

ADVANCE DEVOPS EXP-12

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D15A/64

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.

Step 1: Login to your AWS Personal account. Now open S3 from services and click on create S3 bucket and create a bucket.



Step 2: Now Give a name to the Bucket, select general purpose project and deselect the Block public access and keep other this to default.

Create bucket [Info](#)

Buckets are containers for data stored in S3.

General configuration

AWS Region

US East (Ohio) us-east-2

Bucket name [Info](#)

RiyaBucket

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#) [↗](#)

Copy settings from existing bucket - *optional*

Only the bucket settings in the following configuration are copied.

Choose bucket

Format: s3://bucket/prefix

Object Ownership [Info](#)

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

☒ **ACLs disabled (recommended)**

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

☐ **ACLs enabled**

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership

Bucket owner enforced

aws

Services

Search

[Alt+S]

Ohio

Riya

☑ Successfully created bucket "riya17bucket"

View details

×

ℹ

☰

To upload files and folders, or to configure additional bucket settings, choose [View details](#).

🔄

General purpose buckets

Directory buckets

General purpose buckets (3) Info All AWS Regions

🔄

📄 Copy ARN

Empty

Delete

Create bucket

Buckets are containers for data stored in S3.

🔍 Find buckets by name

< 1 > ⚙

	Name ▲	AWS Region ▼	IAM Access Analyzer	Creation date ▼
<input type="radio"/>	elasticbeanstalk-us-east-2-767828742273	US East (Ohio) us-east-2	View analyzer for us-east-2	September 24, 2024, 01:06:52 (UTC+05:30)
<input type="radio"/>	riya1-website	Europe (Stockholm) eu-north-1	View analyzer for eu-north-1	August 12, 2024, 21:45:37 (UTC+05:30)
<input type="radio"/>	riya17bucket	US East (Ohio) us-east-2	View analyzer for us-east-2	October 13, 2024, 13:41:42 (UTC+05:30)

Step 3: Open lambda console and click on create function button. Give a name to your Lambda function, Select the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby. So will select Python 3.12, Architecture as x86, and existing Execution role

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.

Python 3.12

Architecture Info
Choose the instruction set architecture you want for your function code.

☒ x86_64

☐ arm64

Permissions Info
By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

▼ Change default execution role

Execution role
Choose a role that defines the permissions of your function. To create a custom role, go to the IAM console [🔗](#).

☒ Create a new role with basic Lambda permissions

☐ Use an existing role

☐ Create a new role from AWS policy templates

🕒 Role creation might take a few minutes. Please do not delete the role or edit the trust or permissions policies in this role.

Lambda will create an execution role named `riya_lambda-role-y63fmxrt`, with permission to upload logs to Amazon CloudWatch Logs.

▼ **Additional Configurations**

Use additional configurations to set up code signing, function URL, tags, and Amazon VPC access for your function.

☐ **Enable Code signing** Info
Use code signing configurations to ensure that the code has been signed by an approved source and has not been altered since signing.

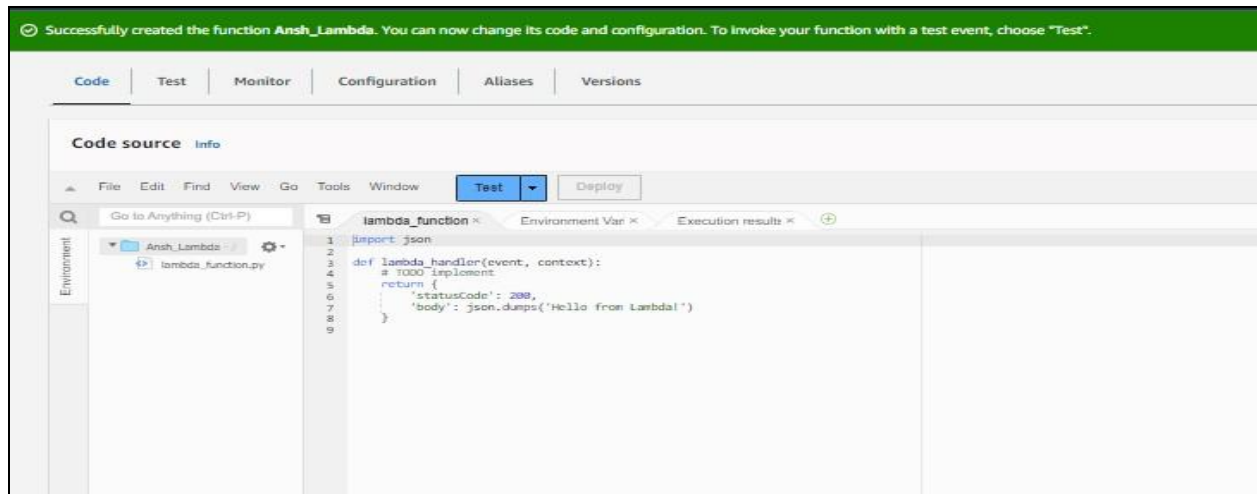
☐ **Enable function URL** Info
Use function URLs to assign HTTP(S) endpoints to your Lambda function.

☐ **Enable tags** Info
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources, track your AWS costs, and enforce attribute-based access control.

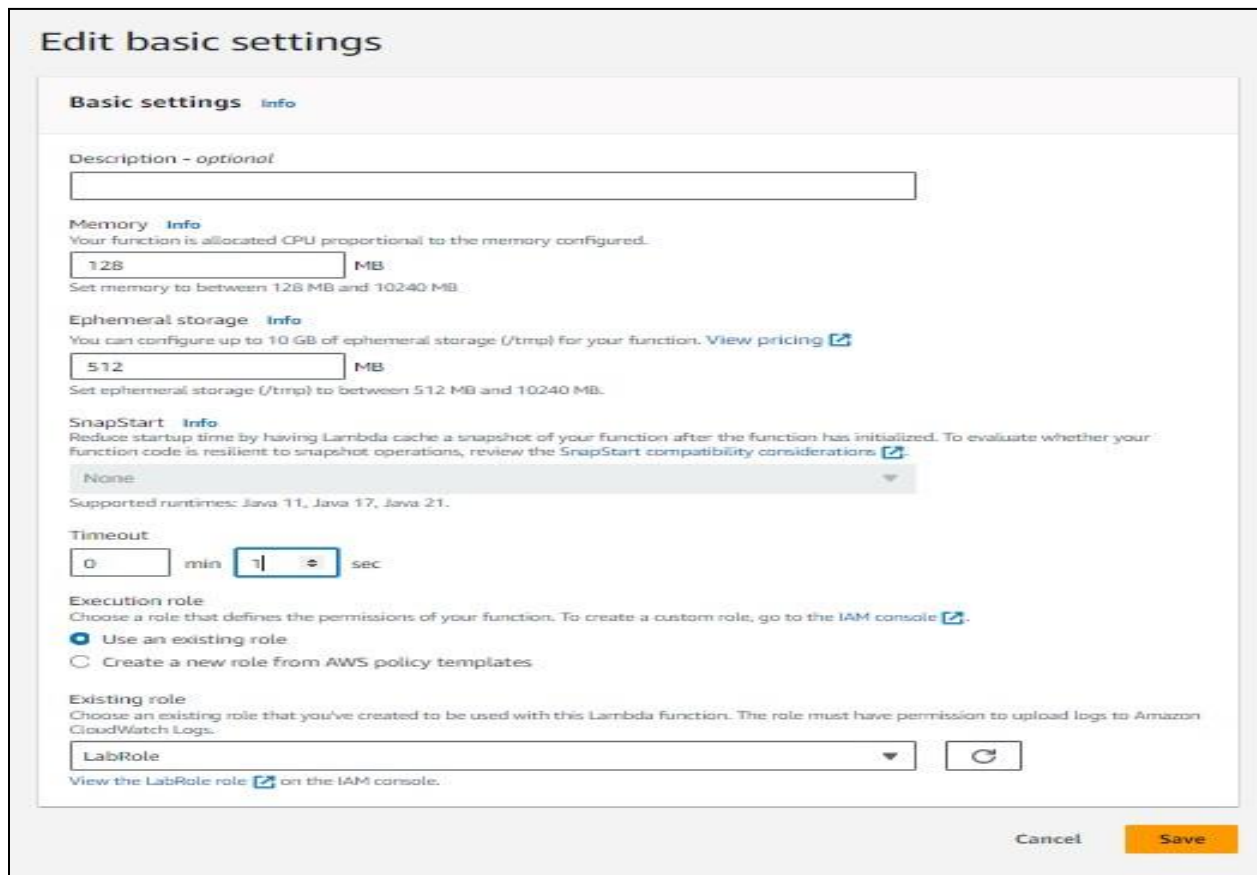
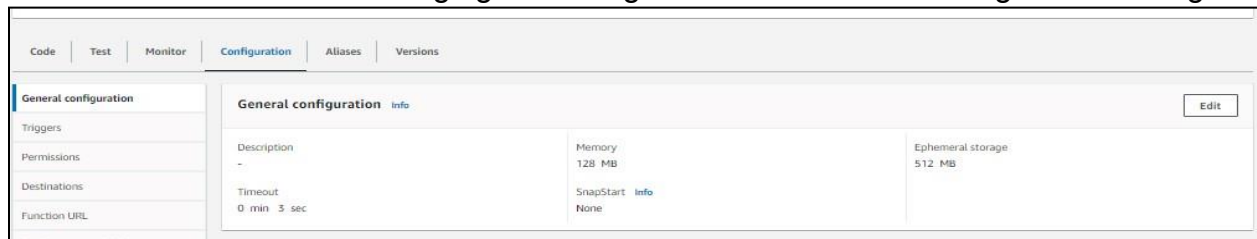
☐ **Enable VPC** Info
Connect your function to a VPC to access private resources during invocation.

Cancel

Create function



So See or Edit the basic settings go to configuration then click on edit general setting.



Step 4: Now Click on the Test tab then select Create a new event, give a name to the event and select Event Sharing to private, and select s3 put template.

Code | **Test** | Monitor | Configuration | Aliases | Versions

Test event [Info](#) Save Test

To invoke your function without saving an event, configure the JSON event, then choose Test.

Test event action

☒ Create new event Edit saved event

Event name

Ansh_Bucket

Maximum of 25 characters consisting of letters, numbers, dots, hyphens and underscores.

Event sharing settings

☒ Private
This event is only available in the Lambda console and to the event creator. You can configure a total of 10. [Learn more](#)

☐ Shareable
This event is available to IAM users within the same account who have permissions to access and use shareable events. [Learn more](#)

Template - optional

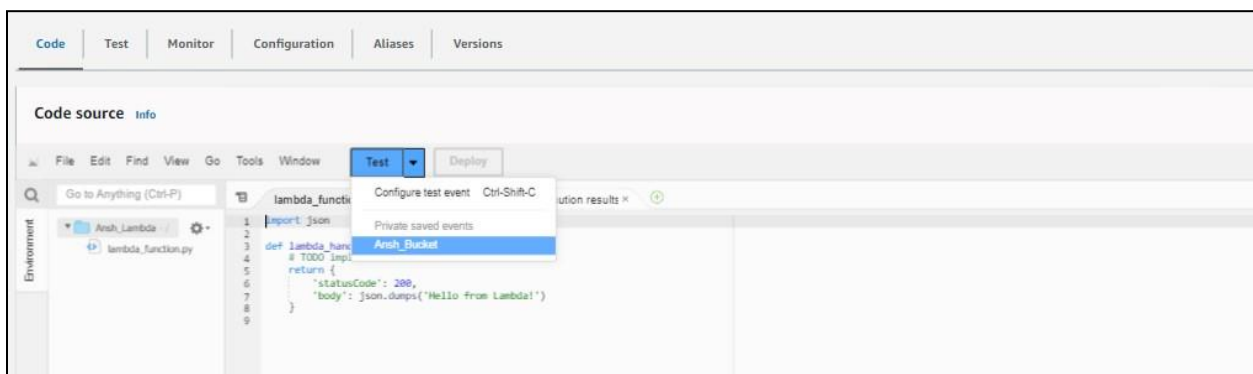
s3-put

Event JSON Format JSON

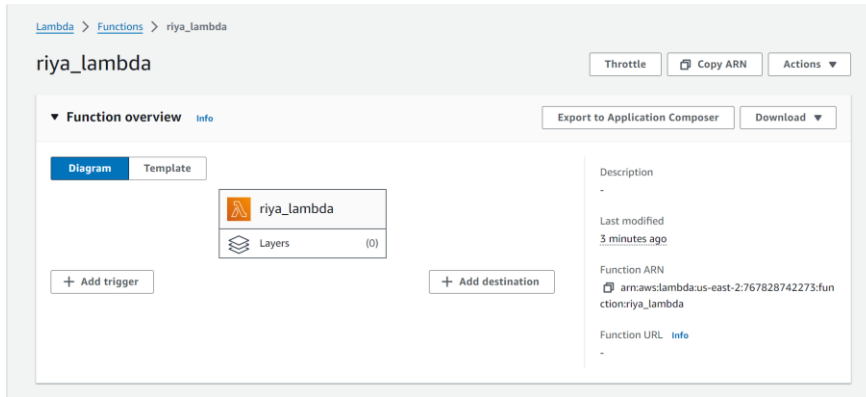
```
1. [
2.   "Records": [
3.     {
4.       "eventVersion": "2.0",
5.       "eventSource": "aws:s3",
6.       "awsRegion": "us-east-1",
7.       "eventTime": "1970-01-01T00:00:00Z",
8.       "eventName": "ObjectCreated:Put",
9.       "userIdentity": {
10.        "principalId": "EXAMPLE"
11.      },
12.      "requestParameters": {
13.        "sourceIPAddress": "127.0.0.1"
14.      },
15.      "responseElements": {
16.        "x-amz-request-id": "EXAMPLE123456789",
17.        "x-amz-id-2": "EXAMPLE123/5678abcdefgijklambdasawesomemnopqrstuvwxyzABCDEFGH"
18.      },
19.      "s3": {
20.        "s3SchemaVersion": "1.0",
21.        "configurationId": "testConfigRule",
22.        "bucket": {
23.          "name": "example-bucket",
24.          "ownerIdentity": {
25.            "principalId": "EXAMPLE"
26.          },
27.          "arn": "arn:aws:s3:::example-bucket"
28.        },
29.        "object": {
30.          "key": "test%2Fkey",
```

1:1 JSON Spaces: 2

Step 5: Now In Code section select the created event from the dropdown .




Step 6: Now In the Lambda function click on add trigger.



Now select the source as S3 then select the bucket name from the dropdown, keep other things to default and also you can add prefix to image.

Trigger configuration [Info](#)

 **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.

Bucket region: us-east-2

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.

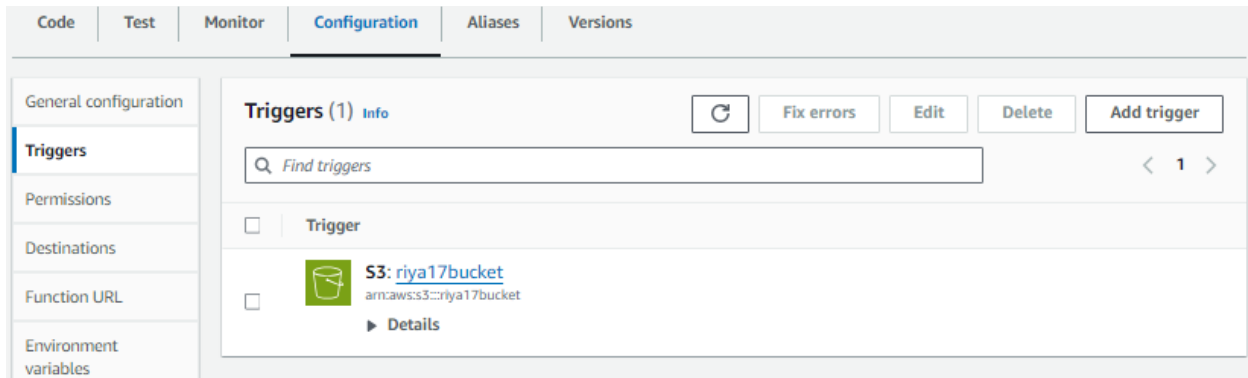
Prefix - optional
Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters. Any special characters [must be URL encoded](#).

Suffix - optional
Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters. Any special characters [must be URL encoded](#).

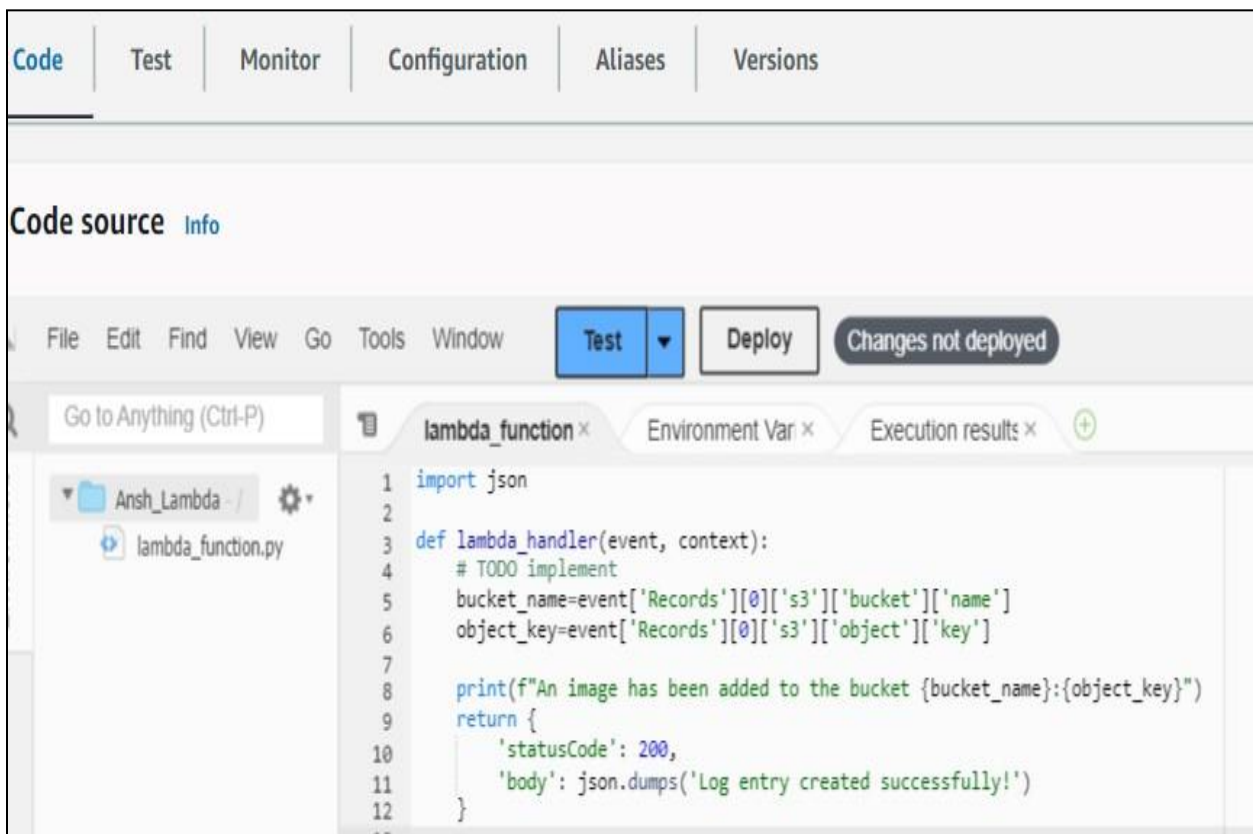
Recursive invocation
If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. [Learn more](#)

☒ I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

Lambda will add the necessary permissions for AWS S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.




Step 7: Now Write code that logs a message like “An Image has been added” when triggered. Save the file and click on deploy



Step 8: Now upload any image to the bucket

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 folder**.

Files and folders (1 Total, 26.6 KB)

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

All files and folders in this table will be uploaded.

 *Find by name*

< 1 >

<input type="checkbox"/>	Name ▾	Folder ▾	Type ▾	Size ▾
<input type="checkbox"/>	Screenshot 2...	-	image/png	26.6 KB

Destination [Info](#)

Destination

[s3://riya17bucket](#) 

► **Destination details**

Bucket settings that impact new objects stored in the specified destination.

► **Permissions**

Grant public access and access to other AWS accounts.

► **Properties**

Specify storage class, encryption settings, tags, and more.

[Cancel](#)[Upload](#)

Upload succeeded
View details below.

Upload: status Close

The information below will no longer be available after you navigate away from this page.

Summary

Destination s3://riya17bucket	Succeeded 1 file, 26.6 KB (100.00%)	Failed 0 files, 0 B (0%)
----------------------------------	--	-----------------------------

Files and folders

Files and folders (1 Total, 26.6 KB)

Find by name

Name	Folder	Type	Size	Status	Error
Screenshot 2...	-	image/png	26.6 KB	Succeeded	-

Step 10: Now to click on test in lambda to check whether it is giving log when image is added to S3.

Code Test Monitor Configuration Aliases Versions

Code source Info Upload from

File Edit Find View Go Tools Window Test Deploy

Go to Anything (Ctrl-P)

Environment

- Ansh_Lambda
 - lambda_function.py

Execution results

Test Event Name: Ansh_Bucket

Status: Succeeded | Max memory used: 32 MB | Time: 2.20 ms

Response

```
{
  "statusCode": 200,
  "body": "\"Log entry created successfully!\""
}
```

Function Logs

```
START RequestId: a6553fea-5799-4180-8571-a3aff8306732 Version: $LATEST
An image has been added to the bucket example-bucket:test2Pkey
END RequestId: a6553fea-5799-4180-8571-a3aff8306732
REPORT RequestId: a6553fea-5799-4180-8571-a3aff8306732 Duration: 2.20 ms Billed Duration: 3 ms Memory Size: 128 MB Max Memory Used: 32 MB Init Duration: 93.83 ms
```

Request ID: a6553fea-5799-4180-8571-a3aff8306732

Step 11: Now Lets see the log on Cloud watch.To see it go to monitor section and then click on view cloudwatch logs.



Log events

[↻](#) [Actions ▼](#) [Start tailing](#) [Create metric filter](#)

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

[Clear](#) [1m](#) [30m](#) [1h](#) [12h](#) [Custom](#) [UTC timezone ▼](#) [Display ▼](#) [⚙️](#)

▶	Timestamp	Message
		No older events at this moment. Retry
▶	2024-10-13T08:33:37.853Z	INIT_START Runtime Version: python:3.12.v36 Runtime Version ARN: arn:aws:lambda:us-east-2::runtime:188d9ca2e2714ff5637...
▶	2024-10-13T08:33:37.949Z	START RequestId: dce5596e-7da9-44c6-b40c-c6e0da44e2c3 Version: \$LATEST
▶	2024-10-13T08:33:37.950Z	An image has been added to the bucket example-bucket:test%2Fkey
▶	2024-10-13T08:33:37.954Z	END RequestId: dce5596e-7da9-44c6-b40c-c6e0da44e2c3
▶	2024-10-13T08:33:37.954Z	REPORT RequestId: dce5596e-7da9-44c6-b40c-c6e0da44e2c3 Duration: 2.14 ms Billed Duration: 3 ms Memory Size: 128 MB Max...
		No newer events at this moment. Auto retry paused. Resume