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.

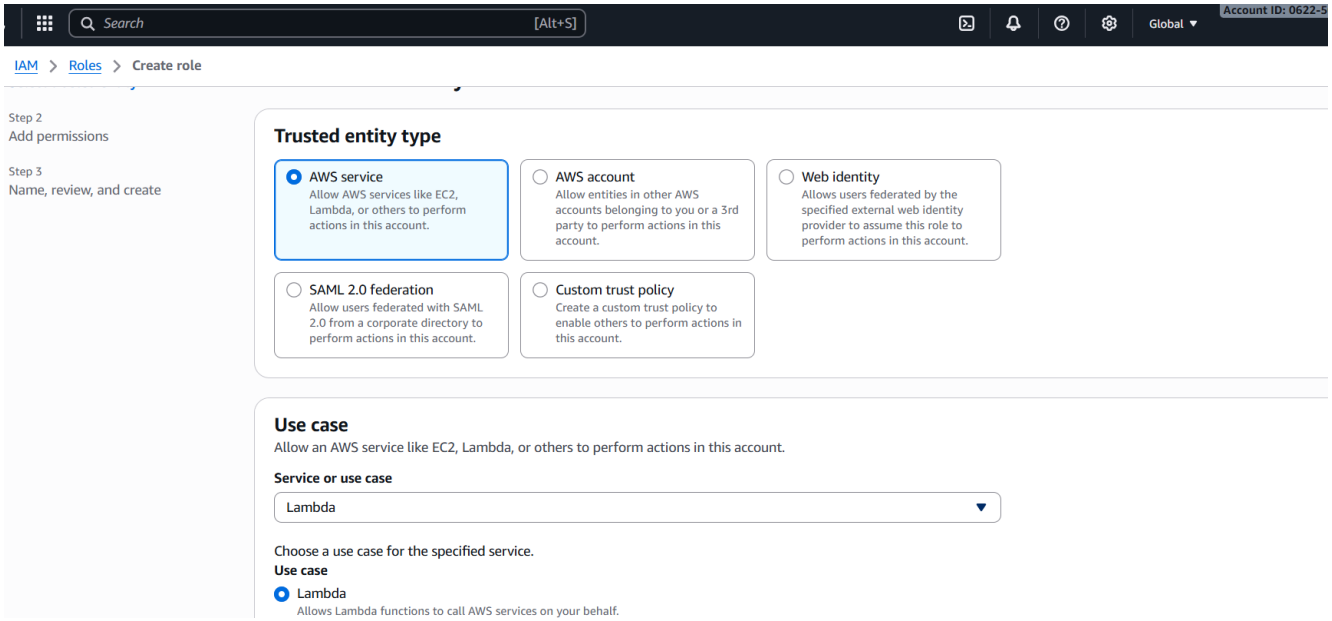
Choose AWS Service → Lambda.

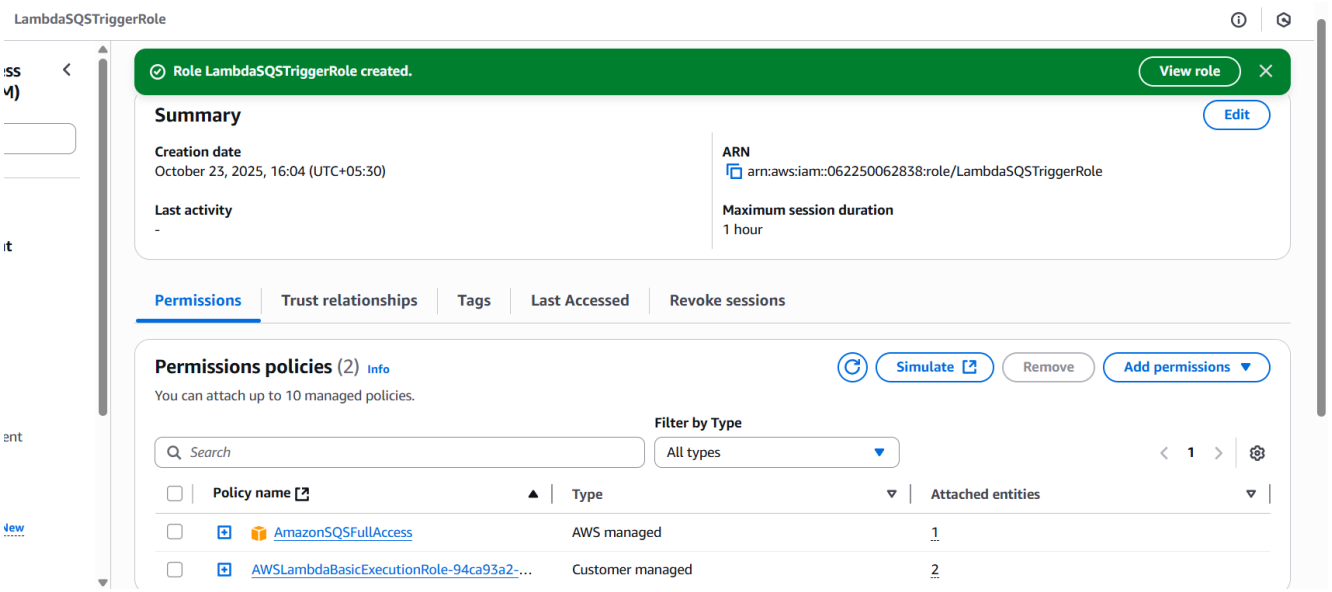
Attach these policies:

AWSLambdaBasicExecutionRole

AmazonSQSFullAccess

Role name: LambdaSQSTriggerRole.





Step 2: Create Lambda Function

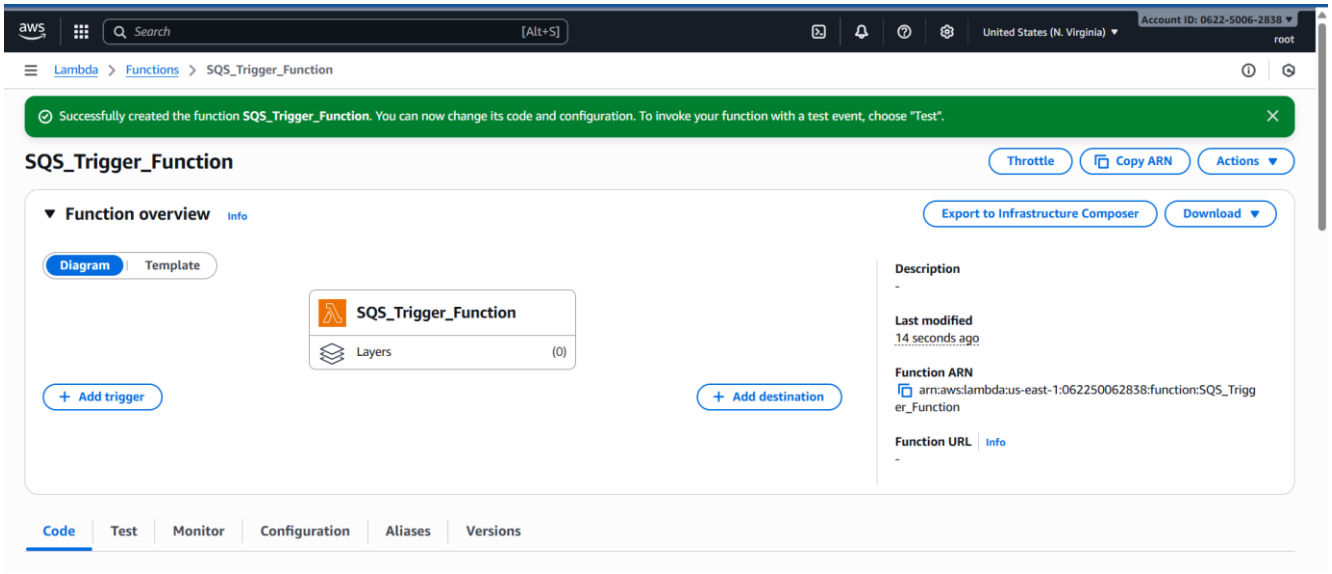
Go to AWS Lambda → Create Function → Author from scratch.

Function Name: SQS_Trigger_Function

Runtime: Python 3.13

Execution Role: Use existing role → LambdaSQSTriggerRole

Click Create Function.



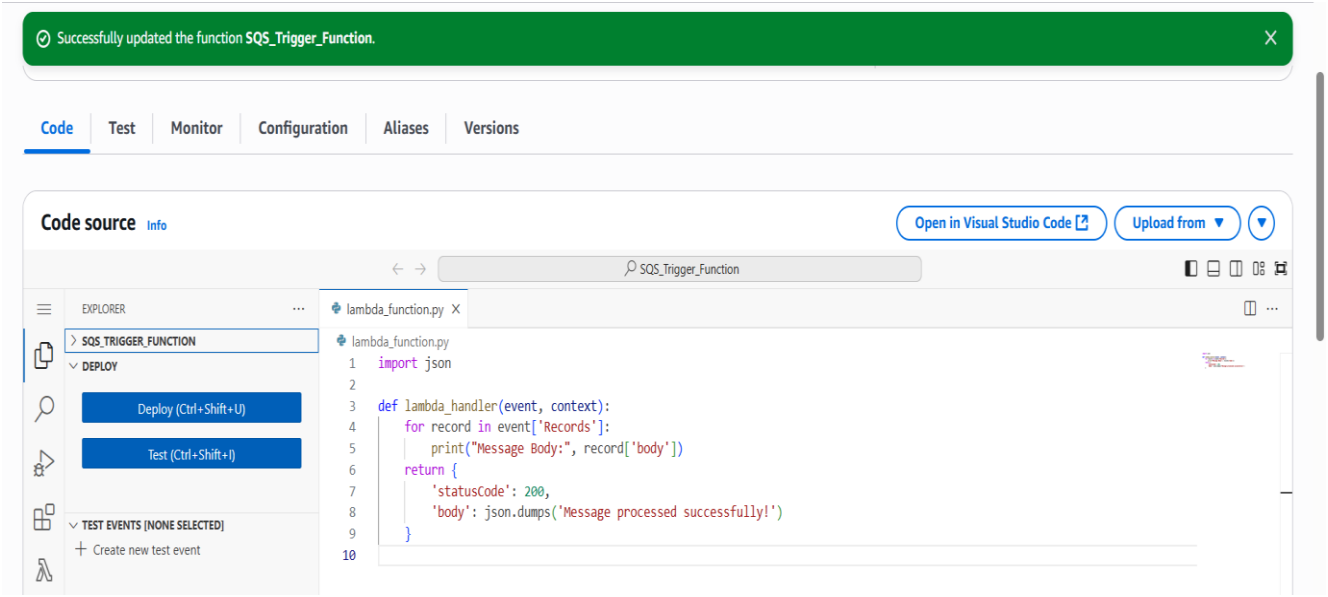
Step 3: Add Python Code

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**.

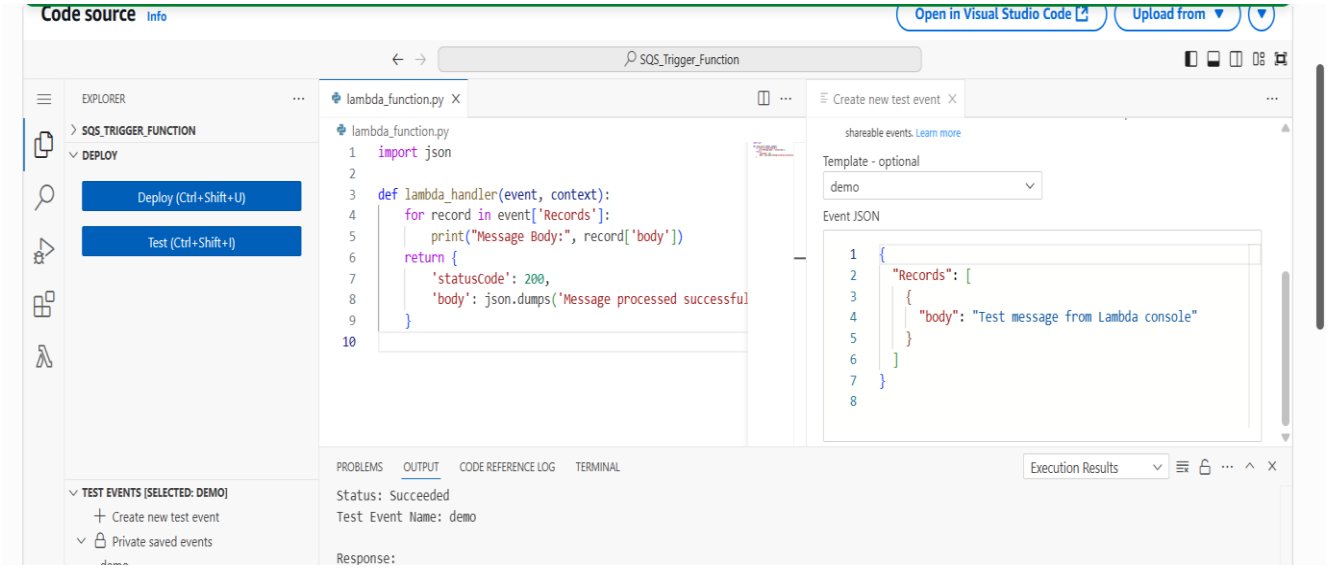
Create the event by **replacing the existing JSON code** with:

```
{
  "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

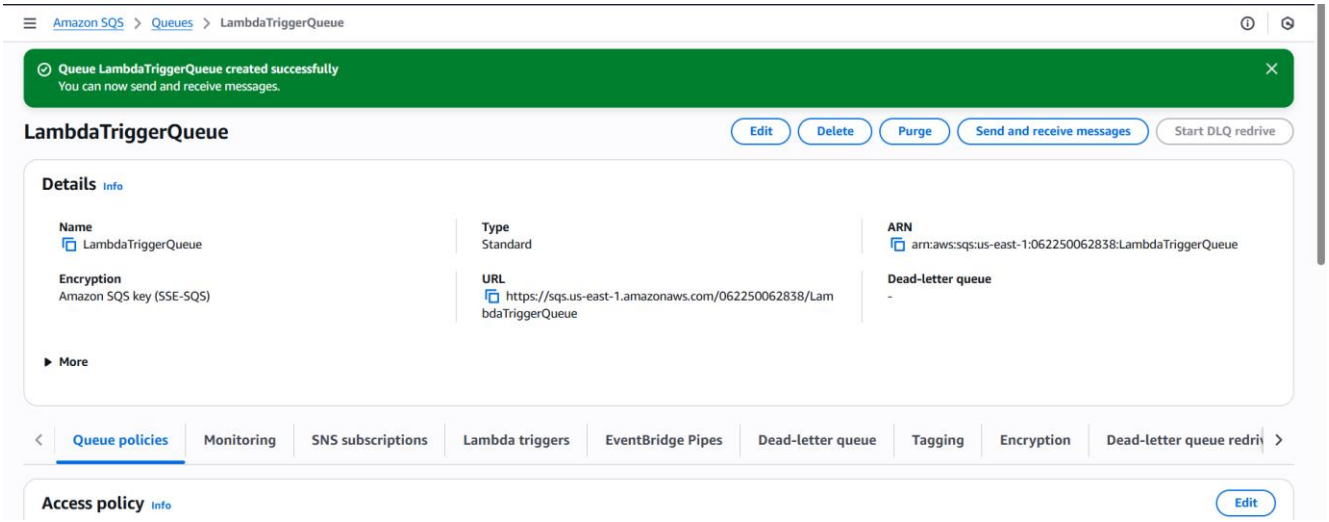


Step 5: Create an SQS Queue

Go to Amazon SQS → Create Queue → Standard queue.

Queue Name: LambdaTriggerQueue.

Keep all default configurations and create the queue.

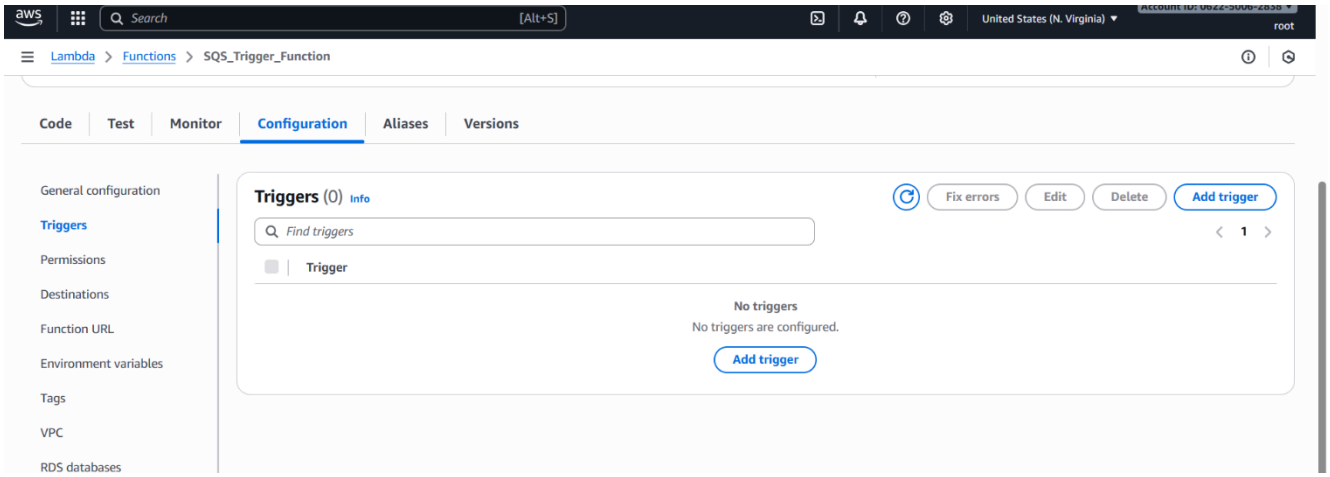


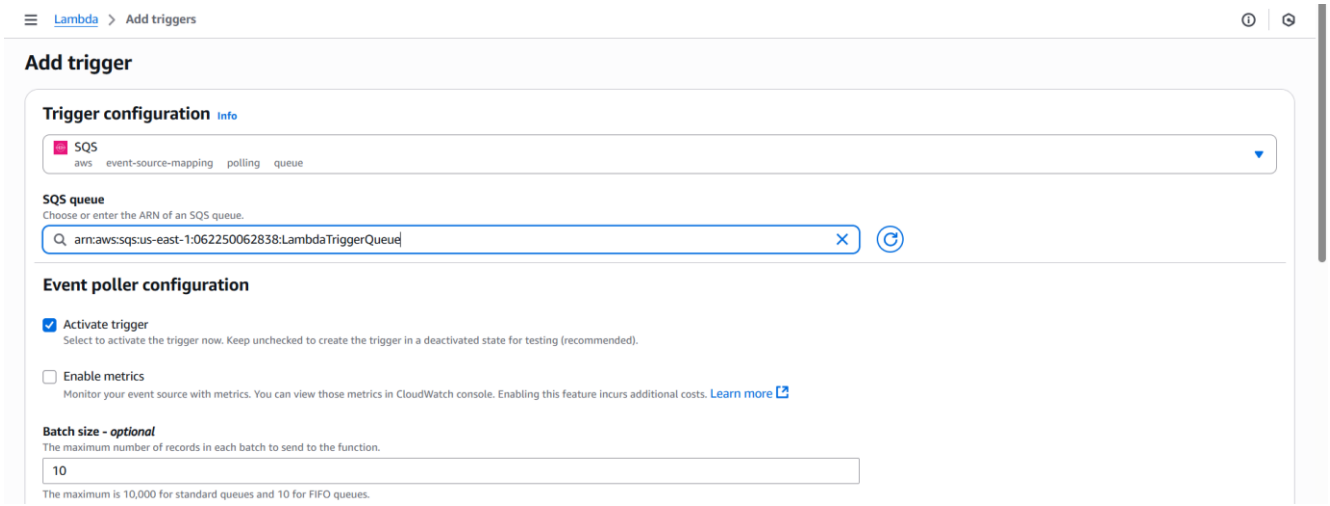
Step 6: Configure SQS as Lambda Trigger

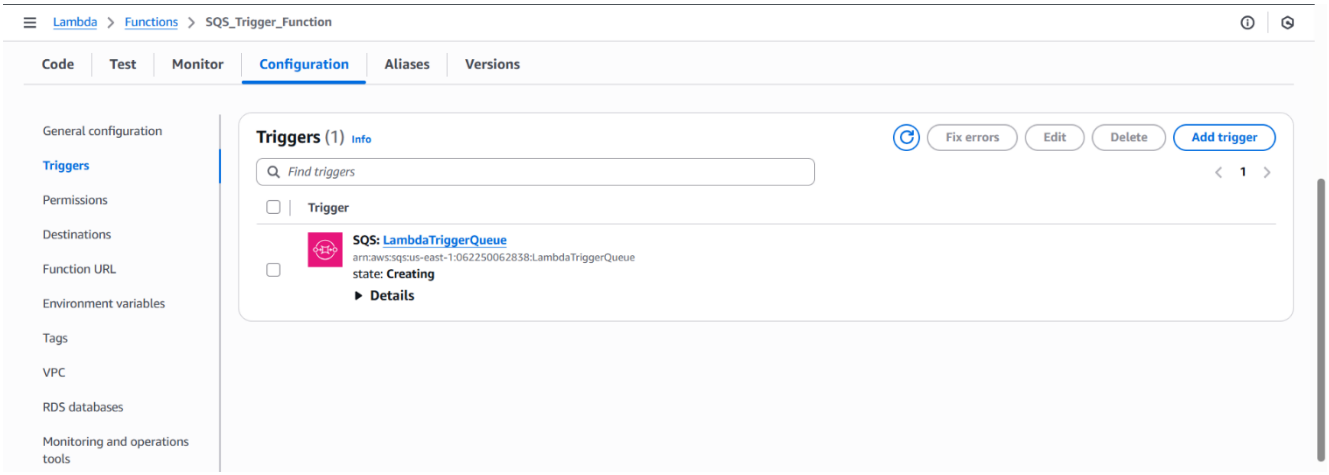
Open the Lambda function → Configuration → Triggers → Add trigger.

Choose SQS, select LambdaTriggerQueue, click Add.

Now Lambda executes automatically whenever a message arrives in SQS.





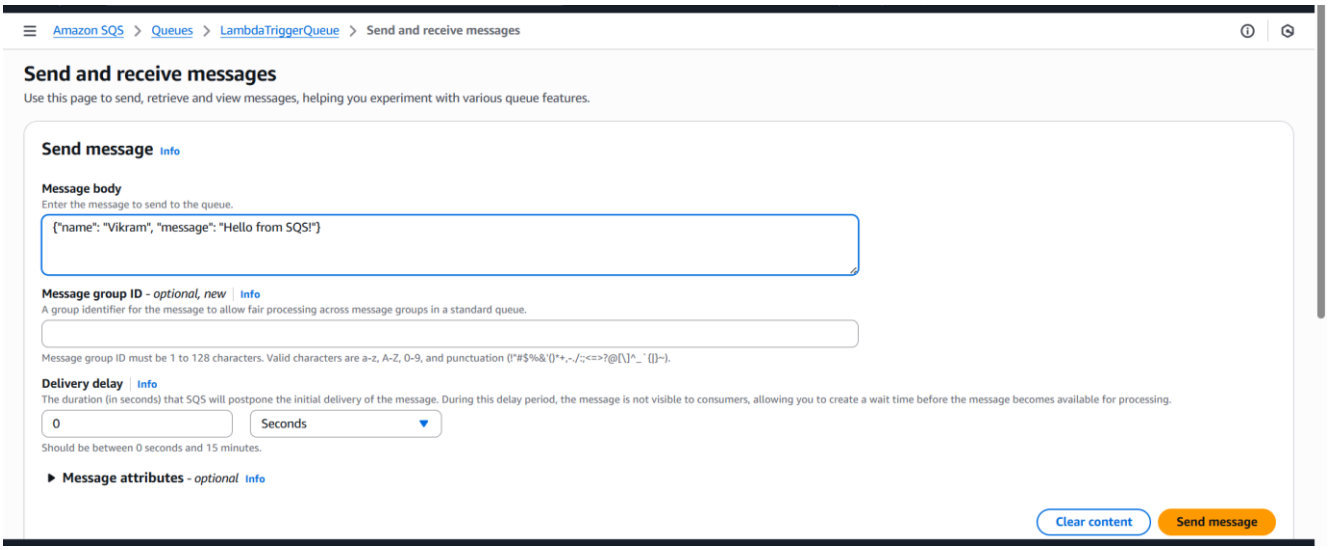


Step 7: Test the Setup with SQS

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

Message Body:

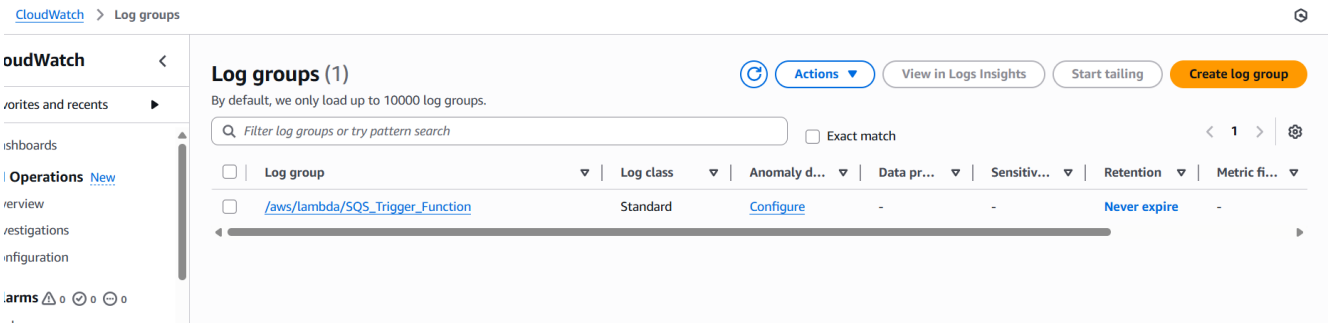
{"name": "Vikram", "message": "Hello from SQS!"}

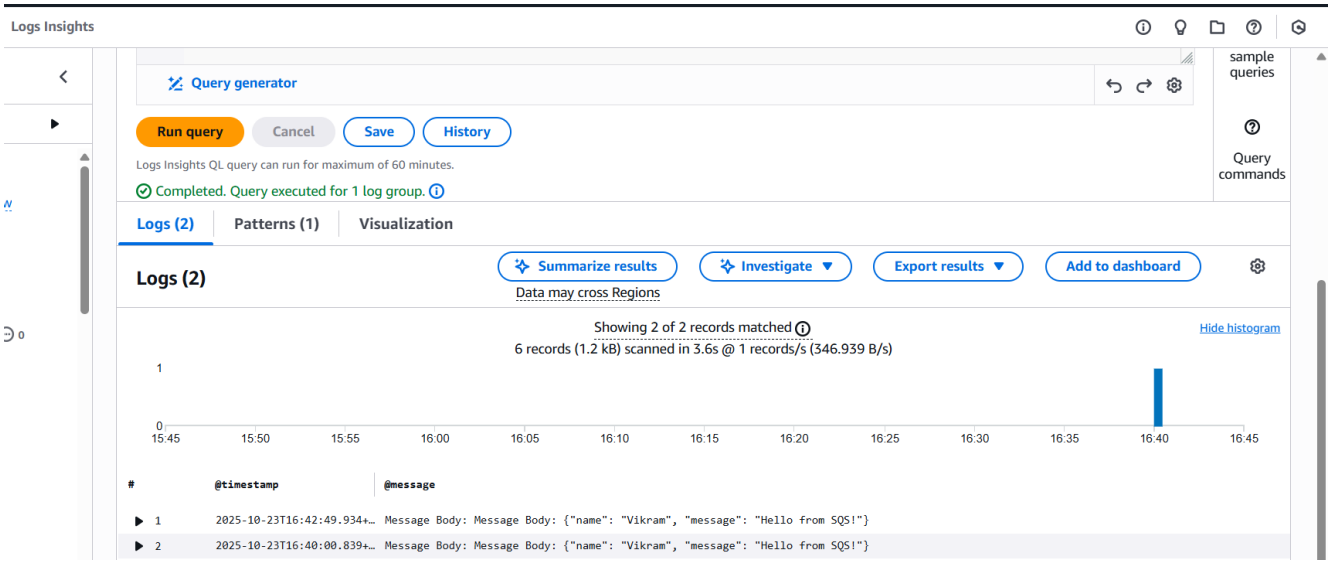


Click Send Message.

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.