

Assignment: AWS Lambda with SQS Trigger

Submitted by:

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Problem Statement

You work for XYZ Corporation. Your corporation wants to launch a new web-based application and they do not want their servers to be running all the time. It should also be managed by AWS. Implement suitable solutions.

Tasks To Be Performed:

1. Create a sample Python Lambda function.
 2. Set the Lambda Trigger as SQS and send a message to test invocations
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Solution Explanation

To meet the requirement of a serverless and fully managed setup, we used AWS Lambda (a serverless compute service) and Amazon SQS (Simple Queue Service) as a trigger.

Whenever a message is sent to the SQS queue, Lambda automatically executes and processes that message.

This ensures servers don't need to run continuously, reducing cost and management overhead.

Tasks Performed

Step 1: Create IAM Role for Lambda

Go to IAM → Roles → Create role.

Choose AWS Service → Lambda.

Attach these policies:

AWSLambdaBasicExecutionRole

AmazonSQSFullAccess

Role name: LambdaSQSTriggerRole.

IAM > Roles > Create role

Step 2
Add permissions

Step 3
Name, review, and create

Trusted entity type

☒ **AWS service**
Allow AWS services like EC2, Lambda, or others to perform actions in this account.

☐ **AWS account**
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.

☐ **Web identity**
Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.

☐ **SAML 2.0 federation**
Allow users federated with SAML 2.0 from a corporate directory to perform actions in this account.

☐ **Custom trust policy**
Create a custom trust policy to enable others to perform actions in this account.

Use case

Allow an AWS service like EC2, Lambda, or others to perform actions in this account.

Service or use case

Lambda

Choose a use case for the specified service.

Use case

☒ **Lambda**
Allows Lambda functions to call AWS services on your behalf.

LambdaSQSTriggerRole

Role LambdaSQSTriggerRole created.

View role

Summary

Creation date
October 23, 2025, 16:04 (UTC+05:30)

Last activity
-

ARN
arn:aws:iam::062250062838:role/LambdaSQSTriggerRole

Maximum session duration
1 hour

Permissions

Trust relationships

Tags

Last Accessed

Revoke sessions

Permissions policies (2) Info

Simulate

Remove

Add permissions

You can attach up to 10 managed policies.

Filter by Type

All types

< 1 >

Policy name	Type	Attached entities
<input type="checkbox"/> AmazonSQSFullAccess	AWS managed	1
<input type="checkbox"/> AWSLambdaBasicExecutionRole-94ca93a2-...	Customer managed	2

Step 2: Create Lambda Function

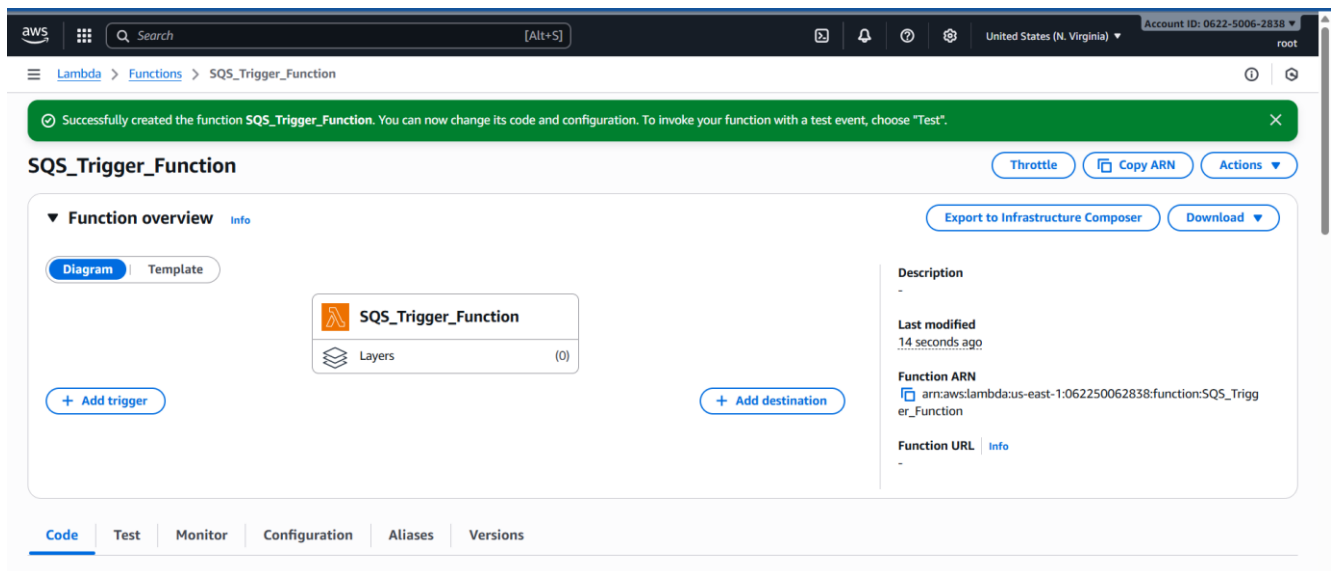
Go to AWS Lambda → Create Function → Author from scratch.

Function Name: SQS_Trigger_Function

Runtime: Python 3.13

Execution Role: Use existing role → LambdaSQSTriggerRole

Click Create Function.



Step 3: Add Python Code

Replace the default handler code with the following and click **Deploy**:

```
import json
```

```
def lambda_handler(event, context):
```

```
    for record in event['Records']:
```

```
        print("Message Body:", record['body'])
```

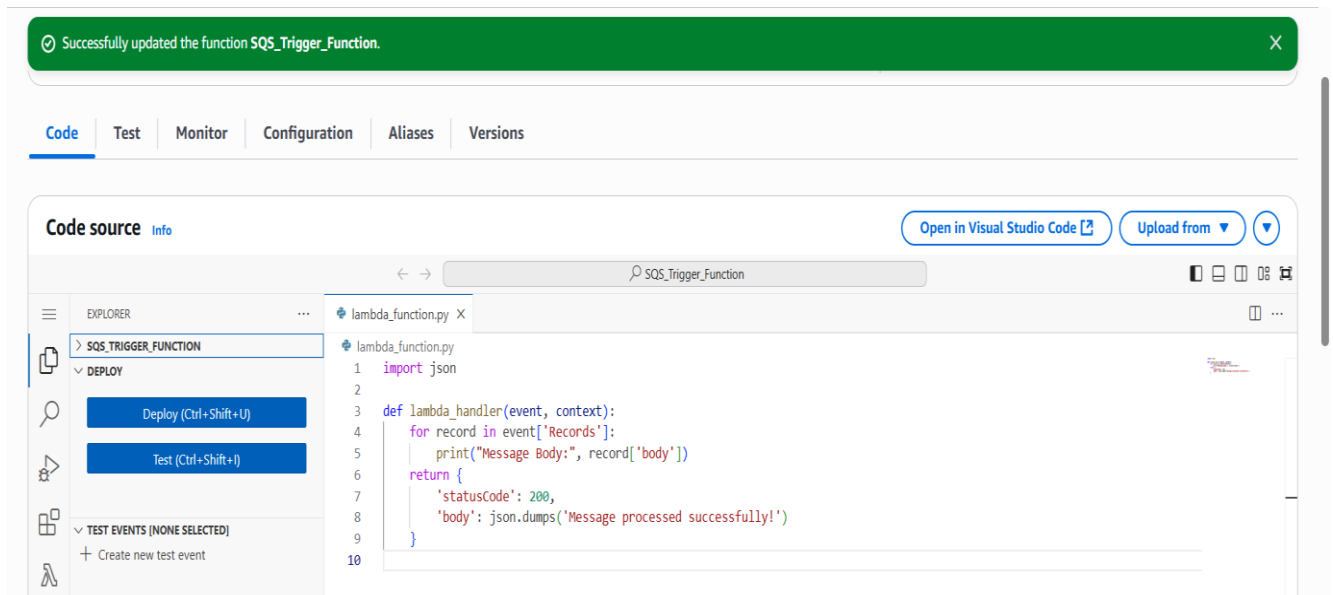
```
    return {
```

```
        'statusCode': 200,
```

```
        'body': json.dumps("Message processed successfully!")
```

```
    }
```

✓ This code prints every message received from SQS into the CloudWatch logs.



Step 4: Test Lambda Manually

After deploying the code, click **Test** on the Lambda console.

It will ask you to **create a new test event**.

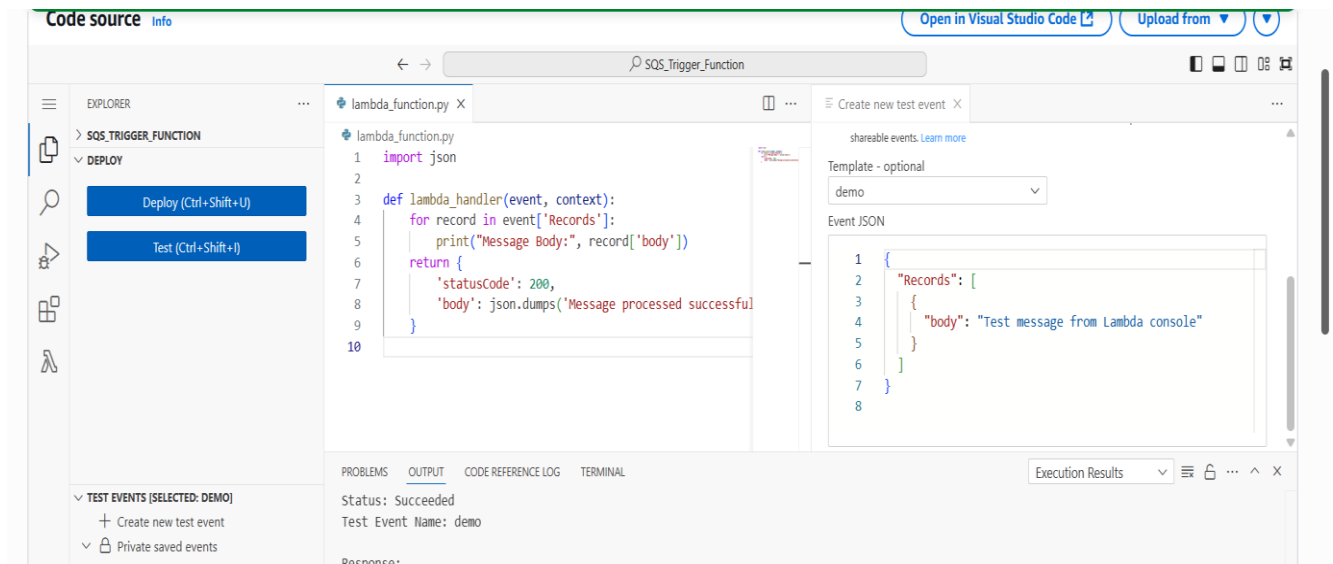
Create the event by **replacing the existing JSON code** with:

```
{
  "Records": [
    {
      "body": "Manual test message"
    }
  ]
}
```

Click **Test**.

This will run the Lambda function once and **automatically create the CloudWatch log group** `/aws/lambda/SQS_Trigger_Function`.

Note: Change the Cloudwatch Log Format to JSON under configuration settings in lambda function

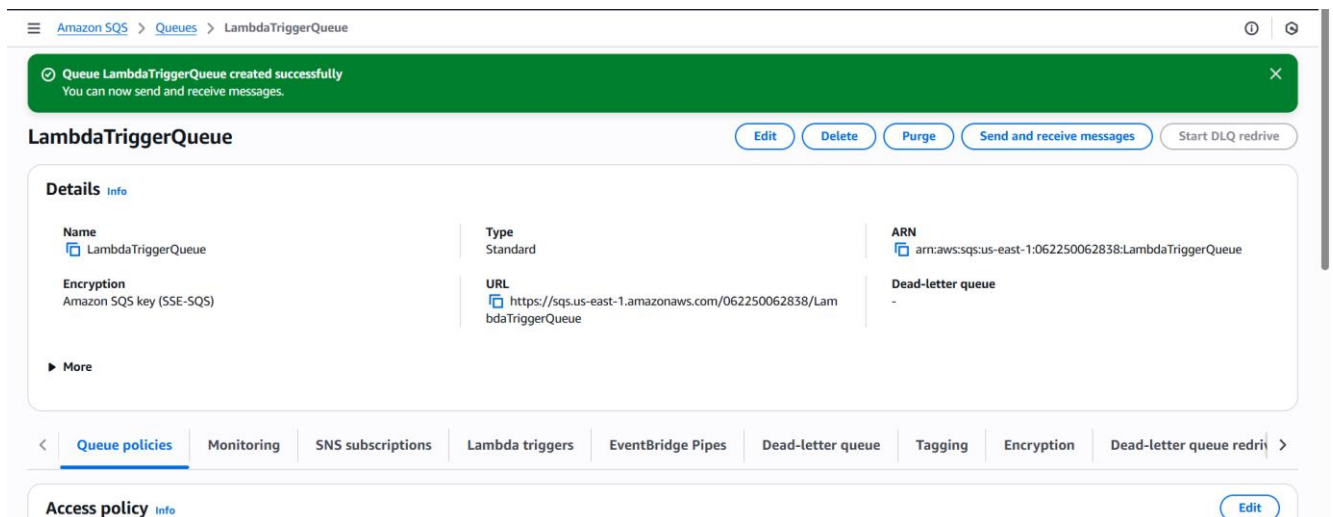


Step 5: Create an SQS Queue

Go to Amazon SQS → Create Queue → Standard queue.

Queue Name: LambdaTriggerQueue.

Keep all default configurations and create the queue.

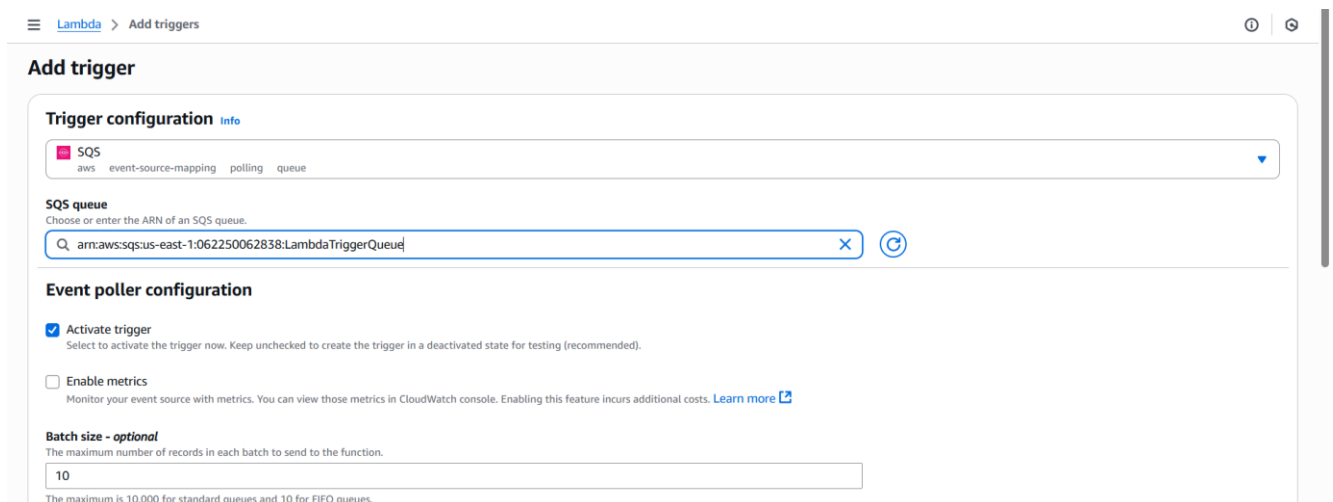
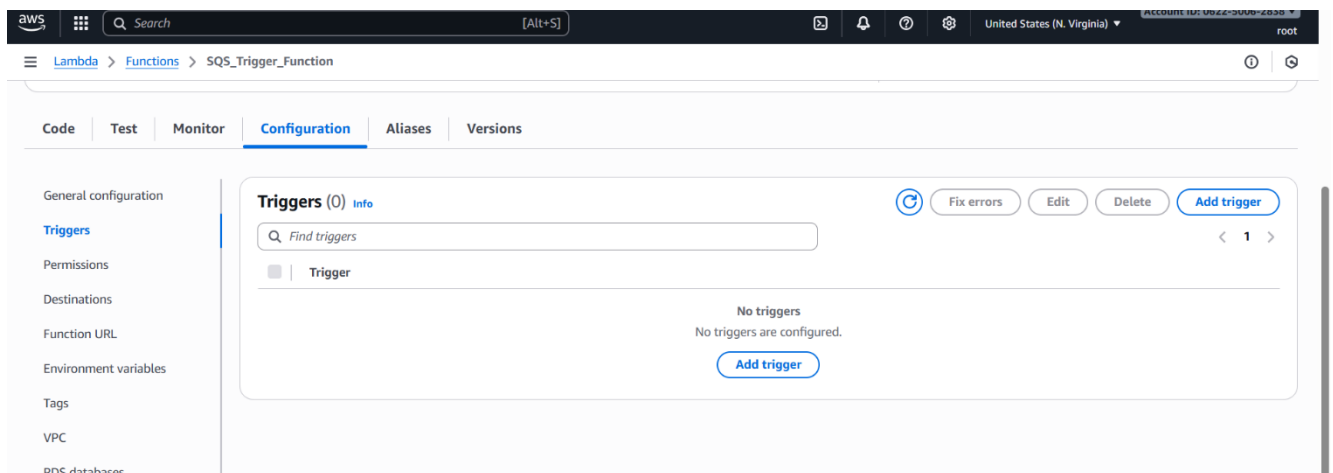


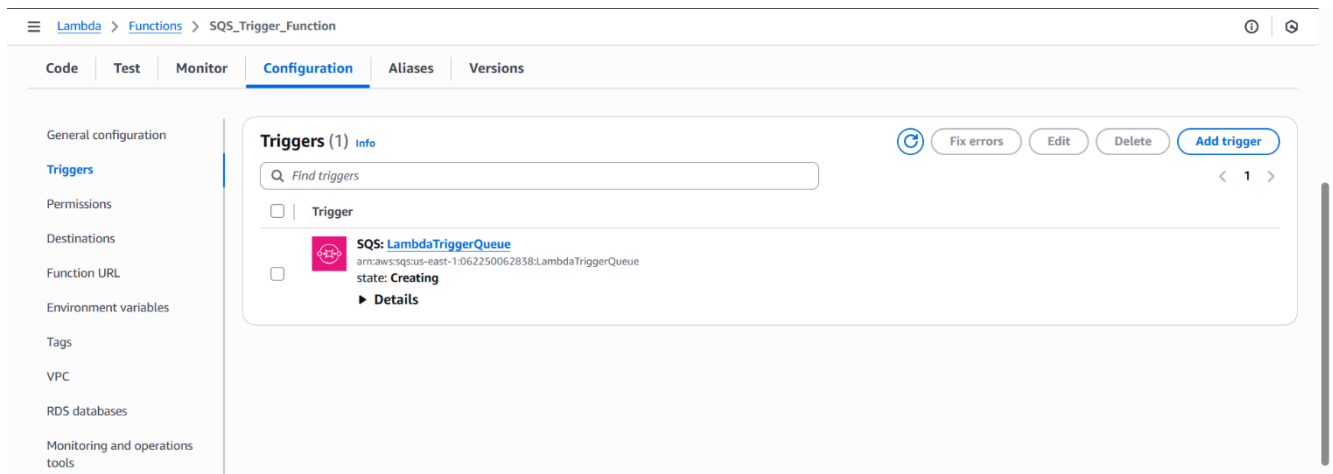
Step 6: Configure SQS as Lambda Trigger

Open the Lambda function → Configuration → Triggers → Add trigger.

Choose SQS, select LambdaTriggerQueue, click Add.

Now Lambda executes automatically whenever a message arrives in SQS.



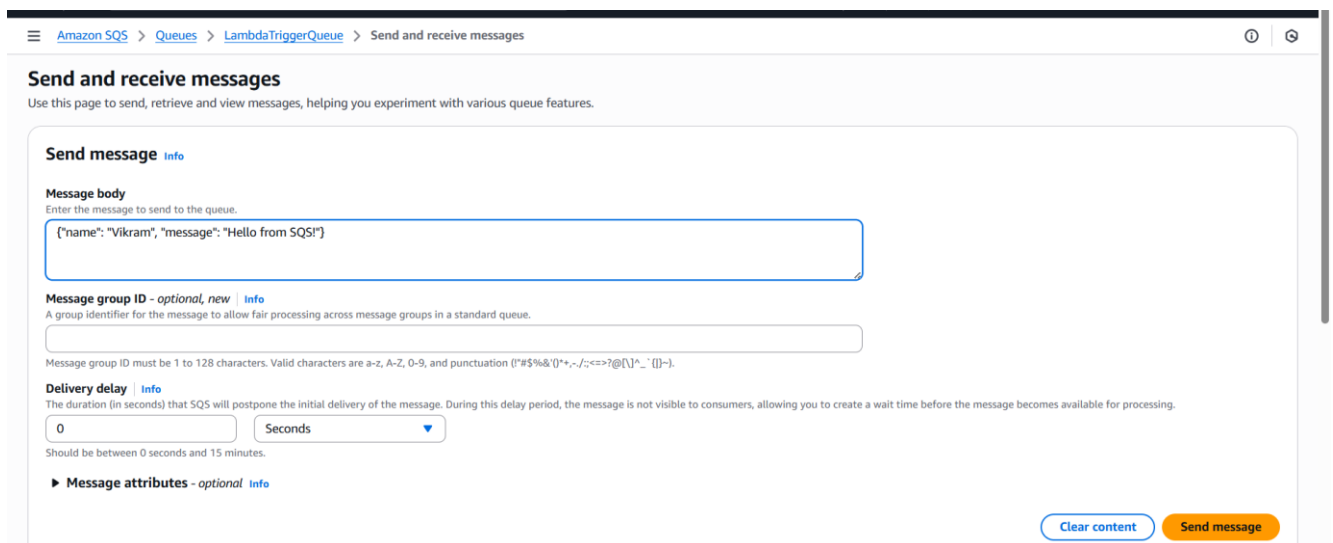


Step 7: Test the Setup with SQS

Go to Amazon SQS → LambdaTriggerQueue → Send and receive messages.

Message Body:

```
{"name": "Vikram", "message": "Hello from SQS!"}
```

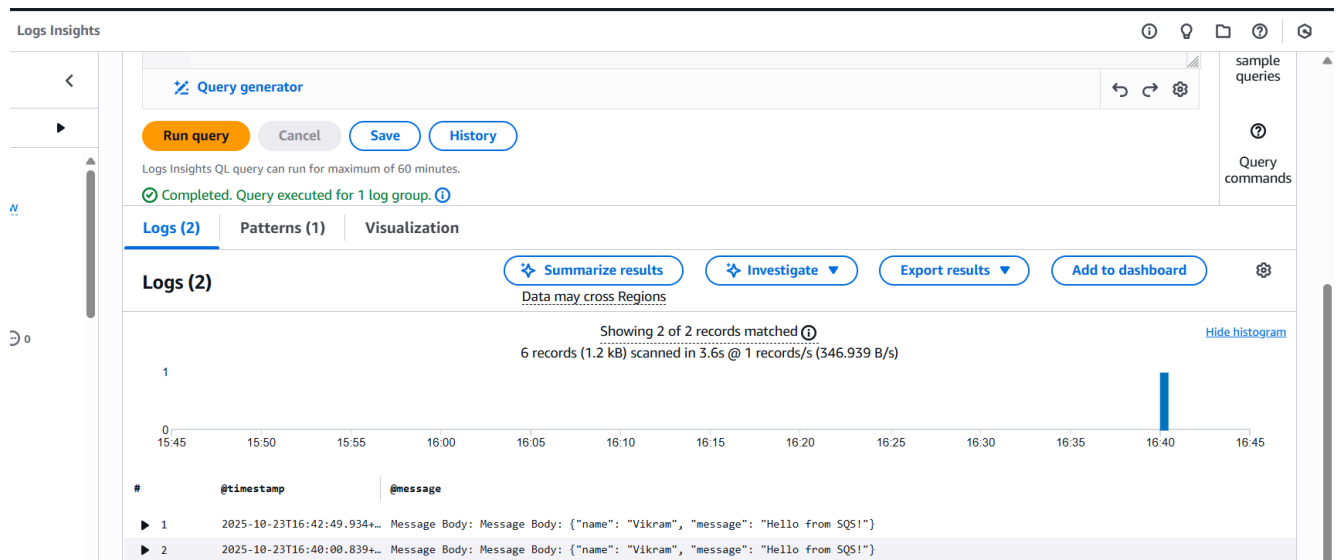
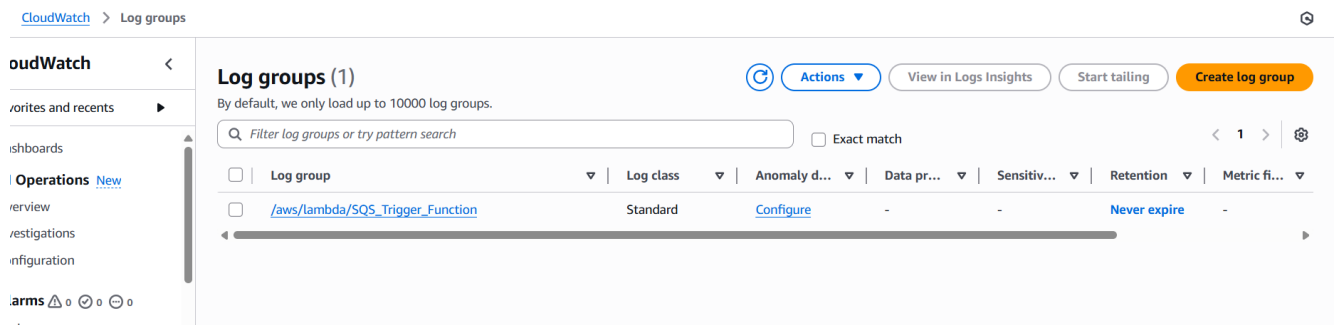


Click Send Message.

Check CloudWatch Logs → /aws/lambda/SQS_Trigger_Function → latest log stream → you should see:

Message Body:

```
{"name": "Vikram", "message": "Hello from SQS!"}
```



✓ Result

Successfully implemented a **serverless solution** using **AWS Lambda** and **SQS**.

Whenever a message is sent to the queue, the Lambda function executes automatically and logs the message body in **CloudWatch** — fulfilling the requirement of a fully managed, non-continuous compute setup.