

# CloudFormation Assignment — SQS FIFO Queue & SES

**Name: Vikram**

## Problem Statement:

You work for XYZ Corporation. Your team is asked to deploy similar architecture multiple times for testing, development, and production purposes. Implement CloudFormation for the tasks assigned to you below.

## Tasks To Be Performed:

1. Create a FIFO SQS queue and test by sending messages.
  2. Register your mail in SES and send a test mail to yourself.
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## Step-by-step Implementation (Detailed — follow exactly)

### Prerequisites

- An AWS account with permissions for CloudFormation, SQS, SES, and IAM (or have your instructor/admin grant these).
  - AWS Console access and familiarity with CloudFormation console.
  - Choose an AWS region where SES is supported for email sending (for sandbox accounts, us-east-1 is commonly used). SES verification emails are region-specific.
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## Step 1 — Create CloudFormation template file

Create a file named `sqs-fifo.yml` on your local machine and paste the following YAML template into it. This template creates a FIFO SQS queue and a FIFO dead-letter queue (DLQ).

AWS::TemplateFormatVersion: "2010-09-09"

Description: CloudFormation template to create a FIFO SQS queue and DLQ for XYZ Corporation.

#### Resources:

##### MyDeadLetterQueue:

Type: AWS::SQS::Queue

##### Properties:

QueueName: MyDeadLetterQueue.fifo

FifoQueue: true

ContentBasedDeduplication: true

##### MyFifoQueue:

Type: AWS::SQS::Queue

##### Properties:

QueueName: MyFifoQueue.fifo

FifoQueue: true

ContentBasedDeduplication: true

VisibilityTimeout: 30

MessageRetentionPeriod: 86400

DelaySeconds: 0

##### RedrivePolicy:

deadLetterTargetArn: !GetAtt MyDeadLetterQueue.Arn

maxReceiveCount: 5

#### Outputs:

##### QueueURL:

Description: "URL of the FIFO Queue"

Value: !Ref MyFifoQueue

##### QueueARN:

Description: "ARN of the FIFO Queue"

Value: !GetAtt MyFifoQueue.Arn

Save the file.

## Step 2 — Deploy the CloudFormation stack (Console method)

1. Sign in to the **AWS Management Console**.
2. Navigate to **CloudFormation** → **Stacks**.
3. Click **Create stack** → **With new resources (standard)**.
4. Under **Specify template**, choose **Upload a template file** and upload sqs-fifo.yml.
5. Click **Next**. For **Stack name**, enter: SQS-FIFO-Stack
6. Leave Parameters blank (none required). Click **Next** and accept default options.
7. On **Review** page, check the template and stack name, then click **Create stack**.
8. Wait until the stack status becomes **CREATE\_COMPLETE** (refresh if needed).

> [Stacks](#) > Create stack

You can also create a template by scanning your existing resources in the [IaC generator](#).

**Prepare template**  
Every stack is based on a template. A template is a JSON or YAML file that contains configuration information about the AWS resources you want to include in the stack.

☒ Choose an existing template  
Upload or choose an existing template.

☐ Build from Infrastructure Composer  
Create a template using a visual builder.

**Specify template** [Info](#)  
This [GitHub repository](#) contains sample CloudFormation templates that can help you get started on new infrastructure projects. [Learn more](#)

**Template source**  
Selecting a template generates an Amazon S3 URL where it will be stored. A template is a JSON or YAML file that describes your stack's resources and properties.

☐ Amazon S3 URL  
Provide an Amazon S3 URL to your template.

☒ Upload a template file  
Upload your template directly to the console.

☐ Sync from Git  
Sync a template from your Git repository.

**Upload a template file**

[Choose file](#)

AWSTemplateFormatVersion 2010-09-09.txt

JSON or YAML formatted file

S3 URL: <https://s3.us-east-1.amazonaws.com/cf-templates-1e04a1hyej8uf-us-east-1/2025-10-26T062155.630Zyj0-AWSTemplateFormatVersion2010-09-09.txt>

[View in Infrastructure Composer](#)

[CloudFormation](#) > [Stacks](#) > SQS-FIFO-Stack

**Introducing a new Control Catalogue integration for AWS CloudFormation Hooks**  
You can now create Hooks more easily by using proactive controls from the AWS Control Tower Control Catalogue and view your historical invocations. [Learn more about Hook invocations](#) and the [Control Catalogue](#).

[View invocation summary](#)

**Stacks (1)**

Filter status: Active

View nested

Stacks

SQS-FIFO-Stack  
2025-10-26 11:36:18 UTC+0530  
CREATE\_COMPLETE

**SQS-FIFO-Stack**

Delete Update stack Stack actions Create stack

Stack info Events Resources Outputs Parameters Template Changesets Git sync

**Overview**

Stack ID  
arn:aws:cloudformation:us-east-1:062250062838:stack/SQS-FIFO-Stack/e2ff9e30-b231-11f0-a340-0affe8120e97

Description  
CloudFormation template to create a FIFO SQS queue for XYZ Corporation.

Status  
CREATE\_COMPLETE

Detailed status  
-

Status reason  
-

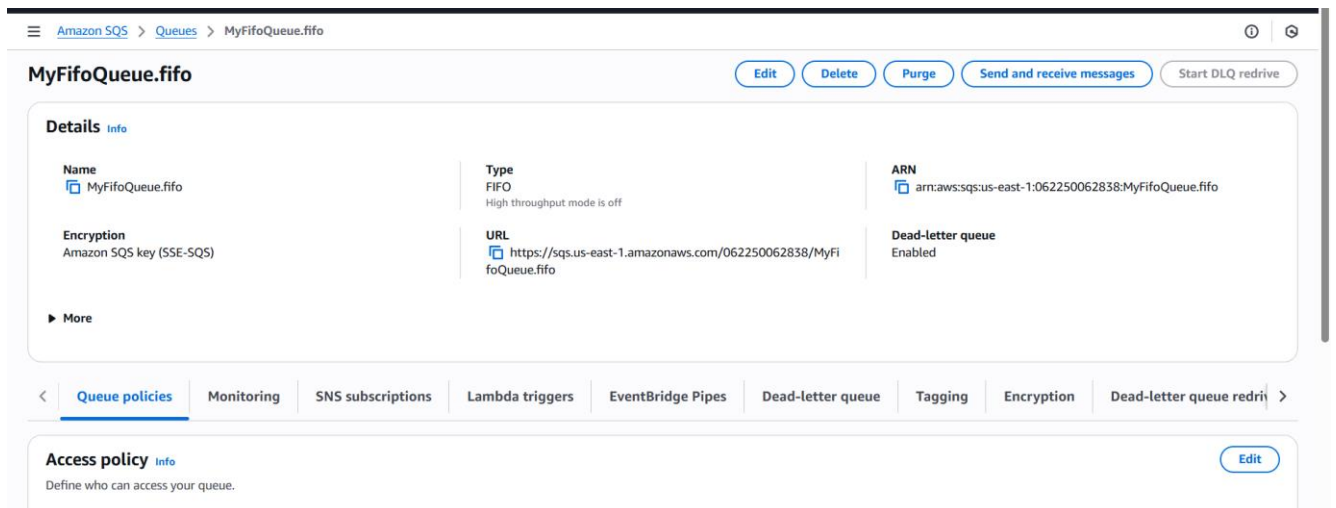
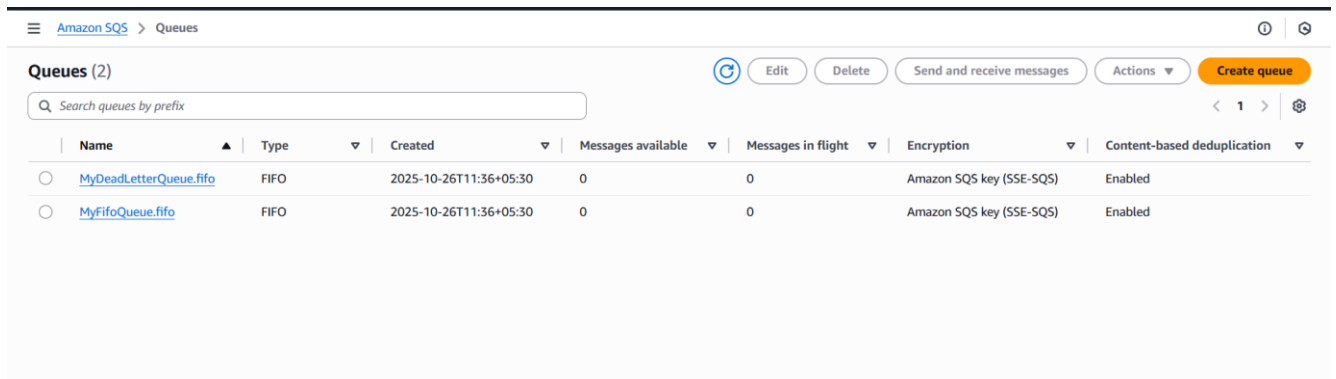
Root stack  
-

Parent stack  
-

Created time  
2025-10-26 11:36:18 UTC+0530

## Step 3 — Verify SQS FIFO queue created

1. In the AWS Console, go to **Amazon SQS** → **Queues**.
2. You should see MyFifoQueue.fifo and MyDeadLetterQueue.fifo listed.
3. Click MyFifoQueue.fifo to open it.



## Step 4 — Send a test message to the FIFO queue (Console)

1. In the queue details, click **Send and receive messages**.
2. Under **Send message**:
  - Message body: Hello from CloudFormation FIFO Queue!
  - Message group ID: group1 (*required for FIFO queues*)
  - Leave Message deduplication ID blank if ContentBasedDeduplication is enabled.
3. Click **Send message**.
4. Scroll down and click **Poll for messages** (or **Start polling for messages**) to receive messages.
5. Confirm you see the message with the same body.

Amazon SQS > Queues > MyFifoQueue.fifo > Send and receive messages

Send and receive messages

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

Send message

info

Message body

Enter the message to send to the queue.

Hello from CloudFormation FIFO Queue!

Message group ID

info

The tag that specifies that a message belongs to a specific FIFO message group.

group1

Message group ID must be 1 to 128 characters. Valid characters are a-z, A-Z, 0-9, and punctuation (!"#\$%&'()\*+,-./:;<=>?@[\\^\_`{|}~).

Message deduplication ID - optional

info

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

Message deduplication ID must be 1 to 128 characters. Valid characters are a-z, A-Z, 0-9, and punctuation (!"#\$%&'()\*+,-./:;<=>?@[\\^\_`{|}~).

▶ Message attributes - optional

info

Clear content

Send message

Clear content

Send message

Receive messages

info

Edit poll settings

Stop polling

⌂ Poll for messages

Messages available

1

Polling duration

30

Maximum message count

10

Polling progress

1 receives/second

13%

View details

Delete

Search messages

< 1 >

⚙

<input type="checkbox"/>	ID	Sent	Size	Receive count
<input type="checkbox"/>	d9e8fe27-cd1b-4ee5-a878-6e3036aea264	2025-10-26T11:39+05:30	37 bytes	1

Amazon SQS > Queues > MyFifoQueue.fifo > Send and receive messages

Received message: d9e8fe27-cd1b-4ee5-a878-6e3036aea264

Body

Attributes

Details

Hello from CloudFormation FIFO Queue!

Done

Clear content

Send message

Receive messages

info

Edit poll settings

Stop polling

⌂ Poll for messages

Messages available

1

Polling duration

30

Maximum message count

10

Polling progress

1 receives/second

43%

View details

Delete

Search messages

< 1 >

⚙

<input type="checkbox"/>	ID	Sent	Size	Receive count
<input type="checkbox"/>	d9e8fe27-cd1b-4ee5-a878-6e3036aea264	2025-10-26T11:39+05:30	37 bytes	1

## Step 5 — Register your email with Amazon SES and send a test mail

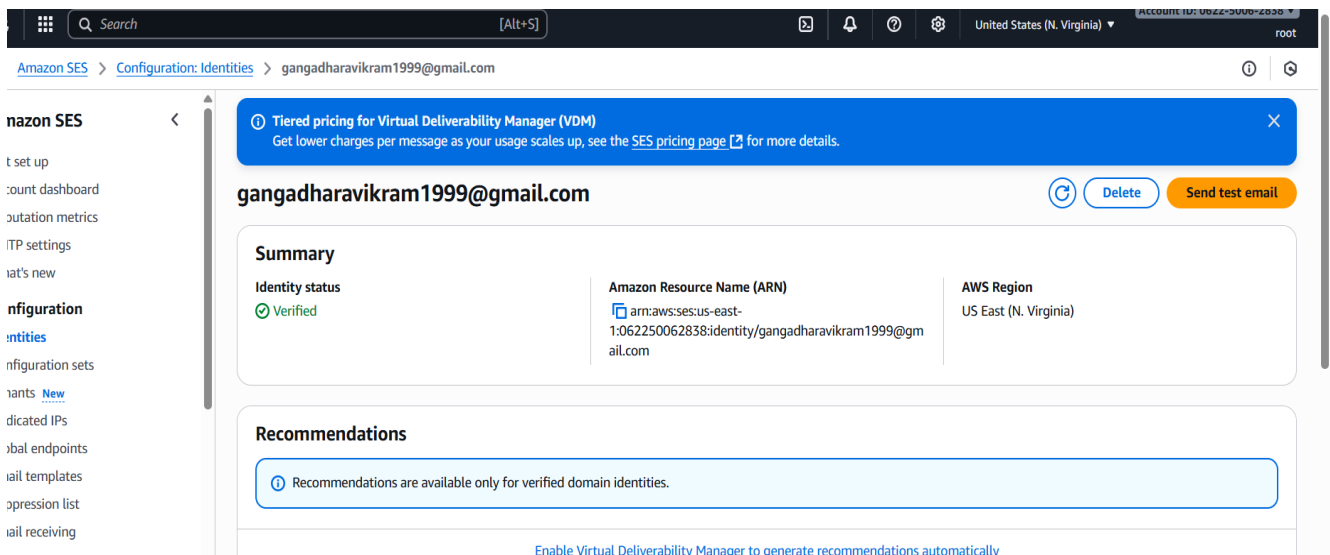
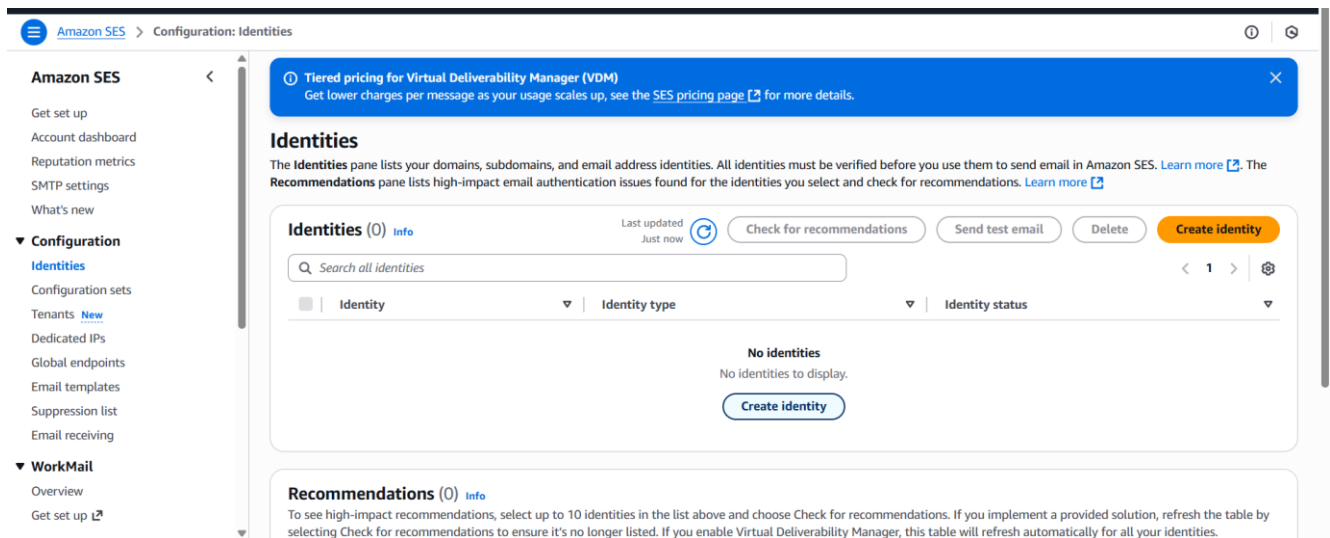
**Important:** If your SES account is in the **sandbox**, you can only send mail to verified addresses. Verify both the sender and recipient (you can use the same email for both).

### 5.1 Choose the SES Region

- In the AWS Console top-right, select a region where SES is available and you want to do verification (e.g., us-east-1).

### 5.2 Verify your email address

1. Go to **Amazon SES** → **Verified identities**.
2. Click **Create identity**.
3. Choose **Email address** and enter your email (e.g., vikram.your.email@example.com).
4. Click **Create identity**. SES will send a verification email to that address.
5. Open your email inbox and click the verification link in the SES email.
6. Back in SES console, the status should change to **Verified**.
- 7.



## 5.3 Send a test email using SES Console

1. In SES console, go to **Email Sending** → **Create email** or **Send email** (Console UI differs slightly by region/version).
2. Choose **Send a custom email**.
3. From: your verified email address.
4. To: your verified email address (for testing).
5. Subject: Test Email from SES - Vikram.
6. Body (text or HTML): Hello Vikram, this is a test email sent using Amazon SES. Sent as part of CloudFormation assignment.
7. Send the email and confirm receipt in your inbox.

Amazon SES > Configuration: Identities > gangadharavikram1999@gmail.com > Send test email

Tiered pricing for Virtual Deliverability Manager (VDM)  
Get lower charges per message as your usage scales up, see the [SES pricing page](#) for more details.

### Send test email

The Amazon SES mailbox simulator lets you test how your application handles different email sending scenarios. Emails that you send to the mailbox simulator do not count towards your sending quota or your bounce and complaint rates. [Learn more](#)

Message details

Email format

☒ Formatted

Choose this option if you want to construct a simple test message using the form provided. SES takes the information entered in the form and parses it into email format for you.

☐ Raw

Choose this option if you want to send a more complex test message, such as one that uses HTML or includes attachments. This option requires you to format the entire message yourself.

From-address

gangadharavikram1999@gmail.com

Scenario

Choose the email sending scenario that you want to simulate. Each scenario corresponds to a different recipient email address managed by the mailbox simulator. To specify a custom recipient, select Custom.

Custom

Use a recipient address of your own

entered in the form and parses it into email format for you.

attachments. This option requires you to format the entire message yourself.

From-address

gangadharavikram1999@gmail.com

Scenario

Choose the email sending scenario that you want to simulate. Each scenario corresponds to a different recipient email address managed by the mailbox simulator. To specify a custom recipient, select Custom.

Custom

Use a recipient address of your own

Custom recipient

While your account is in the Amazon SES sandbox, you can only send test emails to other verified identities. If you've verified an identity at the domain level, you can send a test email to any email address under that verified domain.

gangadharavikram1999@gmail.com

Subject

Test Email from SES

Body - optional

Hello Vikram, this is a test email sent using AWS SES.

Configuration set - optional

Test Email from SES

Spam x

gangadharavikram1999@gmail.com via amazonses.com to me

11:48 (0 minutes ago)

Why is this message in spam? This message is similar to messages that were identified as spam in the past.

Report as not spam

Hello Vikram, this is a test email sent using AWS SES.

Reply Forward