

## Messages Queues

- Message queues allow different parts of a system to communicate and process operations asynchronously. A message queue provides a lightweight buffer which temporarily stores messages, and endpoints that allow software components to connect to the queue in order to send and receive messages.
- The messages are usually small, and can be things like request, replies, error messages, or just plain information. To send a message, a component called a producer adds a message to the queue.
- The message is stored on the queue until another component called a consumer retrieves the message and does something with it.
- Amazon SQS is a reliable, highly-scalable hosted queue for storing messages as they travel between applications or microservices. Amazon SQS moves data between distributed application components and helps you decouple these applications.

## SQS

- Amazon SQS is a fully managed **message queuing service** that makes it easy to decouple and scale microservices, distributed systems, and serverless applications. Building applications from individual components that each perform a discrete function improves scalability and reliability, and is best practice design for modern applications.
- SQS makes it simple and cost-effective to decouple and co-ordinate the components of a cloud application.
- Using SQS, you can send, store and receive messages between software components at any volume, without losing messages or requiring other services to be always available.
- It is a Pull-Based based ( for certification exam)
- There are thing involved such as encryption, security, scalability, ease of integration and operational efficiency as well with SQS service.

There are 2 types of Queues

- 1) SQS Standard - It offers maximum throughput, best-effort ordering, and at-least-once delivery.
  - 2) SQS FIFO - It is designed to guarantee that messages are processed exactly once, in the exact order that they are sent, with limited throughput.
- You can get started with SQS in a matter of minutes using the AWS console or SDK of your choice and just three simple commands.
  - SQS lets you eliminate the complexity and overhead associated with managing and operating dedicated messaging software and infrastructure.

LAB :

Login to console



Click on SQS then click on get started

You will see the below Screen

Create New Queue

What do you want to name your queue?

Queue Name ⓘ

Type the queue name.

Region ⓘ US East (Ohio)

What type of queue do you need?

Standard Queue

**Unlimited Throughput:** Standard queues support a nearly unlimited number of transactions per second (TPS) per API action.

**At-Least-Once Delivery:** A message is delivered at least once, but occasionally more than one copy of a message is delivered.

**Best-Effort Ordering:** Occasionally, messages might be delivered in an order different from which they were sent.

Send data between applications when the throughput is important, for example:

- Decouple live user requests from intensive background work: let users upload media while resizing or encoding it.
- Allocate tasks to multiple worker nodes: process a high number of credit card validation requests.
- Batch messages for future processing: schedule multiple entries to be added to a database.

FIFO Queue

**High Throughput:** FIFO queues support up to 300 messages per second (300 send, receive, or delete operations per second). When you batch 10 messages per operation (maximum), FIFO queues can support up to 3,000 messages per second. To request a limit increase, file a support request.

**First-In-First-out Delivery:** The order in which messages are sent and received is strictly preserved.

**Exactly-Once Processing:** A message is delivered once and remains available until a consumer processes and deletes it. Duplicates are not introduced into the queue.

Send data between applications when the order of events is important, for example:

- Ensure that user-entered commands are executed in the right order.
- Display the correct product price by sending price modifications in the right order.
- Prevent a student from enrolling in a course before registering for an account.

For more information, see the [Amazon SQS FAQs](#) and the [Amazon SQS Developer Guide](#).

To create a new queue, choose Quick>Create Queue. To configure your queue's parameters, choose Configure Queue.

## Create New Queue

### What do you want to name your queue?

**Queue Name** ⓘ  ✓

**Region** ⓘ Asia Pacific (Mumbai)

For more information, see the [Amazon SQS FAQs](#) and the [Amazon SQS Developer Guide](#).

You can change these default parameters.

Queue Attributes

**Default Visibility Timeout** ⓘ  seconds Value must be between 0 seconds and 12 hours.

**Message Retention Period** ⓘ  days Value must be between 1 minute and 14 days.

**Maximum Message Size** ⓘ  KB Value must be between 1 and 256 KB.

**Delivery Delay** ⓘ  seconds Value must be between 0 seconds and 15 minutes.

**Receive Message Wait Time** ⓘ  seconds Value must be between 0 and 20 seconds.

Dead Letter Queue Settings

**Use Redrive Policy** ⓘ ☐

**Dead Letter Queue** ⓘ  Value must be an existing queue name.

**Maximum Receives** ⓘ  Value must be between 1 and 1000.

Cancel **Create Queue** ✓

## Select the Queue and see Actions

**Create New Queue** **Queue Actions** ✓

Filter by Prefix:

| <input type="checkbox"/> Name              | Messages Available | Messages in Flight |
|--|--------------------|--------------------|
| <input checked="" type="checkbox"/> orders | 0                  | 0                  |

- Send a Message
- View/Delete Messages
- Configure Queue
- Add a Permission
- Purge Queue
- Delete Queue
- Subscribe Queue to SNS Topic

1 SQS Queue selected

**Details** | Permissions | Redrive Policy | Monitoring | Tags

**Name:** orders

**URL:** https://sqs.ap-south-1.amazonaws.com/609875419534/orders

**ARN:** arn:aws:sqs:ap-south-1:609875419534:orders

**Created:** 2018-03-23 23:46:46 GMT-04:00

**Last Updated:** 2018-03-23 23:46:46 GMT-04:00

**Delivery Delay:** 0 seconds

**Messages Delayed:** 0

**Default Visibility Timeout:** 30 seconds

**Message Retention Period:** 4 days

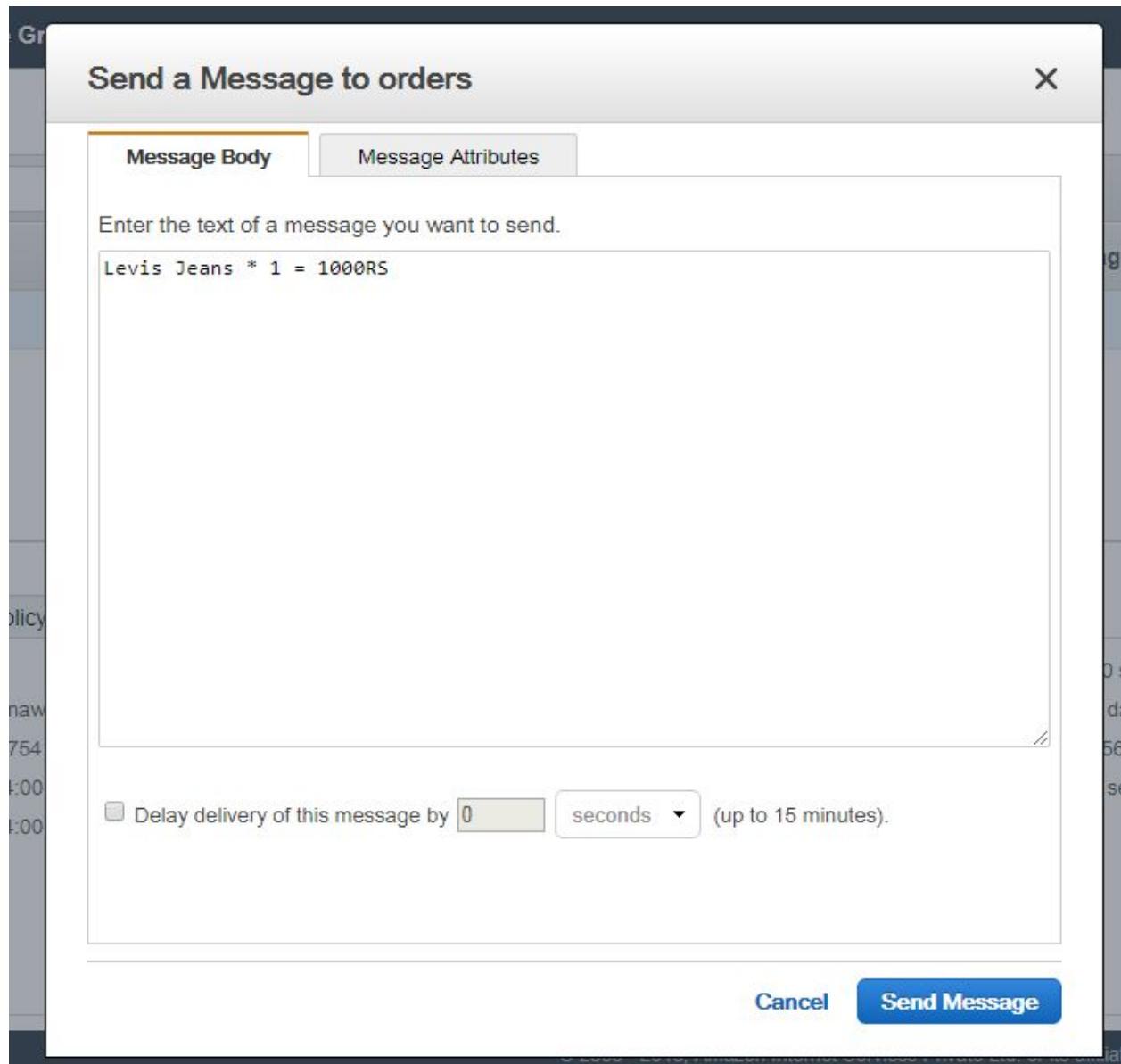
**Maximum Message Size:** 256 KB

**Receive Message Wait Time:** 0 seconds

**Messages Available (Visible):** 0

**Messages in Flight (Not Visible):** 0

So for practice , click on Send messages



The screenshot shows a dialog box titled "Send a Message to orders" with a close button (X) in the top right corner. The dialog has two tabs: "Message Body" (selected) and "Message Attributes".

Under the "Message Body" tab, there is a text input area with the placeholder text "Enter the text of a message you want to send." The input area contains the text "Levis Jeans \* 1 = 1000RS".

Below the input area, there is a checkbox labeled "Delay delivery of this message by" followed by a numeric input field containing "0", a dropdown menu showing "seconds", and the text "(up to 15 minutes)".

At the bottom right of the dialog, there are two buttons: "Cancel" and "Send Message".

You can define the metadata of the message in Message attributes

## Send a Message to orders



Message Body

Message Attributes

Name

Order Type ✓

Type

String ▼

(Custom Type: Optional)

Value

Online ✓

Enter a string value.

Add Attribute

[What is Message Attribute?](#)

Name

Type

Values

Cancel

Send Message

Send a Message to orders

X

Message Body

Message Attributes

Enter the text of a message you want to send.

Levis Jeans \* 1 = 1000RS

☐ Delay delivery of this message by  seconds (up to 15 minutes).

Cancel

Send Message

Now we are done with below message

Send a Message to orders

×

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

Note: It may take up to 60 seconds for the *Messages Available* column to update.

**Sent Message Attributes:**

**Message Identifier:** f3eda2f5-64b8-4ee7-990f-03f777ccf8f6

**MD5 of Body:** 1b74d659d8e6747e7efca30dfcb0075e

You can even see the main console of SQS that we have one message

Create New Queue

Queue Actions

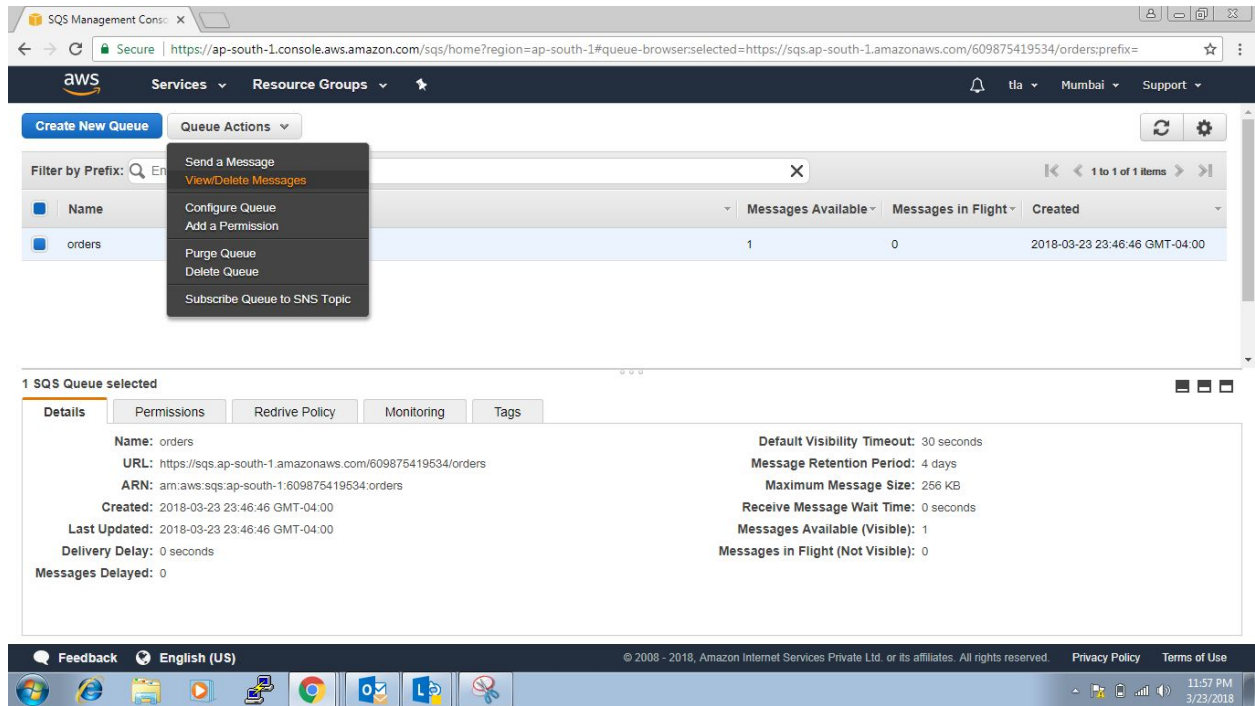
Filter by Prefix: Enter Text...

×

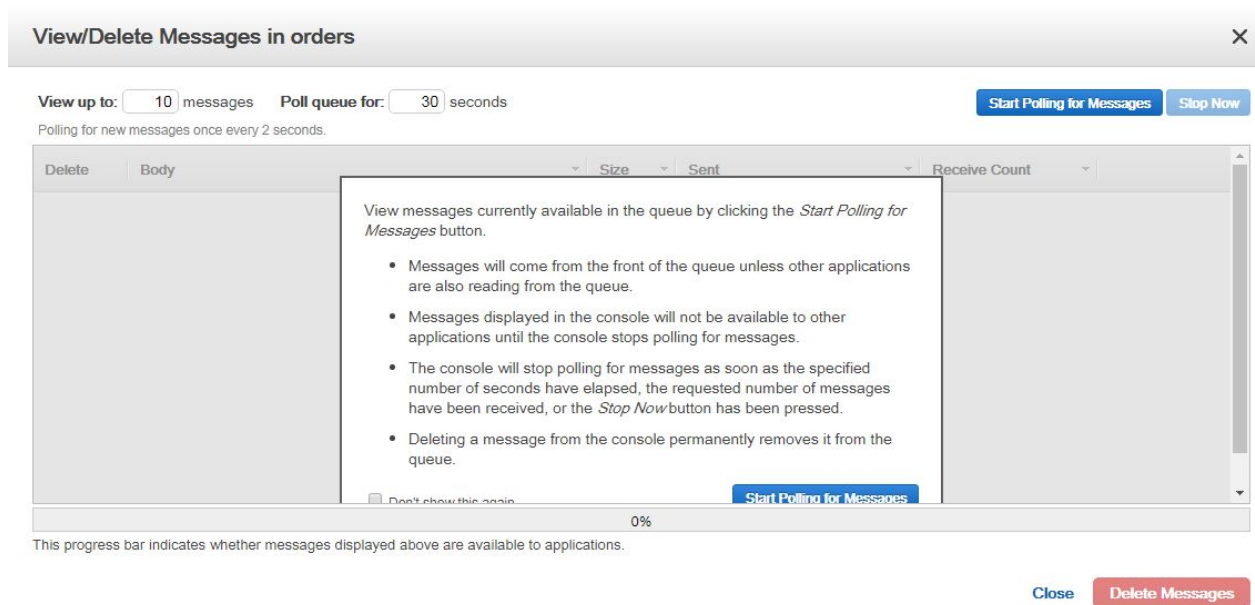
| <input checked="" type="checkbox"/> | Name   | Messages Available | Messages in Flight | Cr |
|-------------------------------------|--------|--------------------|--------------------|----|
| <input checked="" type="checkbox"/> | orders | 1                  | 0                  | 20 |

Now lets see how we can consume it

Go to Queue Actions - > View/ Delete Messages



You will get below screen



Click on **Start Polling for Messages**



View/Delete Messages in orders

View up to: 10 messages

Poll queue for: 30 seconds

Polling for Messages...

Stop Now

Polling for new messages once every 2 seconds.

| Delete                              | Body                     | Size     | Sent                          | Receive Count |                              |
|-------------------------------------|--------------------------|----------|-------------------------------|---------------|------------------------------|
| <input checked="" type="checkbox"/> | Levis Jeans * 1 = 1000RS | 24 bytes | 2018-03-23 23:54:34 GMT-04:00 | 1             | <a href="#">More Details</a> |

20%

Polling the queue at 0.6 receives/second. Stopping in 23.8 seconds. Messages shown above are currently hidden from other consumers.

Close

Delete Messages

View/Delete Messages in orders

View up to: 10 messages

Poll queue for: 30 seconds

Start Polling for Messages

Stop Now

Polling for new messages once every 2 seconds.

| Delete                   | Body                     | Size     | Sent                          | Receive Count |                              |
|--------------------------|--------------------------|----------|-------------------------------|---------------|------------------------------|
| <input type="checkbox"/> | Levis Jeans * 1 = 1000RS | 24 bytes | 2018-03-23 23:54:34 GMT-04:00 | 1             | <a href="#">More Details</a> |

100%

Stopped after polling the queue at 0.5 receives/second for 30.4 seconds. Messages shown above are now available to other consumers.

Close

Delete Messages

Once you are done, please delete the message

View/Delete Messages in orders

View up to: 10 messages

Poll queue for: 30 seconds

Start Polling for Messages

Stop Now

Polling for new messages once every 2 seconds.

| Delete                              | Body                     | Size     | Sent                          | Receive Count |                              |
|-------------------------------------|--------------------------|----------|-------------------------------|---------------|------------------------------|
| <input checked="" type="checkbox"/> | Levis Jeans * 1 = 1000RS | 24 bytes | 2018-03-23 23:54:34 GMT-04:00 | 1             | <a href="#">More Details</a> |

100%

Stopped after polling the queue at 0.5 receives/second for 30.4 seconds. Messages shown above are now available to other consumers.

Close

Delete 1 Message

Also delete the Queue

SQS Management Console

Secure | https://ap-south-1.console.aws.amazon.com/sqs/home?region=ap-south-1#queue-browserselected=https://sqs.ap-south-1.amazonaws.com/609875419534/orders:prefix=

Services

Resource Groups

Support

Create New Queue

Queue Actions

Filter by Prefix: orders

Send a Message

View/Delete Messages

Configure Queue

Add a Permission

Purge Queue

Delete Queue

Subscribe Queue to SNS Topic

| Name   | Messages Available | Messages in Flight | Created                       |
|--------|--------------------|--------------------|-------------------------------|
| orders | 0                  | 0                  | 2018-03-23 23:46:46 GMT-04:00 |

1 SQS Queue selected

Details

Permissions

Redrive Policy

Monitoring

Tags

Name: orders

URL: https://sqs.ap-south-1.amazonaws.com/609875419534/orders

ARN: arn:aws:sqs:ap-south-1:609875419534:orders

Created: 2018-03-23 23:46:46 GMT-04:00

Last Updated: 2018-03-23 23:46:46 GMT-04:00

Delivery Delay: 0 seconds

Messages Delayed: 0

Default Visibility Timeout: 30 seconds

Message Retention Period: 4 days

Maximum Message Size: 256 KB

Receive Message Wait Time: 0 seconds

Messages Available (Visible): 0

Messages in Flight (Not Visible): 0

Feedback

English (US)

© 2008 - 2018, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

12:02 AM

3/24/2018