

# CloudFormation Assignment — SQS FIFO Queue & SES

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## 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).

`AWSTemplateFormatVersion: "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.

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## 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).
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The screenshot shows the 'Create stack' wizard in the AWS CloudFormation console. In the 'Specify template' step, the 'Upload a template file' option is selected. A file named 'AWSTemplateFormatVersion 2010-09-09.txt' is uploaded. Other options like 'Choose an existing template' and 'Build from Infrastructure Composer' are also shown.

The screenshot shows the 'Stacks' page in the AWS CloudFormation console. The 'SQS-FIFO-Stack' is listed with a status of 'CREATE\_COMPLETE'. The 'Overview' section shows the stack ID and a description: 'CloudFormation template to create a FIFO SQS queue for XYZ Corporation.'

## 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.

The screenshot shows the AWS SQS Queues page with the following details:

Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
MyDeadLetterQueue.fifo	FIFO	2025-10-26T11:36+05:30	0	0	Amazon SQS key (SSE-SQS)	Enabled
MyFifoQueue.fifo	FIFO	2025-10-26T11:36+05:30	0	0	Amazon SQS key (SSE-SQS)	Enabled

The screenshot shows the AWS SQS Queue Details page for **MyFifoQueue.fifo** with the following details:

Name	Type	ARN
MyFifoQueue.fifo	FIFO High throughput mode is off	arn:aws:sqs:us-east-1:062250062838:MyFifoQueue.fifo

Other visible tabs include **Queue policies**, **Monitoring**, **SNS subscriptions**, **Lambda triggers**, **EventBridge Pipes**, **Dead-letter queue**, **Tagging**, **Encryption**, and **Dead-letter queue redri**.

## 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.

## 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

 C Poll for messages

Messages available

1

Polling duration

30

Maximum message count

10

Polling progress

1 receives/second

13%

#### Messages (1)

 Search messages

ID

Sent

▲

Size

▼

Receive count

▼

d9e8fe27-cd1b-4ee5-a878-6e3036aea264

2025-10-26T11:39:05.30

37 bytes

1

View details  Delete

< 1 >

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

### Receive messages Info

 Stop polling

 C Poll for messages

Messages available

1

#### Messages (1)

 Search messages

ID

Sent

▲

Size

▼

Receive count

▼

d9e8fe27-cd1b-4ee5-a878-6e3036aea264

2025-10-26T11:39:05.30

37 bytes

1

Done

View details

< 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

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

7.

The screenshot shows the 'Identities' section of the Amazon SES configuration. A blue header bar at the top contains a message about 'Tiered pricing for Virtual Deliverability Manager (VDM)' and a link to the 'SES pricing page'. Below this, the 'Identities' section has a sub-header 'Identities (0) Info'. It includes a search bar, a 'Check for recommendations' button, and buttons for 'Send test email', 'Delete', and 'Create identity'. A table below shows one row with columns for 'Identity' and 'Identity type', both currently empty. A large button labeled 'Create identity' is visible. At the bottom, there's a 'Recommendations (0) Info' section with a note about selecting identities for recommendations.

The screenshot shows the 'Identities' section for a specific email address, 'gangadharavikram1999@gmail.com'. The top header bar is identical to the previous screenshot. The main content area shows a summary for the email address, indicating it is 'Verified'. It displays the 'Amazon Resource Name (ARN)' as 'arn:aws:ses:us-east-1:062250062838:identity/gangadharavikram1999@gmail.com' and the 'AWS Region' as 'US East (N. Virginia)'. Below this, a 'Recommendations' section states that recommendations are available only for verified domain identities. A link at the bottom right says 'Enable Virtual Deliverability Manager to generate recommendations automatically'.

## 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.

The screenshot shows the 'Send test email' configuration page in the AWS SES console. At the top, there's a blue header bar with a message about tiered pricing for Virtual Deliverability Manager (VDM). Below it, the main form is divided into sections: 'Message details', 'From-address', 'Scenario', 'Custom recipient', 'Subject', 'Body - optional', and 'Configuration set - optional'. Each section contains input fields and dropdown menus. At the bottom, there's a preview of the email message with a 'Report as not spam' button and some social sharing icons.

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** Info

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** Info  
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** Info  
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 ×

gangadharavikram1999@gmail.com via [amazoneses.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