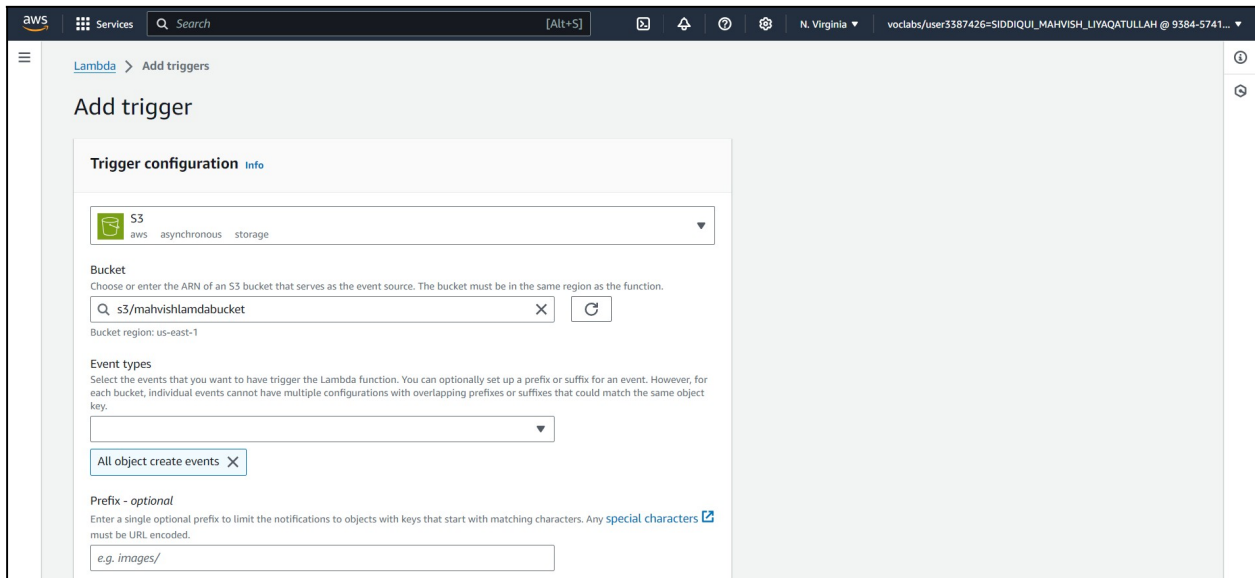
3. Change the code such that it prints “An image has been added to the bucket” when triggered.



The screenshot shows the AWS Lambda console interface. The 'Code source' tab is selected, displaying a code editor with a Python lambda function. The function is named 'lambda\_handler' and takes 'event' and 'context' as arguments. It uses 'event['Records'][0]['s3']['bucket']['name']' to get the bucket name and 'event['Records'][0]['s3']['object']['key']' to get the object key. The function prints a message: 'An image has been added to the bucket (bucket\_name): (object\_key)'. The return statement is a JSON object with 'statusCode': 200 and 'body': 'Log Entry Created Successfully!'. The console also shows a file explorer on the left with 'mahvishimagecode' and 'lambda\_function.py'.

```
1 import json
2
3 def lambda_handler(event, context):
4     # TODO implement
5     bucket_name = event['Records'][0]['s3']['bucket']['name']
6     object_key = event['Records'][0]['s3']['object']['key']
7
8     print(f"An image has been added to the bucket (bucket_name): (object_key)")
9
10    return {
11        'statusCode': 200,
12        'body': json.dumps('Log Entry Created Successfully!')
13    }
14
```

4. Add S3 bucket in your triggers and select the name of your S3 bucket.



The screenshot shows the 'Add trigger' configuration page in the AWS Lambda console. The 'Trigger configuration' section is active. The 'S3' trigger type is selected. The 'Bucket' field contains 's3/mahvishlambucket'. The 'Event types' section shows 'All object create events' selected. The 'Prefix - optional' field is empty.

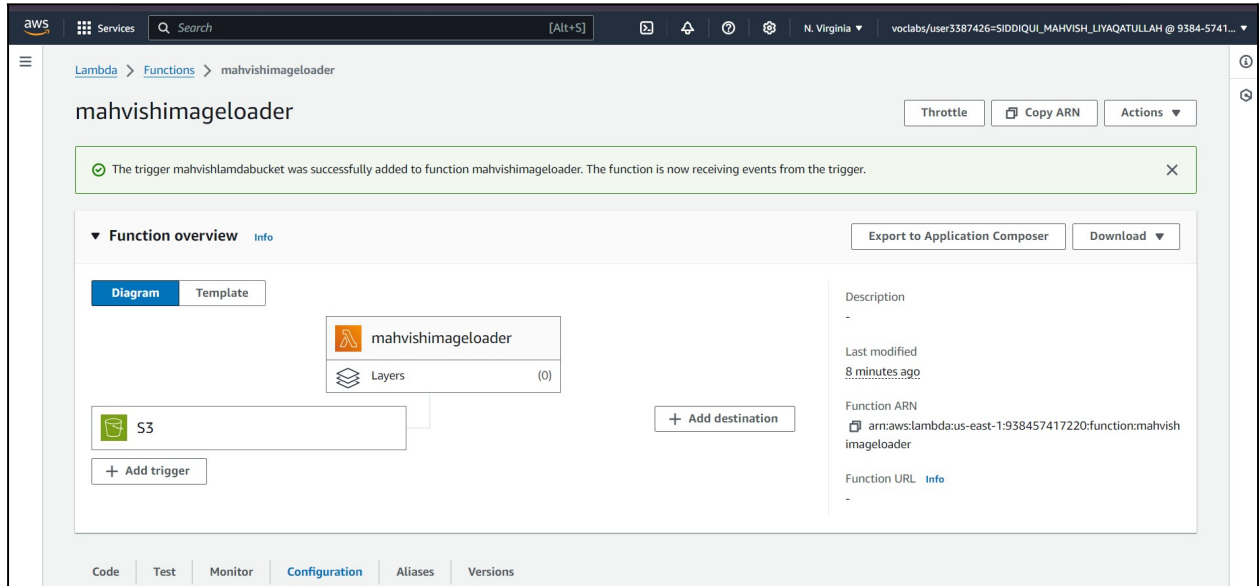
**Trigger configuration**

**S3** (aws asynchronous storage)

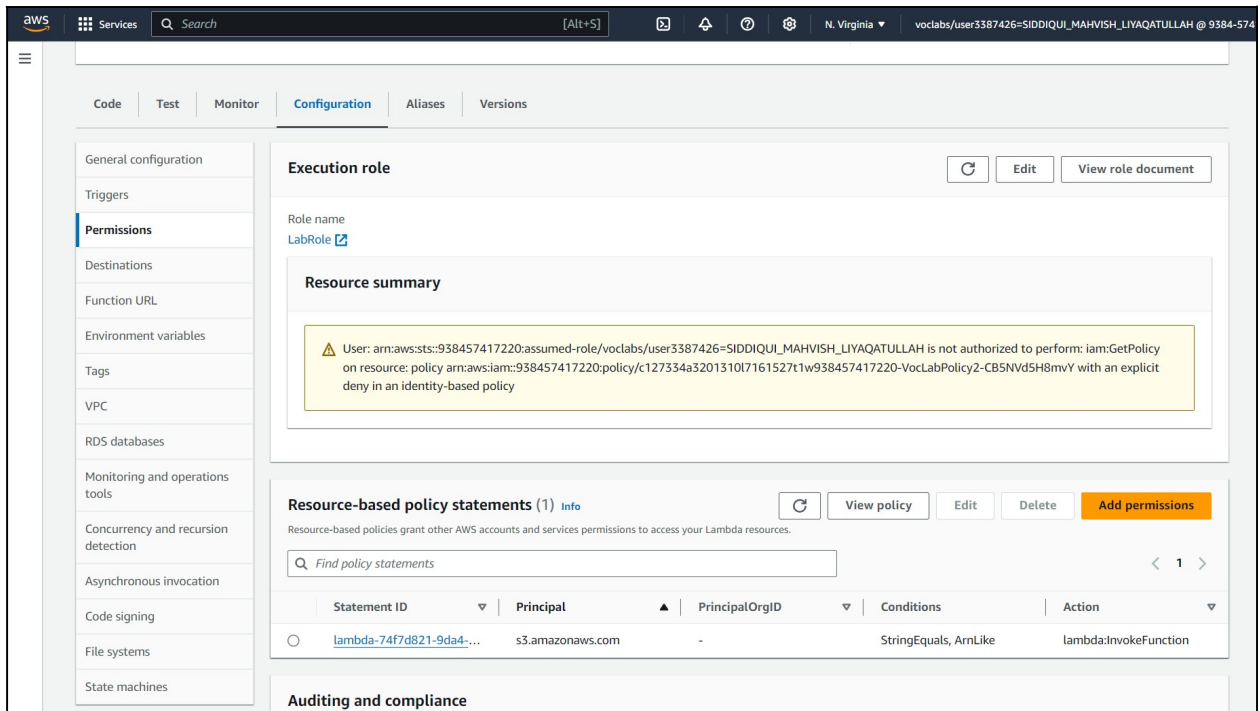
**Bucket**  
Choose or enter the ARN of an S3 bucket that serves as the event source. The bucket must be in the same region as the function.  
s3/mahvishlambucket  
Bucket region: us-east-1

**Event types**  
Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.  
All object create events

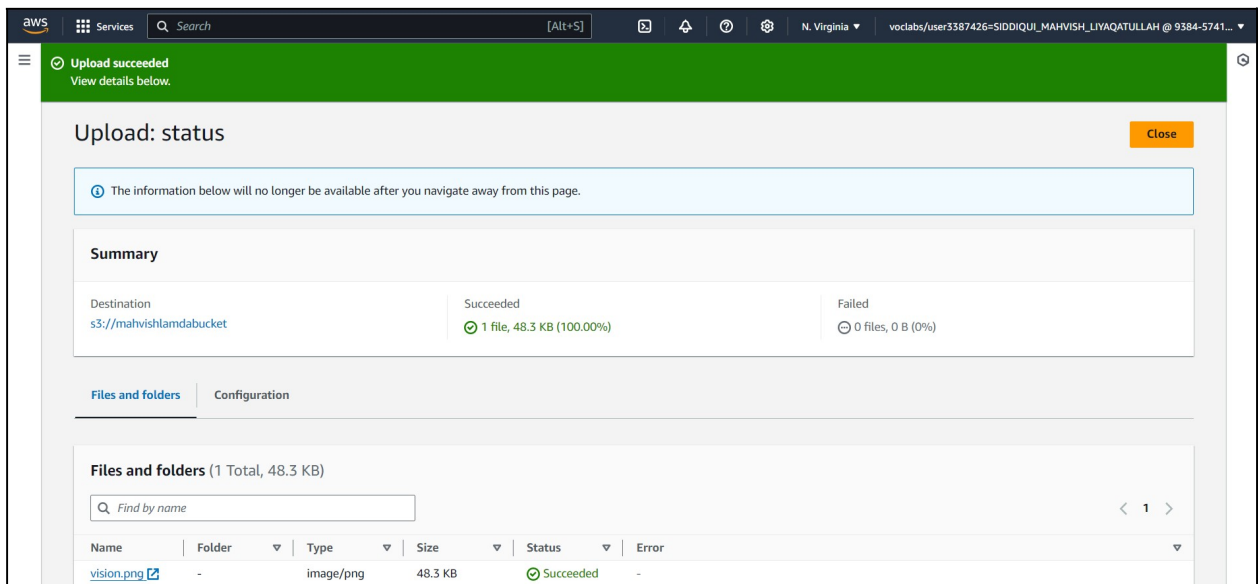
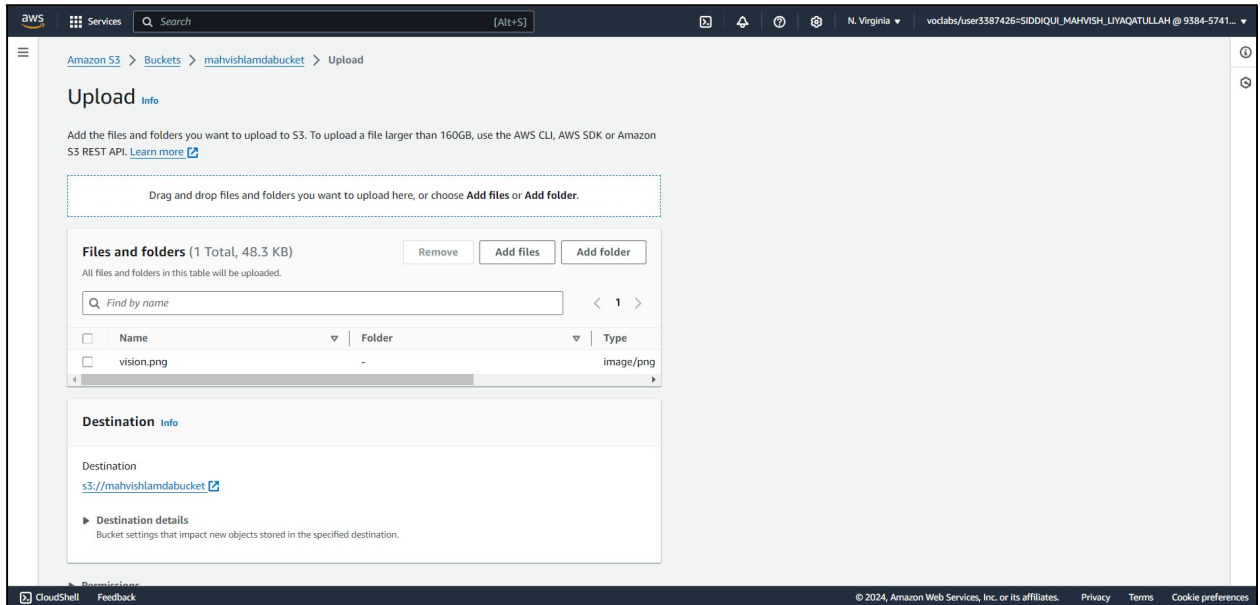
**Prefix - optional**  
Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters. Any special characters must be URL encoded.  
e.g. images/



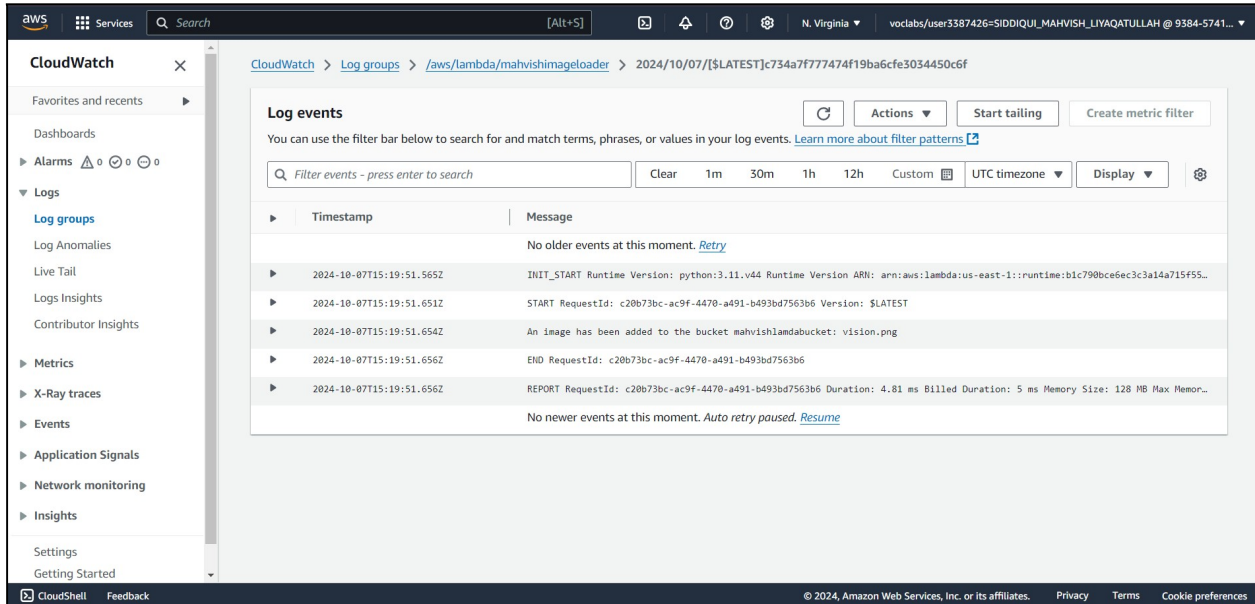
## 5. Go to your S3 bucket



## 6. Upload an image inside the s3 bucket



7. Go back to your Lambda function and under monitor select 'open cloudwatch logs'  
Here you can see the message: An image has been added to the bucket.



The screenshot displays the AWS CloudWatch console interface. The left sidebar shows the navigation menu with 'Logs' selected. The main panel shows the 'Log events' view for the Lambda function `/aws/lambda/mahvishimageloader`. The breadcrumb trail indicates the path: `CloudWatch > Log groups > /aws/lambda/mahvishimageloader > 2024/10/07/[LATEST]c734a7f77747f19ba6cfe3034450c6f`.

The 'Log events' section includes a search bar with the placeholder text 'Filter events - press enter to search', a 'Clear' button, and time range filters (1m, 30m, 1h, 12h, Custom). There are also buttons for 'Start tailing' and 'Create metric filter'. Below the search bar, a table displays the log events.

Timestamp	Message
No older events at this moment. <a href="#">Retry</a>	
2024-10-07T15:19:51.565Z	INIT_START Runtime Version: python:3.11.v44 Runtime Version ARN: arn:aws:lambda:us-east-1::runtime:b1c790bce6ec3c3a14a715f55...
2024-10-07T15:19:51.651Z	START RequestId: c20b73bc-ac9f-4470-a491-b493bd7563b6 Version: \$LATEST
2024-10-07T15:19:51.654Z	An image has been added to the bucket mahvishlandabucket: vision.png
2024-10-07T15:19:51.656Z	END RequestId: c20b73bc-ac9f-4470-a491-b493bd7563b6
2024-10-07T15:19:51.656Z	REPORT RequestId: c20b73bc-ac9f-4470-a491-b493bd7563b6 Duration: 4.81 ms Billed Duration: 5 ms Memory Size: 128 MB Max Memor...
No newer events at this moment. Auto retry paused. <a href="#">Resume</a>	

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