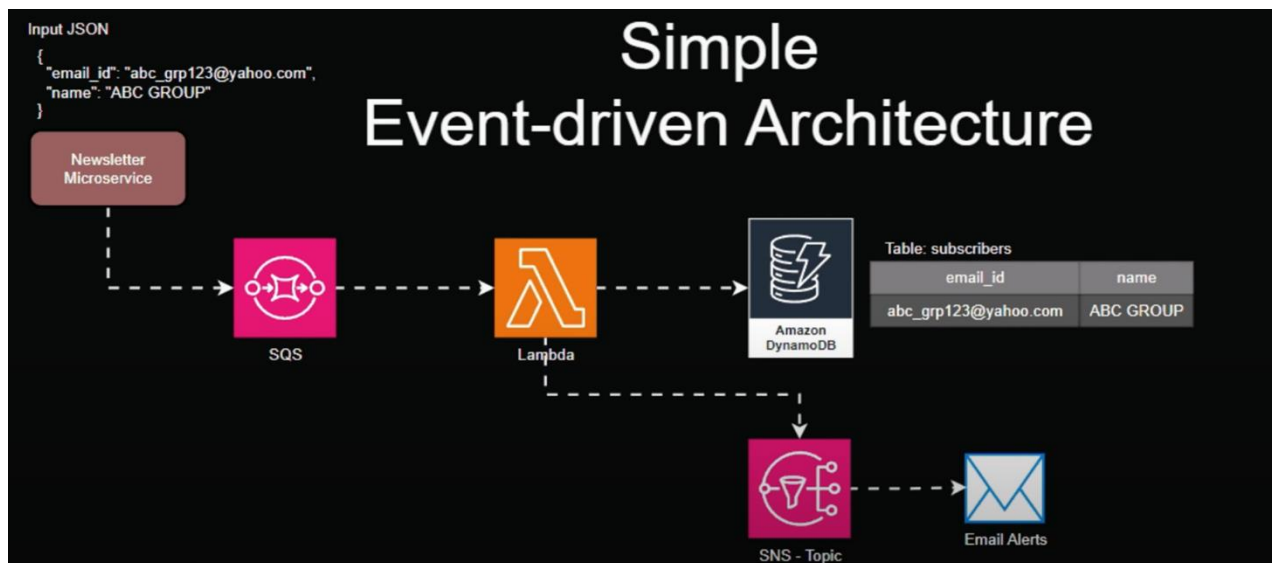


TITLE :SIMPLE EVENT-DRIVEN ARCHITECTURE



STEP 1:CREATE SQS

1.Sign in to the AWS Management Console:

- Open the [AWS Management Console](#).
- Sign in with your AWS account credentials.

2.Navigate to Amazon SQS:

- In the search bar, type SQS and select Simple Queue Service from the results.

3. Create a New Queue:

- Click on the Create queue button.

4.Configure Queue Settings:

- **Name:** Enter a name for your queue.
- **Queue Type:** Select the queue type (Standard or FIFO).
- **Standard:** Best-effort ordering, nearly unlimited number of transactions per second.

5.Create Queue:

- Click the Create queue button at the bottom of the page.



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

MyQueue

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

Configuration [Info](#)

Queues (1)



Edit

Delete

Send and receive messages

Actions ▾

Create queue

Search queues by prefix



1



	Name ▲	Type ▼	Created ▼	Messages available ▼	Messages in flight ▼	Encryption ▼
	eventsqs	Standard	2024-09-14T17:20+05:30	0	0	Amazon SQS key (SSE-SQS)

STEP 2:CREATE LAMBDA

1.Sign in to the AWS Management Console:

- Open the [AWS Management Console](#).
- Sign in with your AWS account credentials.

2.Navigate to AWS Lambda:

- In the search bar, type Lambda and select Lambda from the results.

3.Create a New Function:

- Click the Create function button.

4. Configure the Function:

- **Author from scratch:** Select this option to create a new Lambda function.
- **Function name:** Enter a name for your function.
- **Runtime:** Select the runtime for your code (e.g., Python, Node.js, Java, etc.).
- **Role:** Choose the execution role for your function.
- You can use an existing role or create a new role with basic Lambda permissions.

The screenshot shows the 'Create function' page in the AWS Management Console. At the top, there's a breadcrumb trail: 'Lambda > Functions > Create function'. The main heading is 'Create function' with an 'Info' link. Below the heading, a prompt says 'Choose one of the following options to create your function.' There are three radio button options: 'Author from scratch' (selected), 'Use a blueprint', and 'Container image'. The 'Author from scratch' option has a subtext 'Start with a simple Hello World example.' The 'Use a blueprint' option has a subtext 'Build a Lambda application from sample code and configuration presets for common use cases.' The 'Container image' option has a subtext 'Select a container image to deploy for your function.' Below these options is a section titled 'Basic information'. It contains a 'Function name' field with the value 'eventlambda' and a subtext 'Enter a name that describes the purpose of your function. Use only letters, numbers, hyphens, or underscores with no spaces.' There is also a 'Runtime' dropdown menu with 'Python 3.9' selected and a subtext 'Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.'

Lambda > Functions > Create 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 to deploy for your function.

Basic information

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

eventlambda

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.

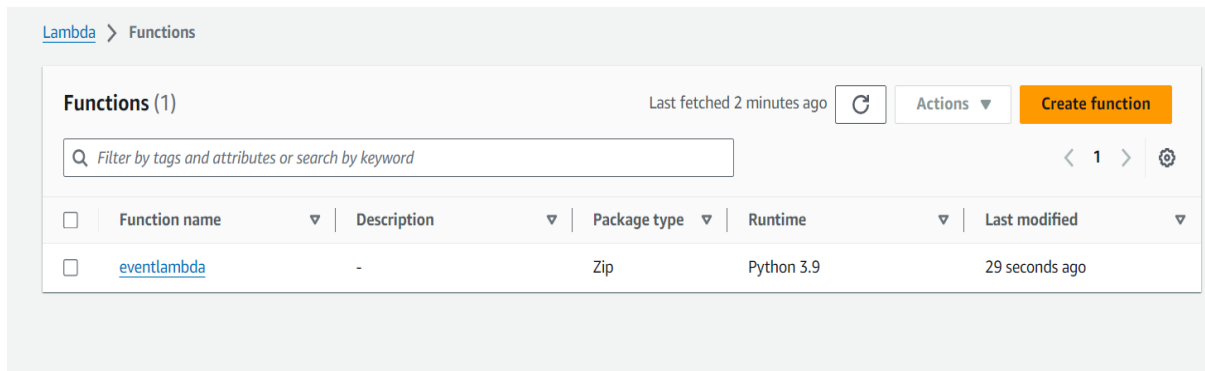
Python 3.9 ▼

- **Create Function:**

Click the Create function button at the bottom of the page.

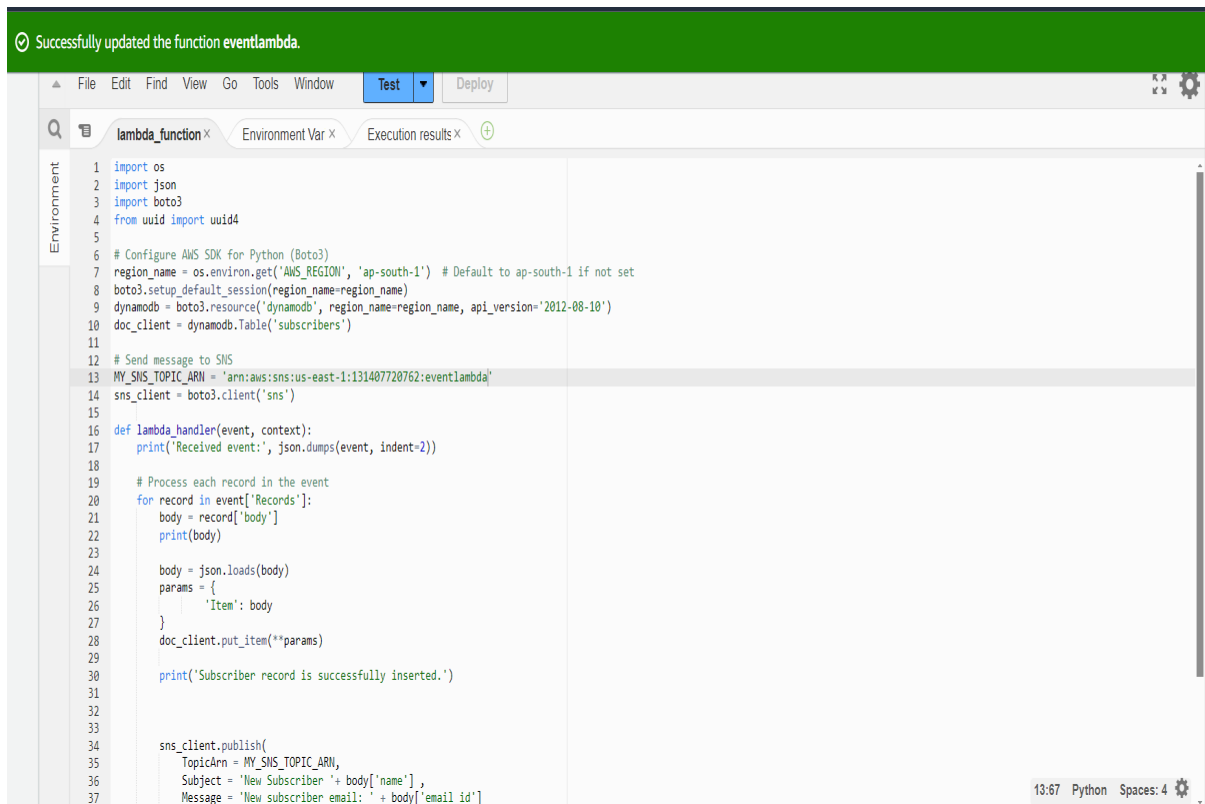
- **Your Lambda Function is Ready:**

You will be taken to the function's details page, where you can test, monitor, and manage your function.



Write Your Code:

1. In the code editor, you can write or upload your code



Test event action

☐ Create new event

☒ Edit saved event

Event name

Aravind



Delete

Event JSON

Format JSON

```
1 {  
2   "email-id": "aravindrio@gmail.com",  
3   "name": "Aravind"  
4 }  
5 }
```

Cancel

Invoke

Save

STEP 3:

AWS Lambda to be triggered by an SQS (Simple Queue Service) message, but it's not working because the necessary policy isn't attached.

⊗ Couldn't configure trigger for queue.

Error code: InvalidParameterValueException. Error message: The provided execution role does not have permissions to call ReceiveMessage on SQS

[Amazon SQS](#) > [Queues](#) > [eventsqs](#) > Trigger AWS Lambda function

Trigger AWS Lambda function [Info](#)

Lambda function

Set incoming messages to trigger a Lambda function.

Region

us-east-1

Specify an AWS Lambda function available for this queue.

arn:aws:lambda:us-east-1:131407720762:function:eventlambda

Cancel

Save

STEP 4: GOTO LAMBDA CONFIGURATION

Select the Lambda Execution Role:

- Find and select the role associated with your Lambda function.

The screenshot displays the AWS Lambda console's Configuration tab for a specific function. The left-hand navigation pane includes links for General configuration, Triggers, Permissions (which is currently selected), Destinations, Function URL, Environment variables, Tags, VPC, RDS databases, and Monitoring and operations tools. The main content area is titled 'Execution role' and includes buttons for refreshing, editing, and viewing the role document. Below this, the 'Role name' is listed as 'eventlambda-role-lo99eenq'. A 'Resource summary' section provides instructions on how to view permissions and lists 'Amazon CloudWatch Logs' as a resource with 3 actions and 2 resources. At the bottom, there are tabs for 'By action' and 'By resource', with the latter being active. This view shows a table with one resource: 'arn:aws:logs:us-east-1:131407720762:*'.

STEP 5: Attach the Policy:

1. In the Permissions tab, click on Add permissions and then choose Attach policies.
2. After creating the policy, search for it in the "Attach policies" section.
3. Select the policy and attach it to the role.
4. This will grant your Lambda function the necessary permissions to interact with SNS, SQS, and DynamoDB.

✔ Policies have been successfully attached to role.

1 hour

Permissions

Trust relationships

Tags

Access Advisor

Revoke sessions

Permissions policies (4) Info

⌂

Simulate

Remove

Add permissions

You can attach up to 10 managed policies.

Search

Filter by Type

All types

< 1 >

<input type="checkbox"/>	Policy name	Type	Attached entities
<input type="checkbox"/>	AmazonDynamoDBFullAccess	AWS managed	1
<input type="checkbox"/>	AmazonSNSFullAccess	AWS managed	1
<input type="checkbox"/>	AmazonSQSFullAccess	AWS managed	1
<input type="checkbox"/>	AWSLambdaBasicExecutionRole-44b71c...	Customer managed	1

[Amazon SQS](#) > [Queues](#) > [eventsqs](#) > Trigger AWS Lambda function

Trigger AWS Lambda function Info

Lambda function

Set incoming messages to trigger a Lambda function.

Region

us-east-1

Specify an AWS Lambda function available for this queue.

arn:aws:lambda:us-east-1:131407720762:function:eventlambda

Cancel

Save

STEP 6:LAMBDA FUNCTION SUCCESSFULLY TRIGGERED IN THIS QUEUE

✔ Lambda function arn:aws:lambda:us-east-1:131407720762:function:eventlambda is triggered when a message arrives in this queue.

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

eventsqs

Edit

Delete

Purge

Send and receive messages

Start DLQ redrive

Details Info

Name

eventsqs

Encryption

Amazon SQS key (SSE-SQS)

Type

Standard

URL

<https://sqs.us-east-1.amazonaws.com/131407720762/eventsqs>

ARN

arn:aws:sqs:us-east-1:131407720762:eventsqs

Dead-letter queue

-

More

< SNS subscriptions

Lambda triggers

EventBridge Pipes

Dead-letter queue

Monitoring

Tagging

Access policy

Encryption >

Lambda triggers (1) Info

⌂

View in Lambda

Delete

Configure Lambda function trigger

STEP 7: Create a Table:

1. Click on "Create table."
2. Enter the "Table name" and "Primary key" attributes.
 - For example, let's create a table named ExampleTable with a primary key named Id of type String.
3. Configure additional settings if needed, such as read/write capacity mode, encryption, and secondary indexes.

4. Review and Create:

- Review the settings.
- Click on "Create table."

[DynamoDB](#) > [Tables](#) > 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.

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.

1 to 255 characters and case sensitive.

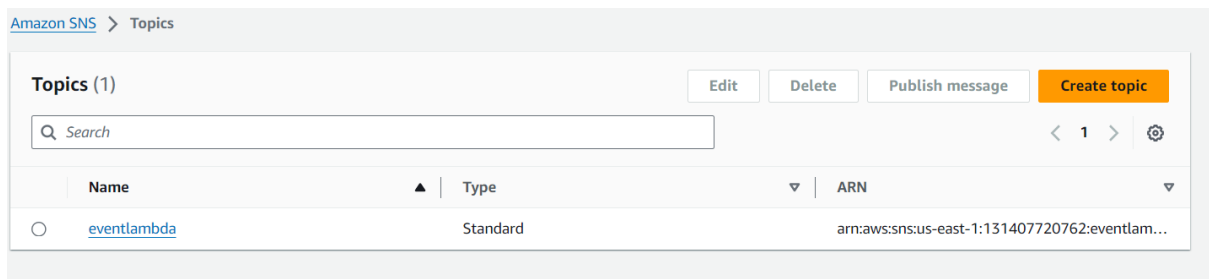
Sort key - optional
You can use a sort key as the second part of a table's primary key. The sort key allows you to sort or search among all items sharing the same partition key.

1 to 255 characters and case sensitive.

Tables (1) Info								
<input type="text" value="Find tables"/>			Any tag key		Any tag value		< 1 > ⚙	
<input type="checkbox"/>	Name ▲	Status ▼	Partition key ▼	Sort key ▼	Indexes ▼	Deletion protection ▼	Read capacity mode ▼	Write capacity mode
<input type="checkbox"/>	logins	🟢 Active	email (S)	-	0	🚫 Off	Provisioned (5)	Provisioned (5)

STEP 8: Create a Topic:

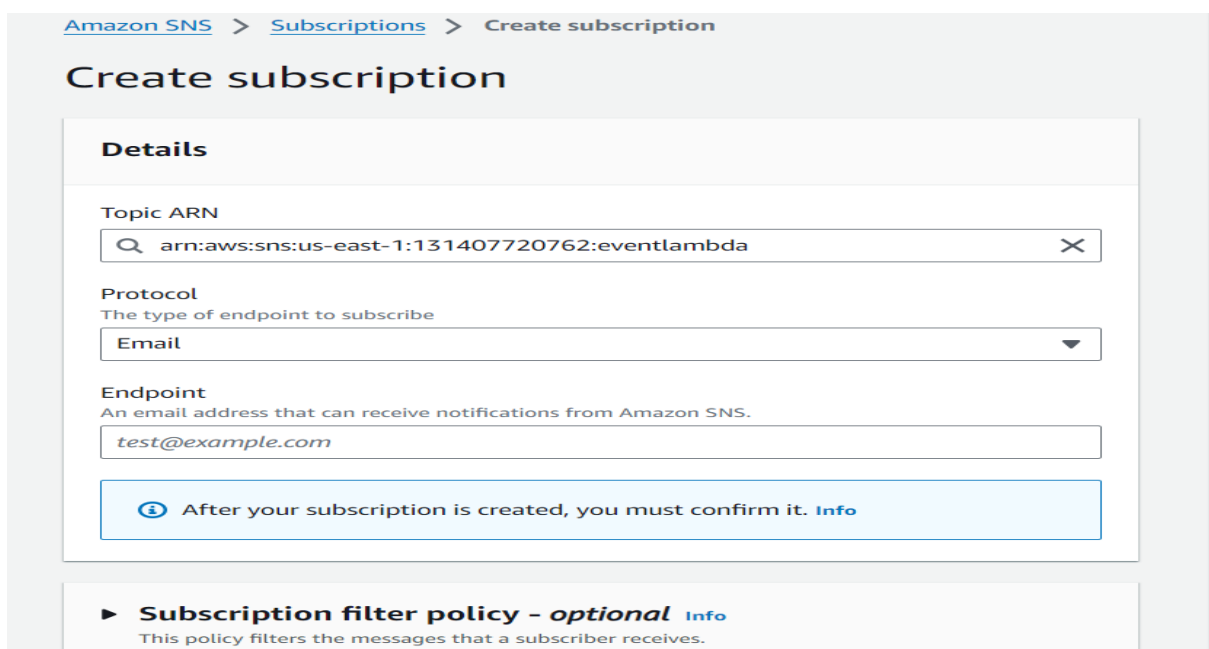
- In the left navigation pane, choose "Topics."
- Click on "Create topic."
- Select "Standard" for the topic type (or "FIFO" if you need first-in-first-out delivery).
- Enter a name for the topic,
- Click on "Create topic."



The screenshot shows the Amazon SNS console's "Topics" page. At the top, there's a breadcrumb "Amazon SNS > Topics". Below this, a header bar contains "Topics (1)" on the left and three buttons: "Edit", "Delete", and "Publish message" in the center, and a prominent orange "Create topic" button on the right. A search bar with the placeholder "Search" is located below the header. The main content area is a table with columns: "Name", "Type", and "ARN". There is one entry in the table with the name "eventlambda", type "Standard", and an ARN starting with "arn:aws:sns:us-east-1:131407720762:eventlam...".

STEP 9: Subscribe to the Topic:

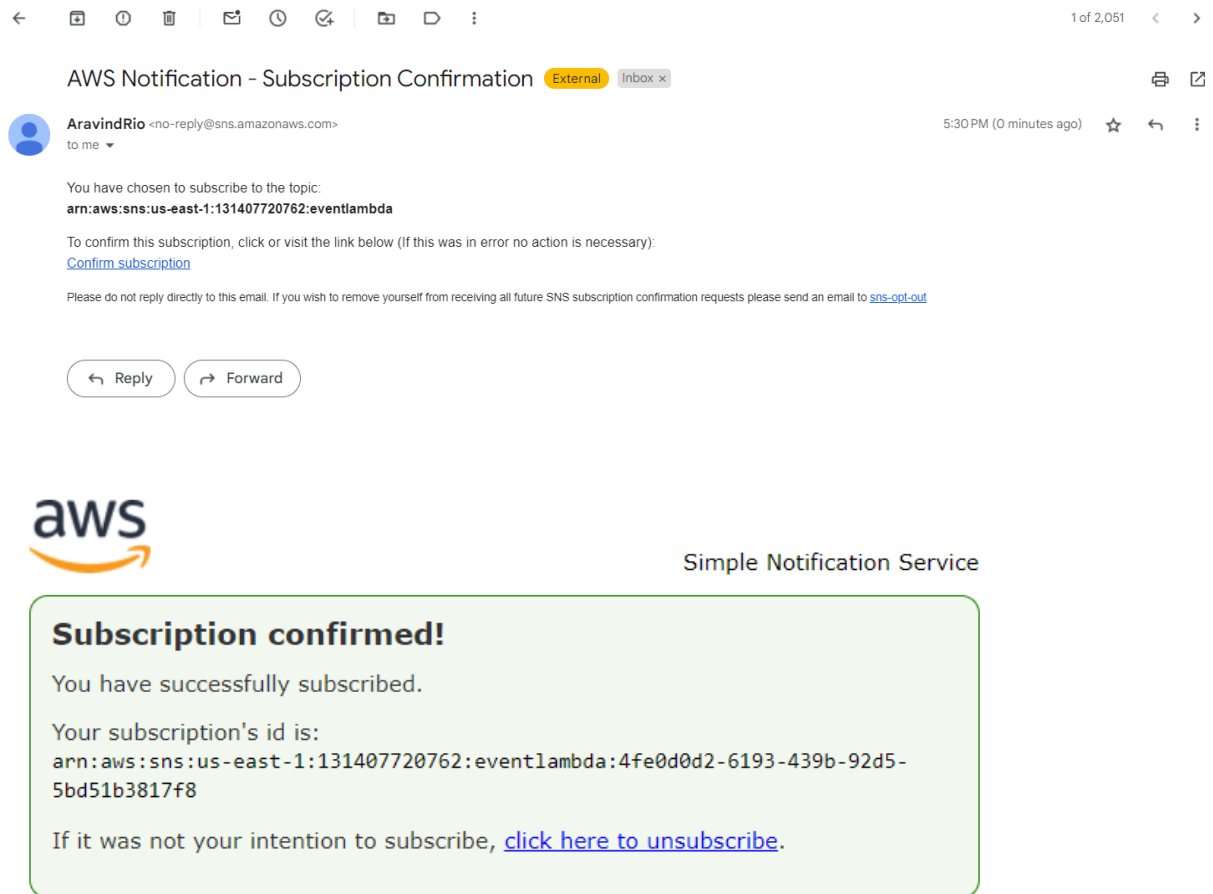
- After creating the topic, click on the topic ARN (Amazon Resource Name) to open the topic details.
- In the "Subscriptions" section, click on "Create subscription."
- Choose a protocol (e.g., Email, HTTP/S, Lambda, SQS).
- Enter the endpoint (e.g., email address if you chose the Email protocol).
- Click on "Create subscription."



The screenshot shows the "Create subscription" page in the Amazon SNS console. The breadcrumb is "Amazon SNS > Subscriptions > Create subscription". The main heading is "Create subscription". Below this is a "Details" section with three input fields: "Topic ARN" (containing "arn:aws:sns:us-east-1:131407720762:eventlambda"), "Protocol" (a dropdown menu set to "Email"), and "Endpoint" (containing "test@example.com"). Below these fields is a light blue box with an information icon and the text: "After your subscription is created, you must confirm it. Info". At the bottom of the page, there is a section titled "Subscription filter policy - optional Info" with the subtext "This policy filters the messages that a subscriber receives."

STEP 10: Confirm the Subscription (if using Email):

- Check the email inbox of the address you provided.
- Confirm the subscription by clicking on the link in the email.



STEP 11: Send a Message to a Queue:

- In the left navigation pane, choose "Queues."
- Select the queue to which you want to send a message.
- Click on the "Send and receive messages" button.
- In the "Message body" section, enter the message you want to send.
- (Optional) You can add message attributes if needed.
- Click on "Send message."

STEP 12: Send a Message to SQS:

- Use the AWS Management Console or CLI to send a message to the SQS queue.

Amazon SQS > Queues > eventsqs > Send and receive messages

Send and receive messages

Send messages to and receive messages from a queue.

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.

```
{
  "email-id": "aravindrio@gmail.com",
  "name": "Aravind"
}
```

Delivery delay [Info](#)

0 Seconds

Should be between 0 seconds and 15 minutes.

▶ Message attributes - Optional [Info](#)

OUTPUT: Check DynamoDB:

- Verify that the message appears in your DynamoDB table.

logins

Select a table or index
Table - logins

Select attribute projection
All attributes

▶ Filters

Run Reset

✔ Completed. Read capacity units consumed: 0.5 ✕

Items returned (2) [Refresh](#) [Actions](#) [Create item](#)

< 1 > [Settings](#) [Full Screen](#)

<input type="checkbox"/>	email (String)	name
<input type="checkbox"/>	2116004@saec.ac.in	user1
<input type="checkbox"/>	aravindaravindrio7@g...	user2

OUTPUT: Check Email:


1. Verify that an email notification is sent to the subscribed email address.

By following these steps, you create a complete workflow where messages sent to an SQS queue are processed by a Lambda function, stored in DynamoDB, and trigger email notifications via SNS.

New Subscriber user1

External

Inbox x



AravindRio <no-reply@sns.amazonaws.com>
to me ▾

8:52 PM (9 minutes ago) ☆ ↶

New subscriber email: 2116004@saec.ac.in

--

If you wish to stop receiving notifications from this topic, please click or visit the link below to unsubscribe:
<https://sns.us-east-1.amazonaws.com/unsubscribe.html?SubscriptionArn=arn:aws:sns:us-east-1:131407720762:eventlambda.4fe0d0d2-6193-439b-92d5-5bd51b3817f8&Endpoint=2116004@saec.ac.in>

Please do not reply directly to this email. If you have any questions or comments regarding this email, please contact us at <https://aws.amazon.com/support>


← 📁 ⓘ 🗑️ | ✉️ ⓘ ↻ | 📧 📄 ⋮

1 of 2,055 < >

New Subscriber user2

External

Inbox x



AravindRio <no-reply@sns.amazonaws.com>
to me ▾

8:53 PM (8 minutes ago) ☆ ↶ ⋮

New subscriber email: aravindaravindrio7@gmail.com

--

If you wish to stop receiving notifications from this topic, please click or visit the link below to unsubscribe:
<https://sns.us-east-1.amazonaws.com/unsubscribe.html?SubscriptionArn=arn:aws:sns:us-east-1:131407720762:eventlambda.4fe0d0d2-6193-439b-92d5-5bd51b3817f8&Endpoint=2116004@saec.ac.in>

Please do not reply directly to this email. If you have any questions or comments regarding this email, please contact us at <https://aws.amazon.com/support>