

## 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.

### 1. Create a sample Python Lambda function.

The screenshot shows the 'Create function' page in the AWS Management Console. The 'Author from scratch' option is selected. The 'Function name' is 'process-SQS-msg'. The 'Runtime' is 'Python 3.13'. The 'Architecture' is 'x86\_64'. The 'Permissions' section shows the default role. The right sidebar contains a 'Tutorials' section with a 'Create a simple web app' tutorial.

**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.  
process-SQS-msg  
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 3.13

**Architecture** Info  
Choose the instruction set architecture you want for your function code.  
☐ arm64  
☒ x86\_64

**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.

**CloudShell** Feedback

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The screenshot shows the 'process-SQS-msg' function page in the AWS Management Console. A green notification bar at the top states: 'Successfully created the function process-SQS-msg. You can now change its code and configuration. To invoke your function with a test event, choose "Test".' The 'Function overview' section shows the function name, layers, and a description. The 'Code source' section shows the function ARN and URL. The right sidebar contains a 'Tutorials' section with a 'Create a simple web app' tutorial.

**process-SQS-msg** Throttle Copy ARN Actions

**Function overview** Info

**Diagram** Template

**process-SQS-msg**  
Layers (0)

**Description**  
-

**Last modified**  
3 minutes ago

**Function ARN**  
arn:aws:lambda:us-east-1:251985476962:func:process-SQS-msg

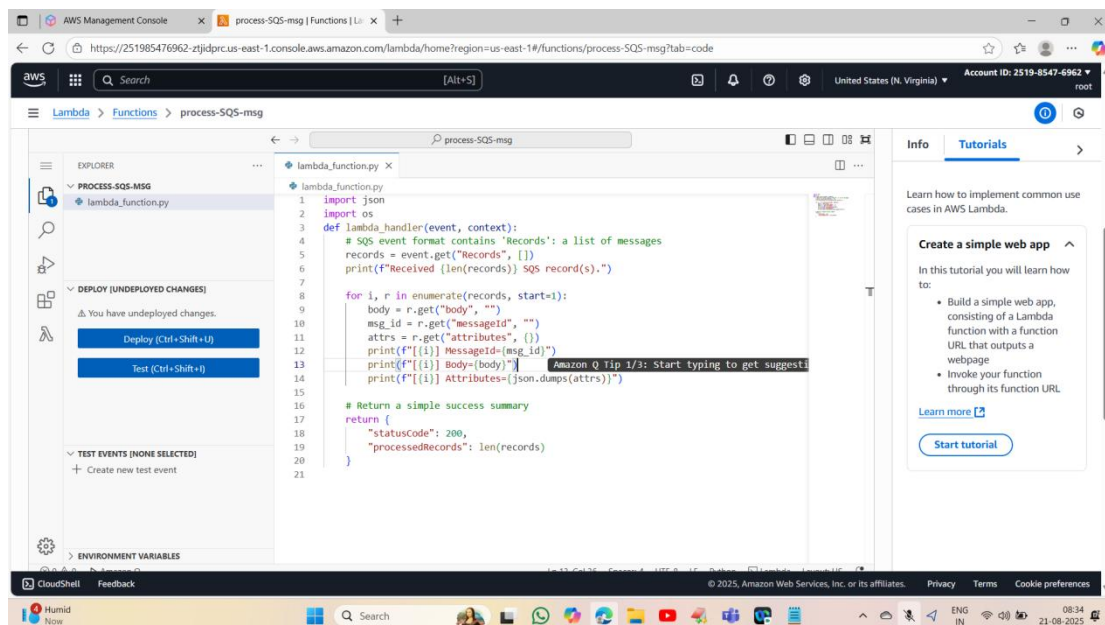
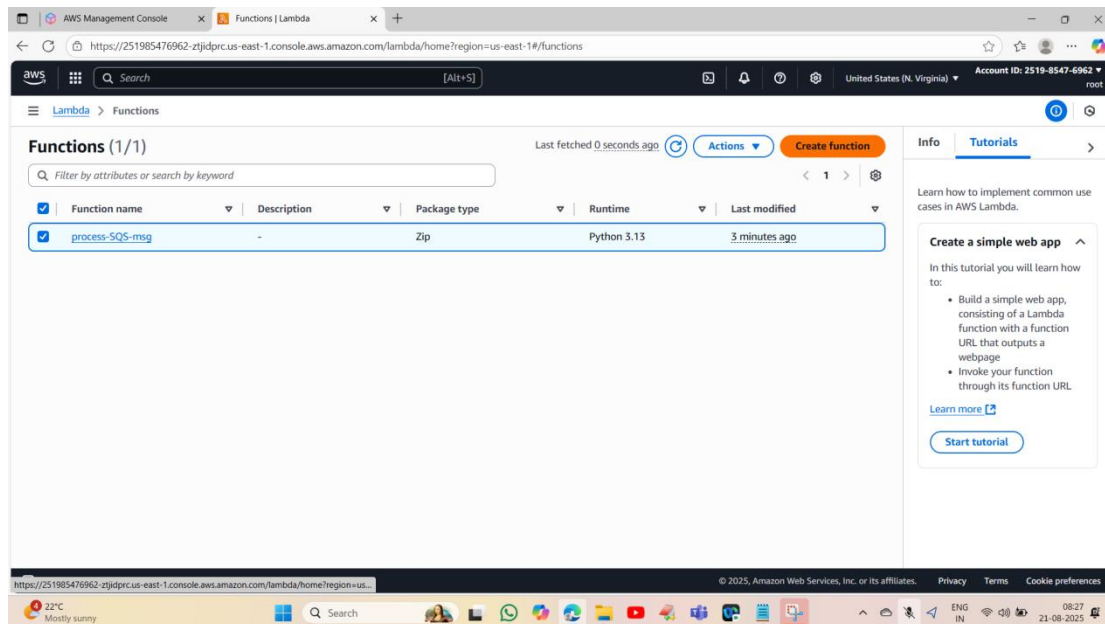
**Function URL** Info

**Code source** Info

**Open in Visual Studio Code** **Upload from**

**CloudShell** Feedback

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AWS Management Console - process-SQS-msg | Functions | Lambda

https://251985476962-ztjdprc-us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/process-SQS-msg?tab=code

Successfully updated the function process-SQS-msg.

PROCESS-SQS-MSG

- lambda\_function.py

DEPLOY

Deploy (Ctrl+Shift+U)

Test (Ctrl+Shift+I)

TEST EVENTS (NONE SELECTED)

+ Create new test event

ENVIRONMENT VARIABLES

```
1 import json
2 import os
3 def lambda_handler(event, context):
4     # SQS event format contains 'Records': a list of messages
5     records = event.get("Records", [])
6     print(f"Received {len(records)} SQS record(s).")
7
8     for i, r in enumerate(records, start=1):
9         body = r.get("body", "")
10        msg_id = r.get("messageId", "")
11        attrs = r.get("attributes", {})
12        print(f"[{i}] MessageId={msg_id}")
13        print(f"[{i}] Body={body}")
14        print(f"[{i}] Attributes={json.dumps(attrs)}")
15
16    # Return a simple success summary
17    return {
18        "statusCode": 200,
19        "processedRecords": len(records)
20    }
```

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

Successfully updated the function process-SQS-msg.

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21-08-2025

AWS Management Console - process-SQS-msg | Functions | Lambda

https://251985476962-ztjdprc-us-east-1.console.aws.amazon.com/sqs/v3/home?region=us-east-1#/create-queue

Amazon SQS > Queues > Create queue

Create queue

Details

Type

Choose the queue type for your application or cloud infrastructure.

☒ Standard info

At-least-once delivery, message ordering isn't preserved

- At-least-once delivery
- Best-effort ordering

☐ FIFO info

First-in-first-out delivery, message ordering is preserved

- First-in-first-out delivery
- Exactly-once processing

**You can't change the queue type after you create a queue.**

Name

MySQSEvent

A queue name is case-sensitive and can have up to 80 characters. You can use alphanumeric characters, hyphens (-), and underscores (\_).

Configuration

Set the maximum message size, visibility to other consumers, and message retention.

Visibility timeout

30

Seconds

Should be between 0 seconds and 12 hours.

Message retention period

4

Days

Should be between 1 minute and 14 days.

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Watchlist Ideas

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AWS Management Console - process-SQS-msg | Functions | Queue details | Simple Queue Ser...

https://251985476962-ztjdprc-us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/process-SQS-msg?tab=configure

simpspace

United States (N. Virginia) Account ID: 2519-8547-6962 root

Lambda > Functions > process-SQS-msg

Function URL info

Code Test Monitor **Configuration** Aliases Versions

**General configuration** info Edit

<b>Description</b> -	<b>Memory</b> 128 MB	<b>Ephemeral storage</b> 512 MB
<b>Timeout</b> 0 min 3 sec	<b>SnapStart</b> None info	

Triggers  
Permissions  
Destinations  
Function URL  
Environment variables  
Tags  
VPC  
RDS databases  
Monitoring and operations tools

**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:

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[Learn more](#)

[Start tutorial](#)

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AWS Management Console - Add triggers | Lambda | Queue details | Simple Queue Ser...

https://251985476962-ztjdprc-us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/add/relations?focus=aws%2Flambda&target=arn%3Aaws%3Alambda%3Aus-east-1%3A251985476962-ztjdprc-us-east-1%3Afunction%3Aprocess-SQS-msg

simpspace

United States (N. Virginia) Account ID: 2519-8547-6962 root

Lambda > Add triggers

**Add trigger**

**Trigger configuration** info

**SQS** aws event-source-mapping polling queue

**SQS queue**  
Choose or enter the ARN of an SQS queue.

Use: "arn:aws:sqs:us-east-1:251985476962:MySQSEvent"

MySQSEvent

☒ **Activate trigger**  
Select to activate the trigger now. Keep unchecked to create the trigger in a deactivated state for testing (recommended).

☐ **Enable metrics**  
Monitor your event source with metrics. You can view those metrics in CloudWatch console. Enabling this feature incurs additional costs. [Learn more](#)

**Batch size - optional**  
The maximum number of records in each batch to send to the function.  
  
The maximum is 10,000 for standard queues and 10 for FIFO queues.

**Batch window - optional**  
The maximum amount of time to gather records before invoking the function, in seconds.

**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:

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[Learn more](#)

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AWS Management Console - Add triggers | Lambda - Queue details | Simple Queue Ser...

https://251985476962-ztjdprc-us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/add/relation?focus=aws%2Flambda&target=arn%3Aaws%3Alambda%3Aus-east-1%3A2519854...

Account ID: 2519-8547-6962 root

Lambda > Add triggers

### Event poller configuration

☒ **Activate trigger**  
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**Batch size - optional**  
The maximum number of records in each batch to send to the function.  
  
The maximum is 10,000 for standard queues and 10 for FIFO queues.

**Batch window - optional**  
The maximum amount of time to gather records before invoking the function, in seconds.  
  
When the batch size is greater than 10, set the batch window to at least 1 second.

**Maximum concurrency - optional**  
The maximum number of concurrent function instances that the SQS event source can invoke.  
  
Specify a value between 2 and 1000. To deactivate, leave the box empty.

**Report batch item failures - optional**  
Allow your function to return a partial successful response for a batch of records.  
☐

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AWS Management Console - Add triggers | Lambda - Queue details | Simple Queue Ser...

https://251985476962-ztjdprc-us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/add/relation?focus=aws%2Flambda&target=arn%3Aaws%3Alambda%3Aus-east-1%3A2519854...

Account ID: 2519-8547-6962 root

Lambda > Add triggers

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Allow your function to return a partial successful response for a batch of records.  
☐

**Filter criteria - optional**  
Define the filtering criteria to determine whether or not to process an event. Each filter must be in a valid JSON format in filter rule syntax. [Learn more](#)

[Add](#)

During trigger creation, Lambda translates your filter(s) into a single JSON structure containing all your filtering criteria.

☐ **Encrypt filter criteria with customer managed KMS key**  
Lambda will use this key to encrypt and decrypt your resources. [Learn more](#)

► **Additional settings**  
In order to read from the SQS trigger, your execution role must have proper permissions.

Cancel Add

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AWS Management Console - IAM - Roles - process-SQS-msg-role-657dtrnv - Add permissions

### Attach policy to process-SQS-msg-role-657dtrnv

► Current permissions policies (2)

Other permissions policies (1/1073)

Filter by Type: All types (1 match)

Policy name	Type	Description
<input checked="" type="checkbox"/> AWSLambdaSQSQueueExecutionRole	AWS managed	Provides receive message, delete message...

[Cancel](#) [Add permissions](#)

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AWS Management Console - Lambda - Functions - process-SQS-msg - Configuration

### process-SQS-msg

Throttle Copy ARN Actions

✓ The trigger MySQSEvent was successfully added to function process-SQS-msg. The trigger is in a disabled state.

▼ Function overview Info

Diagram Template

process-SQS-msg

SQS

+ Add trigger

+ Add destination

Description

Last modified: 12 minutes ago

Function ARN: arn:aws:lambda:us-east-1:251985476962:function:process-SQS-msg

Function URL: Info

Code Test Monitor Configuration Aliases Versions

General configuration Triggers (1) Edit Delete Add trigger

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Send and receive messages

Use this page to send, retrieve and view messages, helping you experiment with various queue features.

**Send message** Info

✓ Your message has been sent and is ready to be received. [View sent message details](#) Dismiss alert

**Message body**  
Enter the message to send to the queue.  
`{event:"sign-up",user:"user-1",msg:"hello from lambda"}`

**Message group ID - optional, new** Info  
A group identifier for the message to allow fair processing across message groups in a standard queue.  
`123`  
Message group ID must be 1 to 128 characters. Valid characters are a-z, A-Z, 0-9, and punctuation (["#\$%&'()\*+,-./:;<=>?@[\]^\_`{|}~]).

**Delivery delay** Info  
The duration (in seconds) that SQS will postpone the initial delivery of the message. During this delay period, the message is not visible to consumers, allowing you to create a wait time before the message becomes available for processing.  
`0` Seconds  
Should be between 0 seconds and 15 minutes.

► **Message attributes - optional** Info

[Clear content](#) [Send message](#)

CloudWatch

Log groups

`/aws/lambda/process-SQS-msg` > `2025/08/21/[$LATEST]1cbbdbae68d74385a7d32b3f0fa8e88b`

**Log events**

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
2025-08-21T03:22:16.753Z	[1] Body={event:"sign-up",user:"user-1",msg:"hello"}
2025-08-21T03:22:16.753Z	[1] Attributes={ApproximateReceiveCount: "1", "SentTimestamp": "1755746536470", "SenderId": "251985476962", "ApproximateFirstRec...
2025-08-21T03:22:16.754Z	END RequestId: 293101c9-f8ad-5a3b-9887-60e906b38b65
2025-08-21T03:22:16.754Z	REPORT RequestId: 293101c9-f8ad-5a3b-9887-60e906b38b65 Duration: 1.87 ms Billed Duration: 2 ms Memory Size: 128 MB Max Memory Used...
2025-08-21T03:27:00.574Z	START RequestId: 431e91a2-800d-5cdb-92c8-f082143b6efe Version: \$LATEST
2025-08-21T03:27:00.575Z	Received 1 SQS record(s).
2025-08-21T03:27:00.575Z	[1] MessageId=9affe1a5-af5e-4d16-b01a-5de3a2a682f
2025-08-21T03:27:00.575Z	[1] Body={event:"sign-up",user:"user-1",msg:"hello from lambda"}
2025-08-21T03:27:00.575Z	[1] Attributes={ApproximateReceiveCount: "1", "SentTimestamp": "1755746820526", "MessageGroupId": "123", "SenderId": "2519854769...
2025-08-21T03:27:00.592Z	END RequestId: 431e91a2-800d-5cdb-92c8-f082143b6efe
2025-08-21T03:27:00.592Z	REPORT RequestId: 431e91a2-800d-5cdb-92c8-f082143b6efe Duration: 17.83 ms Billed Duration: 18 ms Memory Size: 128 MB Max Memory Us...

No newer events at this moment. [Auto retry paused](#). [Resume](#)

[Back to top](#)