

Simple Queue Services (SQS)

Introduction:

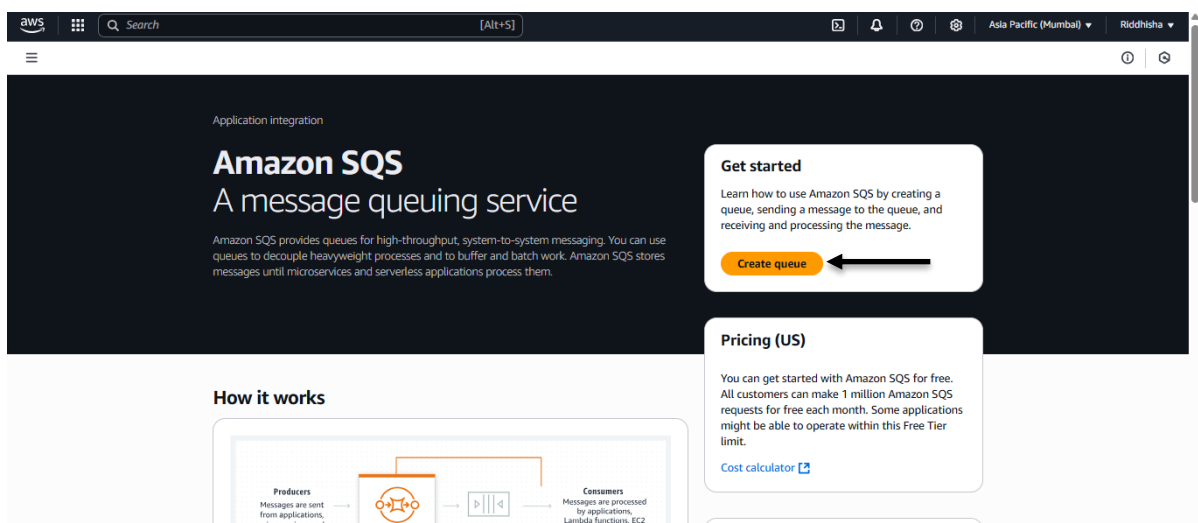
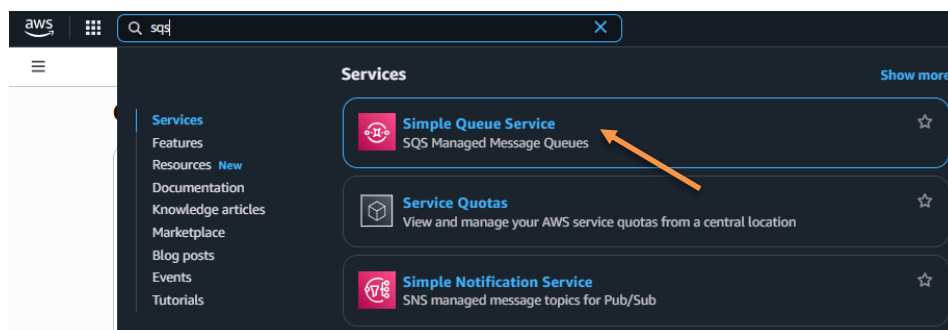
Amazon Simple Queue Service (SQS) is a fully managed cloud service that allows different parts of an application to communicate with each other by sending and receiving messages through queues. It is especially useful in situations where one part of the application is slower or temporarily busy. In such cases, SQS stores the messages in a queue until the system is ready to process them. This ensures that no message is lost and the application continues running smoothly without any interruptions.

SQS helps build reliable, scalable, and loosely connected systems. It supports two types of queues: "Standard Queue", which offers high speed and at-least-once message delivery (though not always in order), and "FIFO Queue" (First-In-First-Out), which ensures that messages are delivered exactly once and in the exact order they were sent.

Step by Step Instructions:

Step 1:

- In "AWS Management Console", search "SQS" and open it.
- Click on "Create queue".



Step 2:

- In “Type”, select “Standard”.

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

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

- Enter the “name” of queue.

Name

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

- In “Configuration”, there are many options.
- Visibility timeout - The time a message stays hidden after being picked up by a consumer, preventing other consumers from receiving it. Set according to your need (e.g. “30 Seconds”).

Configuration [Info](#)
Set the maximum message size, visibility to other consumers, and message retention.

Visibility timeout [Info](#)

Should be between 0 seconds and 12 hours.

Delivery delay [Info](#)

Should be between 0 seconds and 15 minutes.

Receive message wait time [Info](#)
 Seconds
Should be between 0 and 20 seconds.

Message retention period [Info](#)

Should be between 1 minute and 14 days.

Maximum message size [Info](#)
 KB
Should be between 1 KB and 256 KB.

- Message retention period - The amount of time messages are stored in the queue if not deleted, before they are automatically removed.
- Set according to your need (e.g. “4 Days”).

Configuration [Info](#)

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

Visibility timeout [Info](#)

Seconds

Should be between 0 seconds and 12 hours.

Delivery delay [Info](#)

Seconds

Should be between 0 seconds and 15 minutes.

Receive message wait time [Info](#)

Seconds

Should be between 0 and 20 seconds.

Message retention period [Info](#)

Days

Should be between 1 minute and 14 days.

Maximum message size [Info](#)

KB

Should be between 1 KB and 256 KB.

- Delivery delay - The delay before a new message becomes available to consumers after being sent to the queue.
- Set as per your need (e.g. "0 Seconds").

Configuration [Info](#)

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

Visibility timeout [Info](#)

Seconds

Should be between 0 seconds and 12 hours.

Delivery delay [Info](#)

Seconds

Should be between 0 seconds and 15 minutes.

Receive message wait time [Info](#)

Seconds

Should be between 0 and 20 seconds.

Message retention period [Info](#)

Days

Should be between 1 minute and 14 days.

Maximum message size [Info](#)

KB

Should be between 1 KB and 256 KB.

- Receive message wait time - The time a receive request waits for a message to arrive before returning (used in long polling).
- Set as per your need (e.g. "0 Seconds").
- Set "Maximum message size" (e.g. "256 KB").

Configuration [Info](#)

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

Visibility timeout [Info](#)

Seconds

Should be between 0 seconds and 12 hours.

Delivery delay [Info](#)

Seconds

Should be between 0 seconds and 15 minutes.

Receive message wait time [Info](#)

Seconds

Should be between 0 and 20 seconds.

Message retention period [Info](#)

Days

Should be between 1 minute and 14 days.

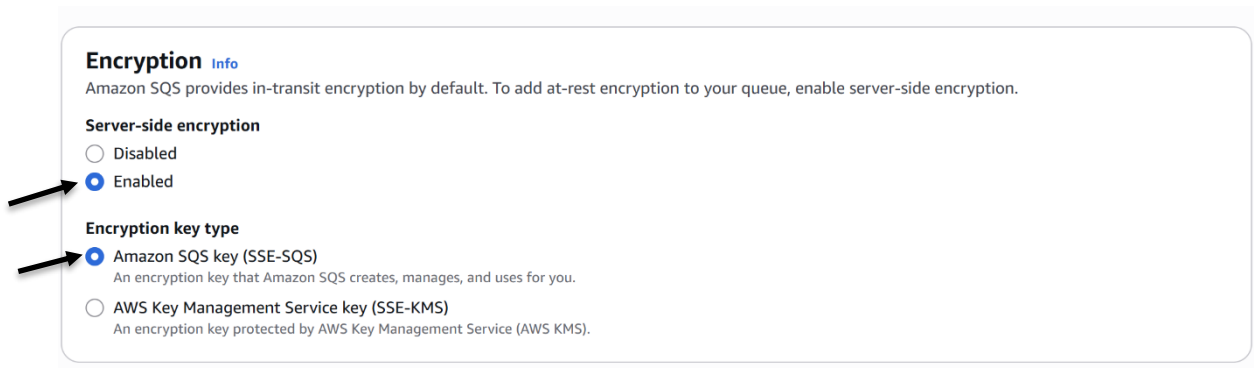
Maximum message size [Info](#)

KB

Should be between 1 KB and 256 KB.

Step 3:

- “Server-side encryption” is enabled.
- Set “Encryption key type” as “Amazon SQS key (SSE-SQS)”.



Encryption [Info](#)

Amazon SQS provides in-transit encryption by default. To add at-rest encryption to your queue, enable server-side encryption.

Server-side encryption

☐ Disabled

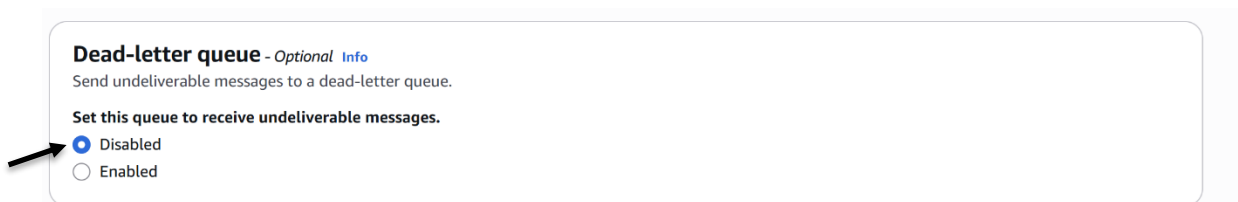
☒ Enabled

Encryption key type

☒ Amazon SQS key (SSE-SQS)
An encryption key that Amazon SQS creates, manages, and uses for you.

☐ AWS Key Management Service key (SSE-KMS)
An encryption key protected by AWS Key Management Service (AWS KMS).

- “Dead-letter queue” is disabled.



Dead-letter queue - *Optional* [Info](#)

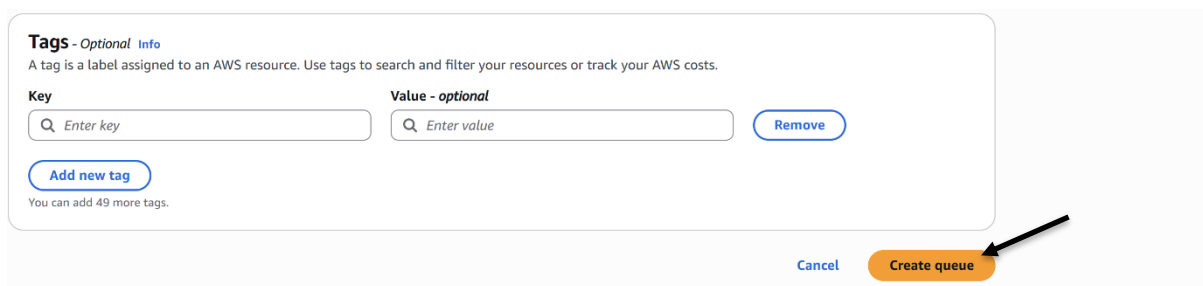
Send undeliverable messages to a dead-letter queue.

Set this queue to receive undeliverable messages.

☒ Disabled

☐ Enabled

- Click on “Create queue”.



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

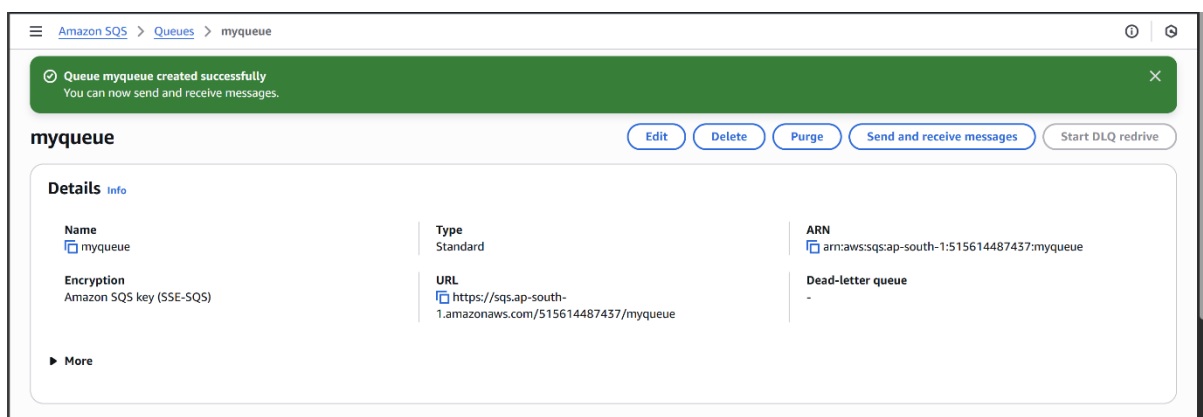
[Remove](#)

[Add new tag](#)

You can add 49 more tags.

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

- Queue is created.



Amazon SQS > Queues > myqueue

Queue myqueue created successfully
You can now send and receive messages.

[Edit](#) [Delete](#) [Purge](#) [Send and receive messages](#) [Start DLQ redrive](#)

myqueue

Details [Info](#)

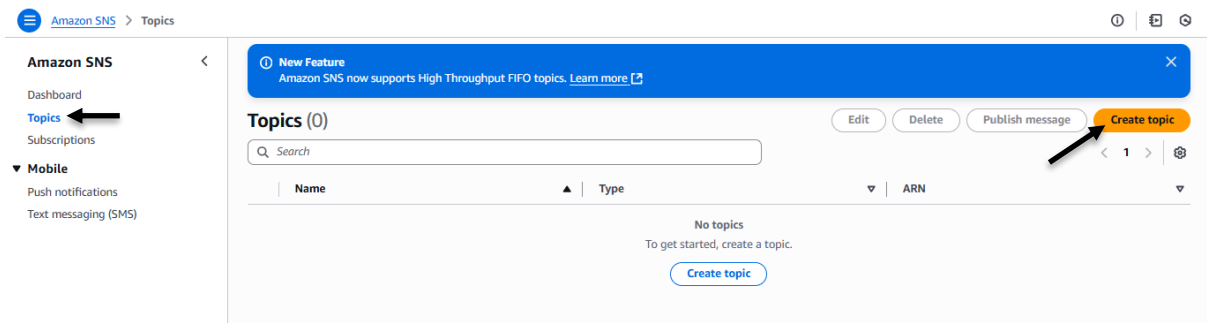
Name myqueue	Type Standard	ARN arn:aws:sqs:ap-south-1:515614487437:myqueue
Encryption Amazon SQS key (SSE-SQS)	URL https://sqs.ap-south-1.amazonaws.com/515614487437/myqueue	Dead-letter queue -

[More](#)

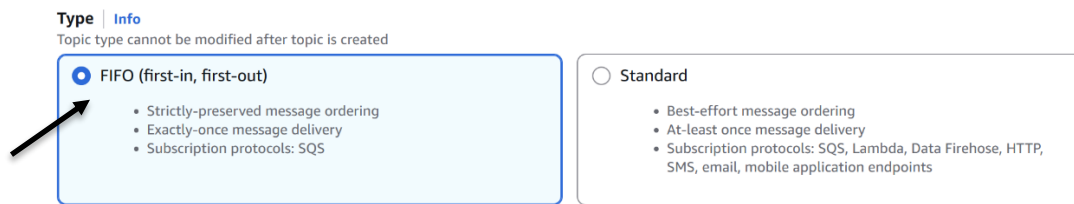
Step 4:

- Open duplicate tab and search “SNS”.

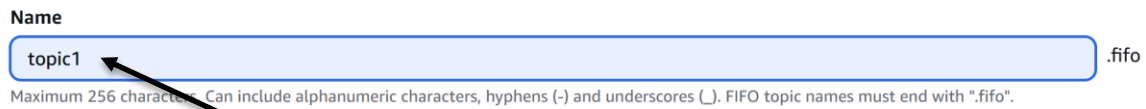
- Go to “Topics” and click on “Create topic”.



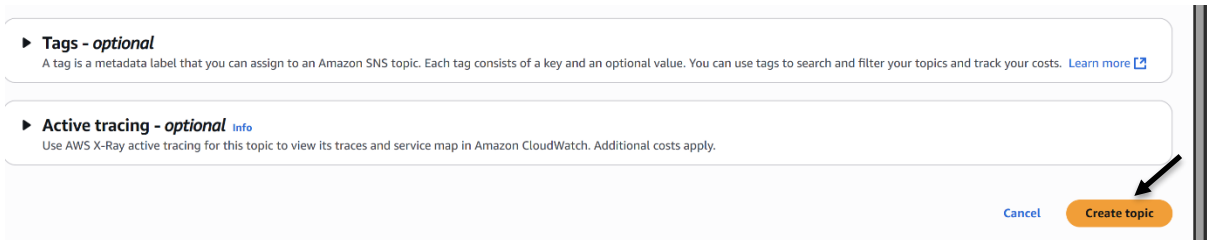
- In “Type”, select “FIFO (first-in, first-out)”.



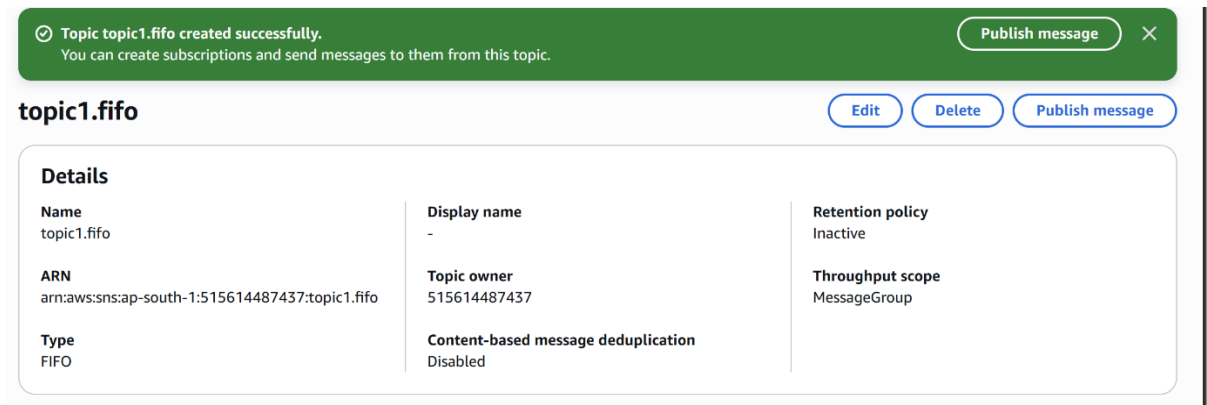
- Enter the name of topic.



- Click on “Create topic”.

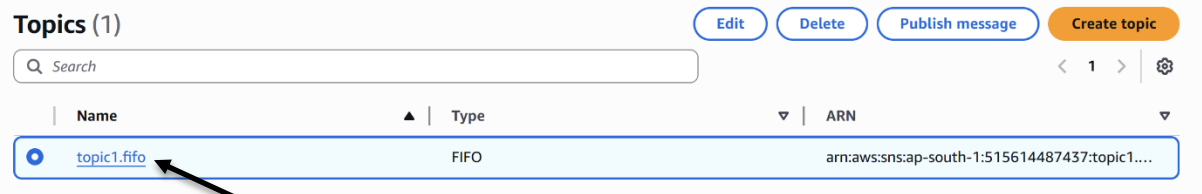


- Topic is successfully created.

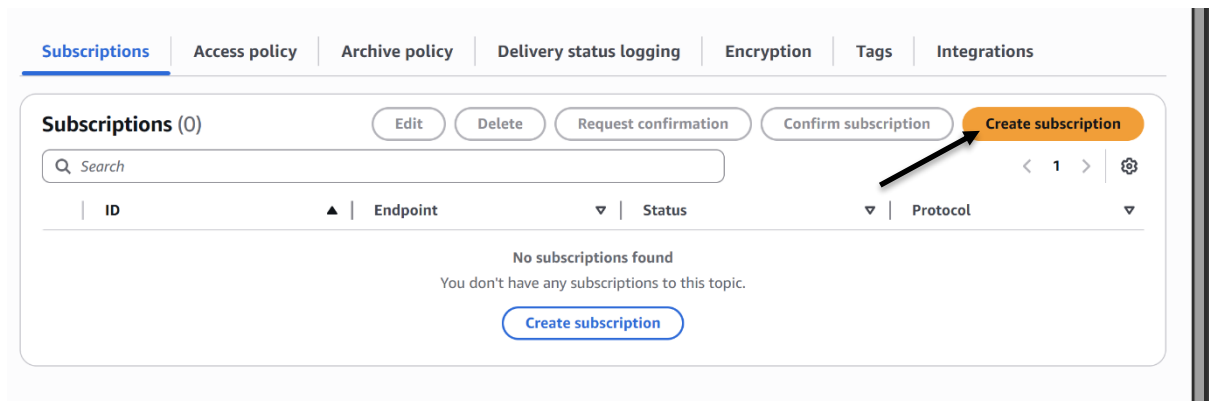


Step 5:

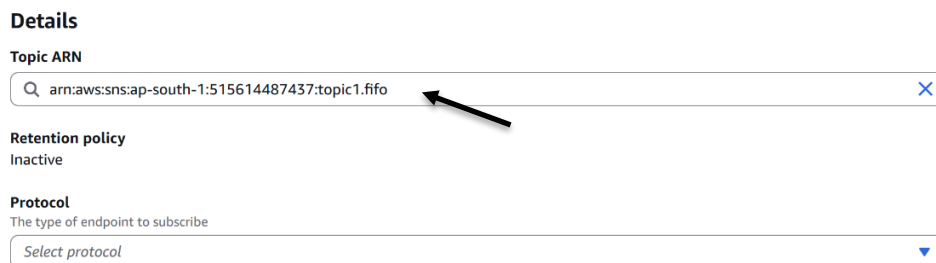
- Select the topic and click on the topic name.



- Scroll down and click on “Create subscription”.



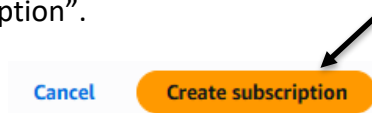
- Select “Topic ARN”.



- In “Protocol”, select “Amazon SQS”.



- Click on “Create subscription”.



- Subscription is created successfully.

✔ Subscription to topic1.fifo created successfully.
The ARN of the subscription is arn:aws:sns:ap-south-1:515614487437:topic1.fifo:4bfd6b78-f2fd-430f-992d-1480aec5418e.

Subscription: 4bfd6b78-f2fd-430f-992d-1480aec5418e

[Edit](#)[Delete](#)

Details

ARN

arn:aws:sns:ap-south-1:515614487437:topic1.fifo:4bfd6b78-f2fd-430f-992d-1480aec5418e

Endpoint

arn:aws:sqs:ap-south-1:515614487437:myqueue

Topic

[topic1.fifo](#)

Subscription Principal

arn:aws:iam::515614487437:root

Status

✔ Confirmed

Protocol

SQS

Raw message delivery

Disabled

Step 6:

- Change the tab and go back to “SQS”.
- Select the queue you just created and click on “Actions”.

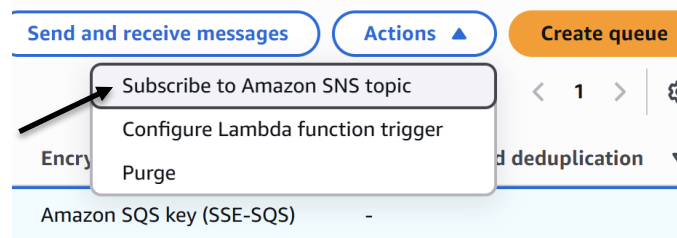
Queues (1)

Search queues by prefix

[Edit](#)[Delete](#)[Send and receive messages](#)[Actions](#)[Create queue](#)

Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
myqueue	Standard	2025-07-19T00:01+05:30	0	0	Amazon SQS key (SSE-SQS)	-

- Select “Subscribe to Amazon SNS topic”.



- In “Amazon SNS topic”, select the topic you just created.

Subscribe to Amazon SNS topic [Info](#)

Amazon SNS topic

To allow your queue to receive messages from an Amazon SNS topic, subscribe it to an Amazon SNS topic.

Specify an Amazon SNS topic available for this queue.

Choose a topic

Search Amazon SNS topics.

Enter Amazon SNS topic ARN

Use existing resource

arn:aws:sns:ap-south-1:515614487437:topic1.fifo

End of results

[Cancel](#)[Save](#)

- Click on “Save”.

Subscribe to Amazon SNS topic [Info](#)

Amazon SNS topic

To allow your queue to receive messages from an Amazon SNS topic, subscribe it to an Amazon SNS topic.

Specify an Amazon SNS topic available for this queue.

arn:aws:sns:ap-south-1:515614487437:topic1.fifo

Cancel

Save

- Subscribed successfully to the topic.

Amazon SQS > Queues > myqueue

Subscribed successfully to topic arn:aws:sns:ap-south-1:515614487437:topic1.fifo.

myqueue [Edit](#) [Delete](#) [Purge](#) [Send and receive messages](#) [Start DLQ redrive](#)

Details [Info](#)

Name myqueue	Type Standard	ARN arn:aws:sqs:ap-south-1:515614487437:myqueue
Encryption Amazon SQS key (SSE-SQS)	URL https://sqs.ap-south-1.amazonaws.com/515614487437/myqueue	Dead-letter queue -

[More](#)

Step 7:

- Go to “SNS” tab.
- In “Topics”, select the topic you created before.
- Click on “Publish message”.

Topics (1) [Edit](#) [Delete](#) [Publish message](#) [Create topic](#)

Search

Name	Type	ARN
topic1.fifo	FIFO	arn:aws:sns:ap-south-1:515614487437:topic1....

- Write a “Subject” for the message.

Publish message to topic

Message details

Topic ARN
arn:aws:sns:ap-south-1:515614487437:topic1.fifo

Subject - optional

SQS

Maximum 100 printable ASCII characters

Message group ID [Info](#)
The mandatory token that specifies that a message belongs to a specific message group. Messages that belong to the same message group are guaranteed to be processed in a FIFO manner.

Enter message group ID

Maximum 128 characters. Can include alphanumeric characters and punctuation.

Message deduplication ID [Info](#)
The token used for deduplication of messages within the deduplication interval.

Enter message deduplication ID

Maximum 128 characters. Can include alphanumeric characters and punctuation.

Time to Live (TTL) - optional [Info](#)
This setting applies only to mobile application endpoints. The number of seconds that the push notification service has to deliver the message to the endpoint.

- Enter “Message group ID” (e.g. “101”).

Message group ID [Info](#)

The mandatory token that specifies that a message belongs to a specific message group. Messages that belong to the same message group are guaranteed to be processed in a FIFO manner.

101

Maximum 128 characters. Can include alphanumeric characters and punctuation.

- Enter “Message deduplication ID” (e.g. “102”).

Message deduplication ID [Info](#)

The token used for deduplication of messages within the deduplication interval.

102

Maximum 128 characters. Can include alphanumeric characters and punctuation.

- Write a message in the “Message body to send to the endpoint”.

Message body to send to the endpoint

1 Hi everyone! Good Morning..

- Click on “Publish message”.

Message attributes [Info](#)

Message attributes let you provide structured metadata items (such as timestamps, geospatial data, signatures, and identifiers) for the message.

Type	Name	Value	
<input type="text" value="Select attribute type"/>	<input type="text" value="Enter attribute name"/>	<input \"value2\"]"="" type="text" value="value or [\" value1\",=""/>	<button>Remove</button>
<button>Add another attribute</button>			

[Cancel](#)

[Publish message](#)

- Message is published successfully.

✓ Message published to topic topic1.fifo successfully.
Message "ID": 062705d3-1bf2-59fe-b61f-65278d144839
Request "ID": fd44a20f-f8cd-5a7c-8dd6-c2fb6e2b8bbb

[Publish another message](#)



topic1.fifo

[Edit](#)

[Delete](#)

[Publish message](#)

Details

Name
topic1.fifo

ARN
arn:aws:sns:ap-south-1:515614487437:topic1.fifo

Type
FIFO

Display name
-

Topic owner
515614487437

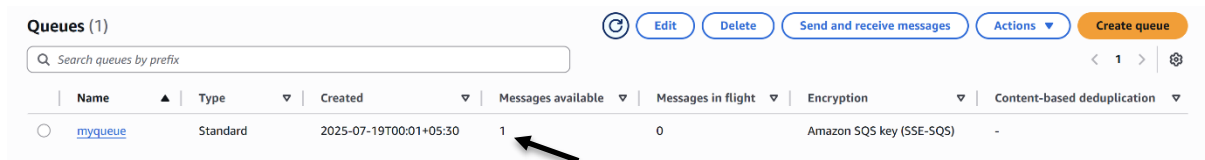
Content-based message deduplication
Disabled

Retention policy
Inactive

Throughput scope
MessageGroup

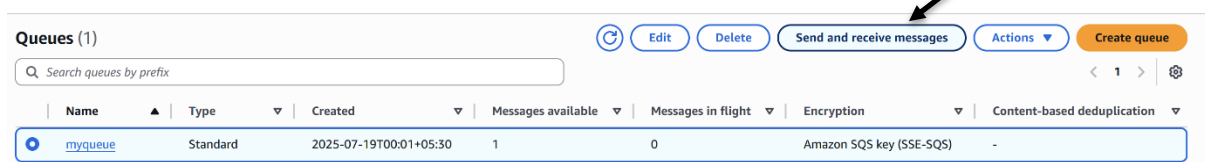
Step 8:

- Go to “SQS” tab.
- In “Queues” section, we can see that “Message available” is 1.



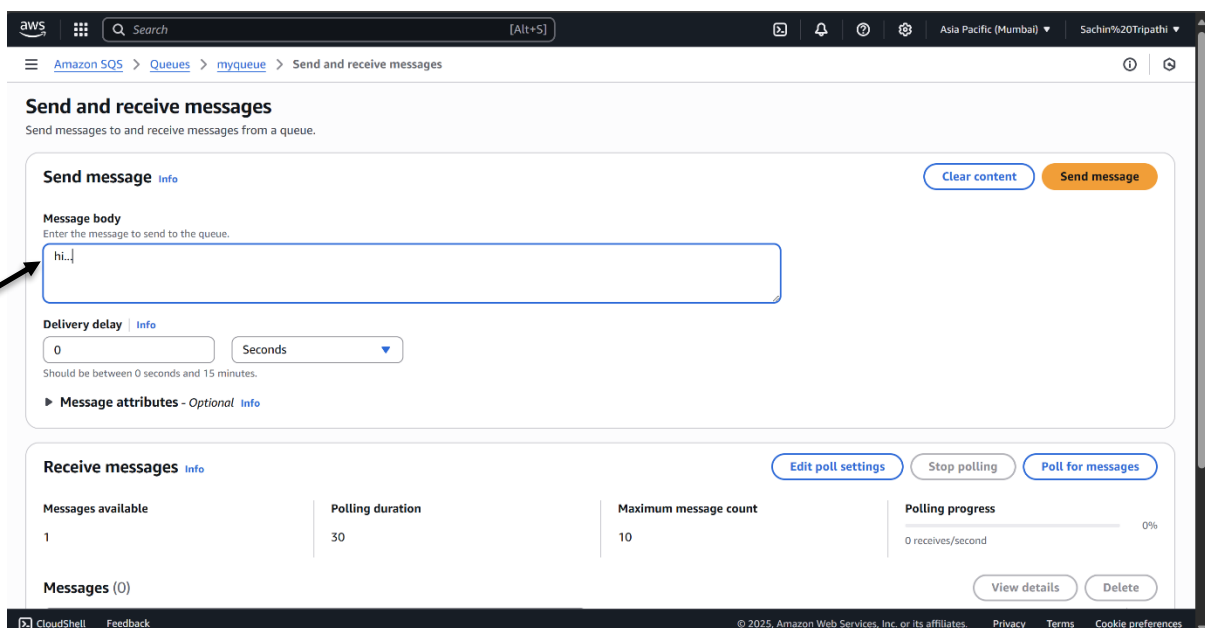
Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
myqueue	Standard	2025-07-19T00:01+05:30	1	0	Amazon SQS key (SSE-SQS)	-

- Select the queue.
- Click on “Send and receive messages”.



Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
myqueue	Standard	2025-07-19T00:01+05:30	1	0	Amazon SQS key (SSE-SQS)	-

- Write a message in the “Message body”.



Send and receive messages
Send messages to and receive messages from a queue.

Send message Info

Message body
Enter the message to send to the queue.

Delivery delay Info
 Seconds
Should be between 0 seconds and 15 minutes.

► **Message attributes** - Optional Info

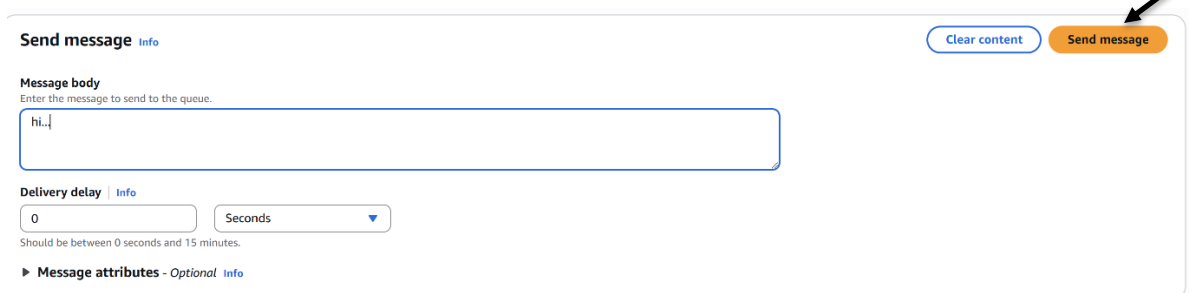
Receive messages Info

Messages available: 1 | **Polling duration**: 30 | **Maximum message count**: 10 | **Polling progress**: 0%
0 receives/second

Messages (0)

View details Delete

- Click on “Send message”.



Send message Info

Message body
Enter the message to send to the queue.

Delivery delay Info
 Seconds
Should be between 0 seconds and 15 minutes.

► **Message attributes** - Optional Info

Clear content **Send message**

- Message has been sent and is ready to be received.

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

✓ Your message has been sent and is ready to be received. View details ×

Message body
Enter the message to send to the queue.

hi...

- Now we can see that “Message available” is 2.

Queues (1) ↻ Edit Delete Send and receive messages Actions Create queue

Search queues by prefix

	Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
<input type="radio"/>	myqueue	Standard	2025-07-19T00:01+05:30	2	0	Amazon SQS key (SSE-SQS)	-

AWS Lambda:

Step 9:

- Create a duplicate tab.
- Search “lambda”.
- Click on “Create a function”.

≡ 🔍

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 service, all with zero administration.

Get started

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

Create a function

How it works Run Next: Lambda responds to events

- Select “Author from scratch”.

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.

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.

- Write the “Function name” (e.g. “This_is_function”).

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 (_).

- Click on “IAM console” under “Execution role”.

▼ 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. Do not delete the role or edit the trust or permissions policies in this role.

Lambda will create an execution role named This_is_function-role-3kplttwy, with permission to upload logs to Amazon CloudWatch Logs.

- In “Select trusted entity”, select “Trusted entity type” as “AWS service”.

Step 1
☒ **Select trusted entity**

Step 2
☐ Add permissions

Step 3
☐ Name, review, and create

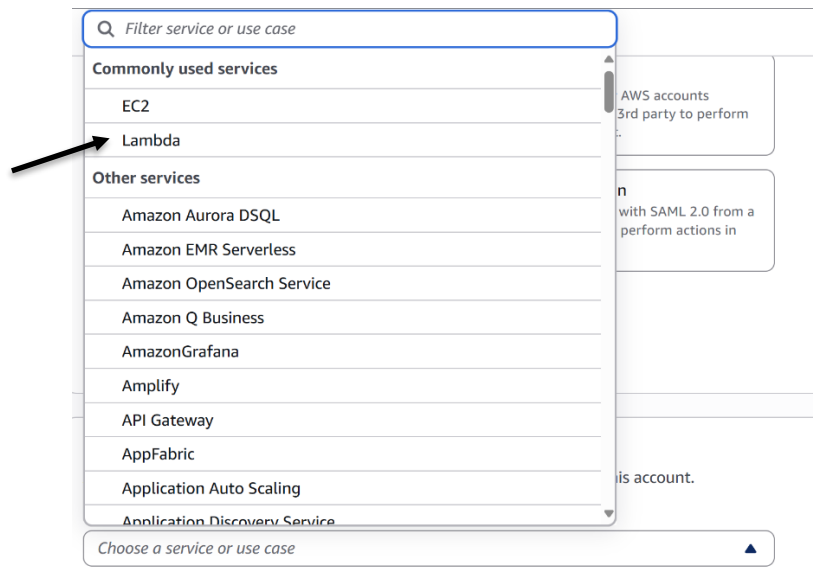
Select trusted entity Info

Trusted entity type

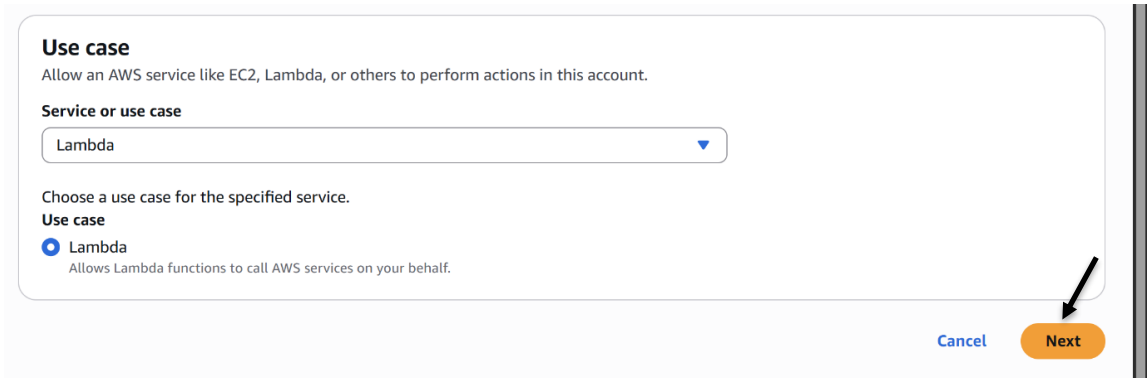
- ☒ **AWS service**
Allow AWS services like EC2, Lambda, or others to perform actions in this account.
- ☐ AWS account
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.
- ☐ Web identity
Allows users federated by the specified external web identity 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.

Step 10:

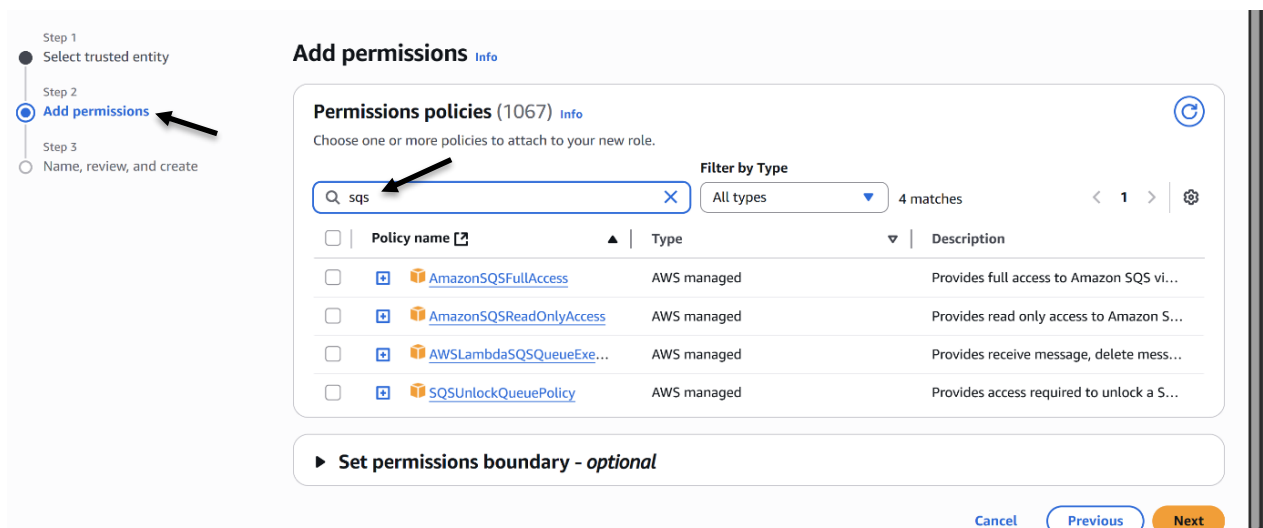
- Select “Lambda” in use case.



- Click on “Next”.



- In “Add permissions”, search “SQS” in “Permissions policies”.



- Select “AmazonSQSFullAccess”.
- Click on “Next”.

Permissions policies (1/1067) [Info](#)

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

Filter by Type

Search: sqs 4 matches

Policy name	Type	Description
<input checked="" type="checkbox"/> AmazonSQSFullAccess	AWS managed	Provides full access to Amazon SQS vi...
<input type="checkbox"/> AmazonSQSReadOnlyAccess	AWS managed	Provides read only access to Amazon S...
<input type="checkbox"/> AWSLambdaSQSQueueExe...	AWS managed	Provides receive message, delete mess...
<input type="checkbox"/> SQSUnlockQueuePolicy	AWS managed	Provides access required to unlock a S...

► Set permissions boundary - optional

Cancel Previous **Next**

Step 11:

- In “Name, review, and create”, enter the “Role name” (e.g. “this_is_role1”).

Step 1: Select trusted entity

Step 2: Add permissions

Step 3: **Name, review, and create**

Name, review, and create

Role details

Role name
Enter a meaningful name to identify this role.

Maximum 64 characters. Use alphanumeric and '+=, @-/_[]{}#%*^&()~|' characters.

Description
Add a short explanation for this role.

Allows Lambda functions to call AWS services on your behalf.

Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: _+=, @-/_[]{}#%*^&()~|'.

Step 1: Select trusted entities [Edit](#)

Role name

Enter a meaningful name to identify this role.

this_is_role1

Maximum 64 characters. Use alphanumeric and '+=, @-/_[]{}#%*^&()~|' characters.

- Click on “Create role”.

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.

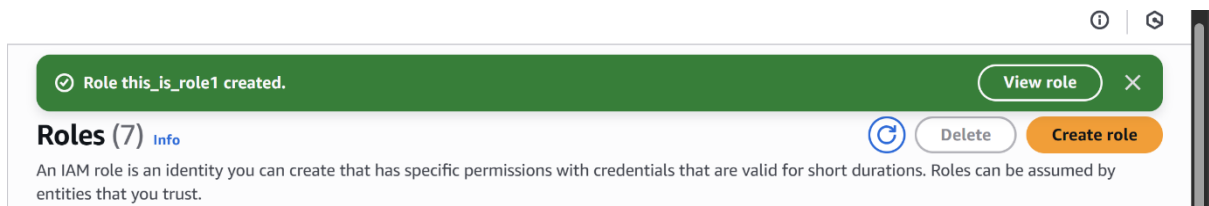
No tags associated with the resource.

[Add new tag](#)

You can add up to 50 more tags.

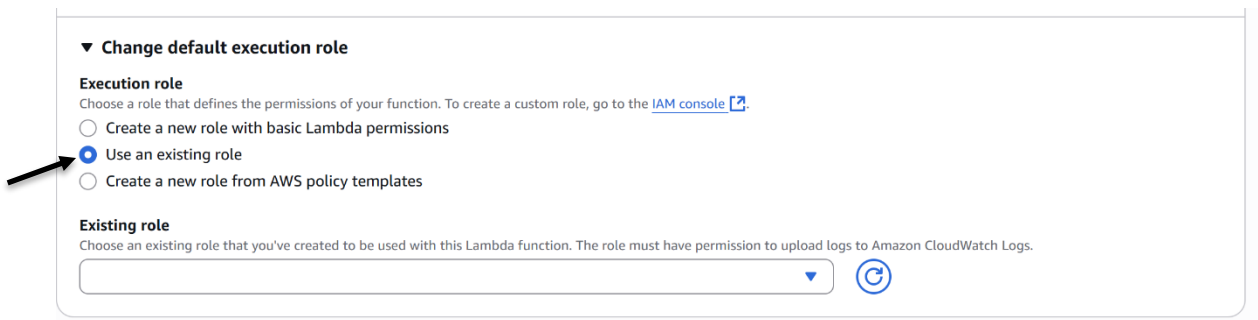
Cancel Previous **Create role**

- Role is successfully created.

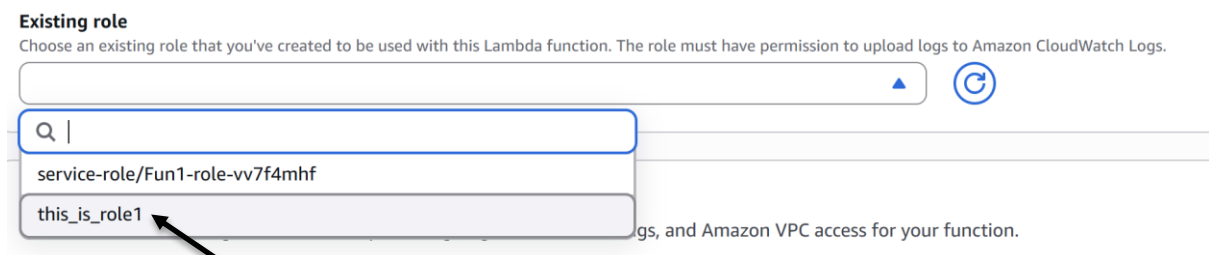


Step 12:

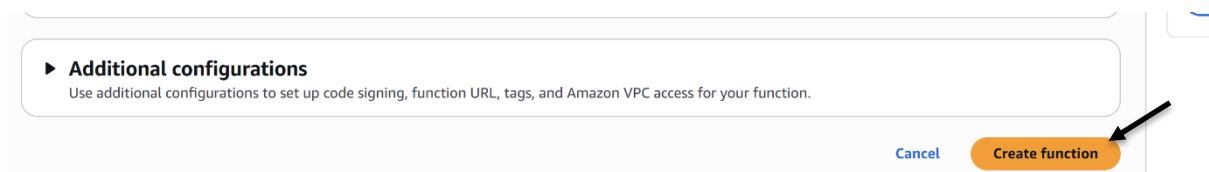
- Go back to the “SQS” tab.
- Select the “Use an existing role” option.



- In “Existing role”, select the role that you have created just now.



- Click on “Create function”.



- Successfully created the lambda function.

✓ Successfully created the function **This_is_function**. You can now change its code and configuration. To invoke your function with a test event, choose "Test".

This_is_function

Throttle

Copy ARN

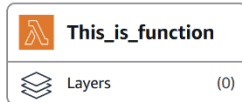
Actions ▼

▼ Function overview [Info](#)

Export to Infrastructure Composer

Download ▼

Diagram | Template



+ Add trigger

+ Add destination

Description

-

Last modified
in 1 second

Function ARN

arn:aws:lambda:ap-south-1:5156144874
37:function:This_is_function

Function URL [Info](#)

-

Step 13:

- Click on "Add trigger".

This_is_function

Throttle

Copy ARN

Actions ▼

▼ Function overview [Info](#)

Export to Infrastructure Composer

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Diagram | Template



+ Add trigger

+ Add destination

Description

-

Last modified
in 1 second

Function ARN

arn:aws:lambda:ap-south-1:5156144874
37:function:This_is_function

Function URL [Info](#)

-

- Search and select "SQS".

Add trigger

Trigger configuration [Info](#)

Select a source

Q |

aws authentication frontend identity mobile sync

VPC Lattice
aws networking private privatelink vpc

Batch/bulk data processing

AWS IoT
aws asynchronous devices iot

CloudWatch Logs
aws asynchronous cw logging management-tools

EventBridge (CloudWatch Events)
aws asynchronous schedule management-tools

S3
aws asynchronous storage

SNS
aws asynchronous messaging notifications pub-sub
push

SQS
aws event-source-mapping polling queue

Real-time/streaming data

Cancel

Add

- In “SQS queue”, select the queue you have created i.e. “myqueue”.

SQS queue

Choose or enter the ARN of an SQS queue.

- Click on “Add” button.

► Additional settings

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

- SQS is added.

▼ Function overview

Info

Export to Infrastructure Composer

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Diagram | Template

This_is_function

Layers (0)

SQS

+ Add trigger

+ Add destination

Description

-

Last modified

2 minutes ago

Function ARN

arn:aws:lambda:ap-south-1:5156144874:37:function:This_is_function

Function URL

Info

Step 14:

- In “Queues”, check whether there are still 2 messages available.
- If yes, refresh the queue.

Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
myqueue	Standard	2025-07-19T00:01+05:30	2	0	Amazon SQS key (SSE-SQS)	-

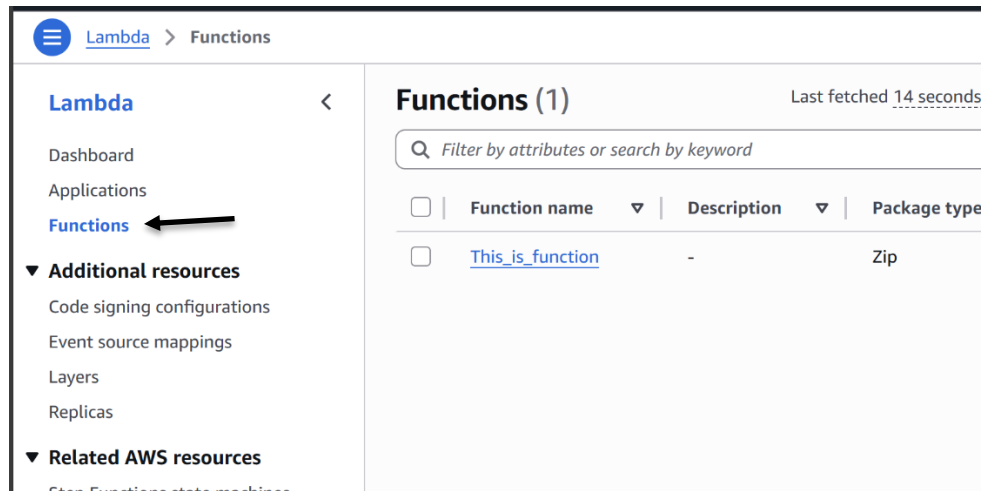
Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
myqueue	Standard	2025-07-19T00:01+05:30	0	0	Amazon SQS key (SSE-SQS)	-

- All the messages are sent.

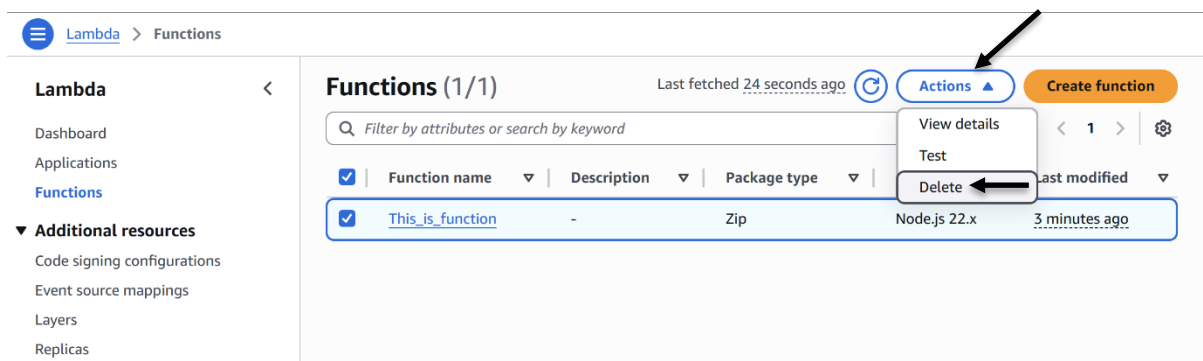
Deleting the lambda function:

Step 15:

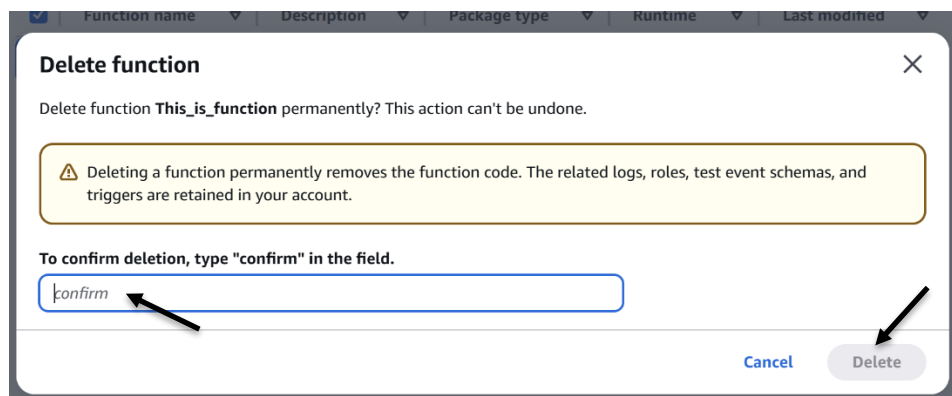
- Go to “Functions” under “Lambda” section.



- Select the function, go to “Actions” and then click on “Delete”.



- Type “confirm” and click on “Delete”.



- Function is deleted successfully.

✔ Successfully deleted function: This_is_function

Functions (0) Last fetched 54 seconds ago

Filter by attributes or search by keyword

Function name

Description

Package type

Runtime

Last modified

Deleting topic in SNS:

Step 16:

- Go to “Simple Notification Services (SNS)”.
- In “Topics”, select the topic and click on “Delete”.
- Type “delete me” and click on “Delete”.

Topics (1)

Search

Name

Type

ARN

topic1.fifo

FIFO

arn:aws:sns:ap-south-1:515614487437:topic1....

Delete topic topic1.fifo

Are you sure you want to delete topic **topic1.fifo** permanently? You can't undo this action.

To confirm deletion, enter the phrase delete me.

delete me

Cancel Delete

- Topic deleted successfully.

✔ Topic topic1.fifo deleted successfully.

Topics (0)

Search

Name

Type

ARN

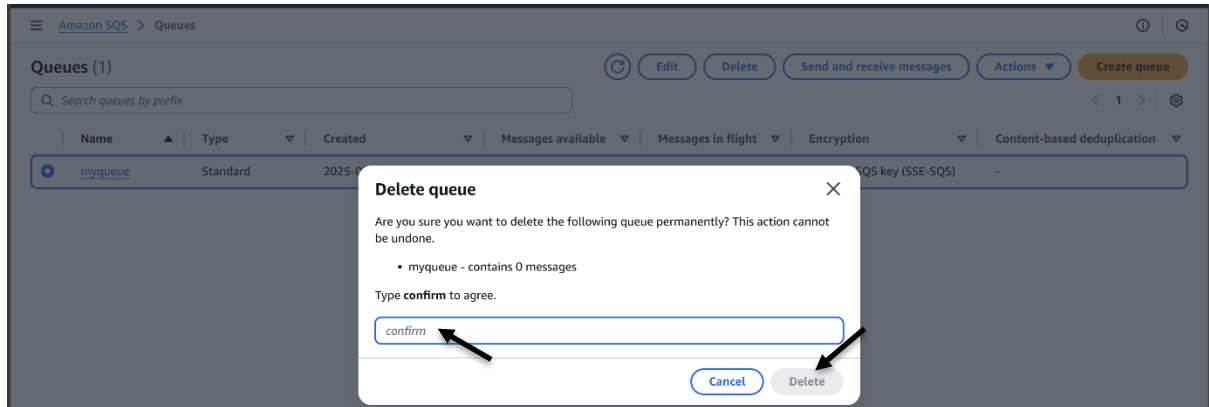
No topics
To get started, create a topic.

Create topic

Deleting queue in SQS:

Step 17:

- Go to “Simple Queue Services (SQS)”.
- In “Queues”, select the queue and click on “Delete”.
- Type “confirm” and click on “Delete”.



- Queue is deleted successfully.

