

Write AWS Lambda function that triggers on data arrival in SQS and write the data to DynamoDB table.

Create SQS Queue:

Application integration

Amazon SQS

A message queuing service

Amazon SQS provides queues for high-throughput, system-to-system messaging. You can use queues to decouple heavyweight processes and to buffer and batch work. Amazon SQS stores messages until microservices and serverless applications process them.

Get started

Learn how to use Amazon SQS by creating a queue, sending a message to the queue, and receiving and processing the message.

[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

[i](#) You can't change the queue type after you create a queue.

Name

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

Tags - Optional [Info](#)

A tag is a label assigned to an AWS resource. Use tags to search and filter your resources or track your AWS costs.

| Key | Value - optional | |
|--|--|------------------------|
| <input type="text" value="Enter key"/> | <input type="text" value="Enter value"/> | Remove |

[Add new tag](#)

You can add 49 more tags.

[Cancel](#) [Create queue](#)

✓ **Queue Mod5Queue created successfully**
You can now send and receive messages.

[Amazon SQS](#) > [Queues](#) > Mod5Queue

Mod5Queue

| Queues (1) | | | | | | | | Edit | Delete | Send and receive messages | |
|--|-----------|----------|------------------------|----------------------|----------------------|--------------------------|--|------|--------|---------------------------|--|
| <input type="text" value="Search queues by prefix"/> | | | | | | | | | | | |
| | Name ▲ | Type ▼ | Created ▼ | Messages available ▼ | Messages in flight ▼ | Encryption ▼ | | | | | |
| <input type="radio"/> | Mod5Queue | Standard | 2024-01-31T21:11+08:00 | 0 | 0 | Amazon SQS key (SSE-SQS) | | | | | |

Create Lambda function:

Sydney ▼

Compute

AWS Lambda

lets you run code without thinking about servers.

You pay only for the compute time that you consume — there is no charge when your code is not running. With Lambda, you can run code for virtually any type of application or backend

Get started

Author a Lambda function from scratch, or choose from one of many preconfigured examples.

[Create a 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

Basic information

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

Use only letters, numbers, hyphens, or underscores with no spaces.

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

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

Create IAM role for Lambda to access SQS:

Select trusted entity Info

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.

Cancel **Next**

Add permissions Info

Permissions policies (1/912) Info

Choose one or more policies to attach to your new role.

Filter by Type All types 3 matches

| <input checked="" type="checkbox"/> | Policy name | Type | Description |
|-------------------------------------|--|-------------|---|
| <input checked="" type="checkbox"/> | AmazonSQSFullAccess | AWS managed | Provides full access to Amazon SQS via t... |
| <input type="checkbox"/> | AmazonSQSReadOnlyAccess | AWS managed | Provides read only access to Amazon SQS... |
| <input type="checkbox"/> | AWSLambdaSQSQueueExecutionRole | AWS managed | Provides receive message, delete messag... |

► Set permissions boundary - optional

Cancel Previous **Next**

Name, review, and create

Role details

Role name
Enter a meaningful name to identify this role.

Mod5_SQS-Lambda_Role

Maximum 64 characters. Use alphanumeric and '+', '@', '-' characters.

Step 3: Add tags

Add tags - optional Info

Tags are key-value pairs that you can add to AWS resources to help identify, organize, or search for resources.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Cancel Previous **Create role**

Back to Lambda function creation page:

▼ 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

Existing role

Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.

Mod5_SQS-Lambda_Role

Q |

Mod5_SQS-Lambda_Role ✓

service-role/PutEventFunction-role-fa9c1y3j

▲

↺

Cancel

Create function

Integrate Lambda with SQS:

Mod5Lambda

▼ Function overview

Info

Diagram

Template

Mod5Lambda

Layers (0)

+ Add trigger

+ Add destination

Add trigger

Trigger configuration

Info

Select a source

C sqs

X


Batch/bulk data processing

SQS


aws event-source-mapping polling queue

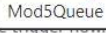
Add trigger

Trigger configuration [Info](#)

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

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




☒ **Activate trigger**  **Mod5Queue**
Select to activate the trigger now. Keep unchecked to create the trigger in a deactivated state for testing (recommended).

Add

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


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


Cancel **Add**

 The trigger Mod5Queue was successfully added to function Mod5Lambda. The trigger is in a disabled state.

Function overview [Info](#)

Diagram Template

 **Mod5Lambda**
Layers (0)

 **SQS**

+ Add trigger

+ Add destination

Description

Last modified
25 minutes ago

Function ARN
arn:aws:lambda:ap-southeast-2:851725364041:function:Mod5Lambda

Function URL [Info](#)

Code Test Monitor **Configuration** Aliases Versions

General configuration

Triggers


Permissions


Destinations

Function URL

Triggers (1) [Info](#)

☐ Trigger

 **SQS: Mod5Queue**
arn:aws:sqs:ap-southeast-2:851725364041:Mod5Queue
state: Creating

 Fix errors Edit Delete **Add trigger**

< 1 >

Create DynamoDB table:

DynamoDB

Sydney

Database

Amazon DynamoDB

A fast and flexible NoSQL database service for any scale

DynamoDB is a fully managed, key-value, and document database that delivers single-digit-millisecond performance at any scale.

Get started

Create a new table to start exploring DynamoDB.

Create table

Create table

Table details [Info](#)

DynamoDB is a schemaless database that requires only a table name and a primary key when you create the table.

Table name

This will be used to identify your table.

Mod5_DynamoDB_Table

Between 3 and 255 characters, containing only letters, numbers, underscores (_), hyphens (-), and periods (.).

Partition key

The partition key is part of the table's primary key. It is a hash value that is used to retrieve items from your table and allocate data across hosts for scalability and availability.

UserID

String

1 to 255 characters and case sensitive.

Tags

Tags are pairs of keys and optional values, that you can assign to AWS resources. You can use tags to control access to your resources or track your AWS spending.

No tags are associated with the resource.

Add new tag

You can add 50 more tags.

Cancel

Create table

DynamoDB > Tables

Tables (1) [Info](#)

Find tables by table name

Any tag key

Any tag value

< 1 > ⚙

| <input type="checkbox"/> | Name | Status | Partition key | Sort key | Indexes | Deletion protection | Read capacity mode | Write capacity mo... | Total si... | Table class |
|--------------------------|---------------------|--------|---------------|----------|---------|---------------------|--------------------|----------------------|-------------|-------------|
| <input type="checkbox"/> | Mod5_DynamoDB_Table | Active | UserID (S) | - | 0 | Off | Provisioned (S) | Provisioned (S) | 0 bytes | Standard |

aws

Services

Q

IAM

X

Identity and Access Management (IAM)

X

Search IAM

Dashboard

Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Access reports

Access Analyzer

External access

Unused access

Analyzer settings

IAM

>

Roles

Roles (9) Info

An IAM role is an identity you can create that has specific permissions with credentials that are valid for

Search

☐

Role name

☐

[AWSServiceRoleForApplicationAutoScaling_DynamoDBTable](#)

☐

[AWSServiceRoleForSupport](#)

☐

[AWSServiceRoleForTrustedAdvisor](#)

☐

[EC2_Q1-Kinesis_role](#)

☐

[Ec2Kinesisagentrole](#)

☐

[KinesisFirehoseServiceRole-KDS-S3-S-ap-southeast-2-1706439300041](#)

☐

[KinesisFirehoseServiceRole-KDS-S3-Y-ap-southeast-2-1705209477854](#)

☐

Mod5_SQS-Lambda_Role

☐

[PutEventFunction-role-fa9c1y3j](#)

Permissions

Trust relationships

Tags

Access Advisor

Revoke sessions

Permissions policies (2) Info

↺

Simulate ↗

Remove

Add permissions ▲

Attach policies

Create inline policy

<

1

>



⚙

You can attach up to 10 managed policies.

Filter by Type

Q Search

All types ▼

| <input type="checkbox"/> | Policy name ↗ | Type | Attached entities |
|--------------------------|---|-------------|-------------------|
| <input type="checkbox"/> |  AmazonSQSFullAccess | AWS managed | 1 |
| <input type="checkbox"/> |  AWSLambdaBasicExecutionRole | AWS managed | 1 |

Other permissions policies (1/910)

Filter by Type

All types 4 matches

| <input type="checkbox"/> | Policy name | Type | Description |
|-------------------------------------|--|-------------|--|
| <input checked="" type="checkbox"/> | AmazonDynamoDBFullAccess | AWS managed | Provides full access to Amazon Dynamo... |
| <input type="checkbox"/> | AmazonDynamoDBReadOnlyAccess | AWS managed | Provides read only access to Amazon Dyn... |
| <input type="checkbox"/> | AWSLambdaDynamoDBExecutionRole | AWS managed | Provides list and read access to Dynamo... |
| <input type="checkbox"/> | AWSLambdaInvocation-DynamoDB | AWS managed | Provides read access to DynamoDB Strea... |

Permissions

Trust relationships

Tags

Access Advisor

Revoke sessions

Permissions policies (3) Info

↺

Simulate ↗

Remove

Add permissions ▾

You can attach up to 10 managed policies.

Q Search

Filter by Type

All types ▾

< 1 >

⚙

| <input type="checkbox"/> | Policy name ↗ | Type ▾ | Attached entities ▾ |
|--------------------------|---|-------------|---------------------|
| <input type="checkbox"/> | <div><div>+</div><div>AmazonDynamoDBFullAccess</div></div> | AWS managed | <u>1</u> |
| <input type="checkbox"/> | <div><div>+</div><div>AmazonSQSFullAccess</div></div> | AWS managed | <u>1</u> |
| <input type="checkbox"/> | <div><div>+</div><div>AWSLambdaBasicExecutionRole</div></div> | AWS managed | <u>1</u> |

Copy code from “index.js” file, and paste it to Lambda code section:

✓ Successfully updated the function Mod5Lambda.

Code

Test

Monitor

Configuration

Aliases

Versions

Code source [Info](#)

File Edit Find View Go Tools Window

Test

Deploy

Go to Anything (Ctrl-P)

index.js

Execution results x

Environment Vari x

Environment

Mod5Lambda - /

index.js

```

1  const aws = require('aws-sdk');
2
3  // initialise dynamoDB client
4  const dynamoDB = new aws.DynamoDB.DocumentClient({
5    region: 'ap-southeast-2',
6    apiVersion: '2012-08-10'
7  });
8
9  exports.handler = async (event) => {
10   try{
11
12     console.log('event: ', event);
13
14     // event has property called "Records"
15     const { Records } = event;
16
17     // parse the message into json object:
18     const body = JSON.parse(Records[0].body);
19
20     // logs the body which is message
21     console.log("Incoming message body from SQS :", body);
22
23     const params = {
24       TableName: 'Mod5_DynamoDB_Table',
25       Item: {
26         UserID : body.UserID,
27         Name : body.Name,
28         Age : body.Age

```


Send message from SQS:

Amazon SQS > Queues > Mod5Queue > Send and receive messages

Send and receive messages

Send messages to and receive messages from a queue.

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

Message body
Enter the message to send to the queue.

```
{"UserID": "123", "Name": "Kimmy", "Age": "22" }
```

Amazon SQS > Queues > Mod5Queue > Send and receive messages

Send and receive messages

Send messages to and receive messages from a queue.

Send message [Info](#)

 **Your message has been sent and is ready to be received.**

Message body
Enter the message to send to the queue.

```
{ "UserID": "123", "Name": "Kimmy", "Age": "22" }
```

Check if data is successfully written to DynamoDB table:

DynamoDB > Tables

Tables (1) [Info](#) Refresh Actions Delete Create table



Any tag key Any tag value < 1 > ⓘ

| <input type="checkbox"/> | Name | Status | Partition key | Sort key | Indexes | Deletion protection | Read capacity mode | Write capacity mo... | Total si... | Table class |
|--------------------------|---------------------|--------|---------------|----------|---------|---------------------|--------------------|----------------------|-------------|-------------|
| <input type="checkbox"/> | Mod5_DynamoDB_Table | Active | UserID (S) | - | 0 | Off | Provisioned (5) | Provisioned (5) | 0 bytes | Standard |

Mod5_DynamoDB_Table

Refresh Actions Explore table items

[Overview](#) | [Indexes](#) | [Monitor](#) | [Global tables](#) | [Backups](#) | [Exports and streams](#) | [Ad](#) >

 **Protect your DynamoDB table from accidental writes and deletes**
When you turn on point-in-time recovery (PITR), DynamoDB backs up your table data automatically so that you can restore to any given second in the preceding 35 days. Additional charges apply. [Learn more](#) 

Edit PITR ×

General information [Info](#)

Mod5_DynamoDB_Table

Autopreview

View table details

▼ Scan or query items

☒ Scan

☐ Query

Select a table or index

Table - Mod5_DynamoDB_Table ▼

Select attribute projection

All attributes ▼

► Filters

Run

Reset

✓ Completed. Read capacity units consumed: 0.5

×

Items returned (1)

↺

Actions ▼

Create item

<

1

>

⚙

🖨

| <input type="checkbox"/> | UserID (String) ▼ | Age ▼ | Name ▼ |
|--------------------------|-------------------|-------|--------|
| <input type="checkbox"/> | 123 | 22 | Kimmy |

Conclusion:

Data arrival in SQS has successfully triggered the Lambda function to write the data to DynamoDB table.