BATCH : 149
LESSON : AWS
DATE : 12.09.2023
SUBJECT : AWS SNS & SQS
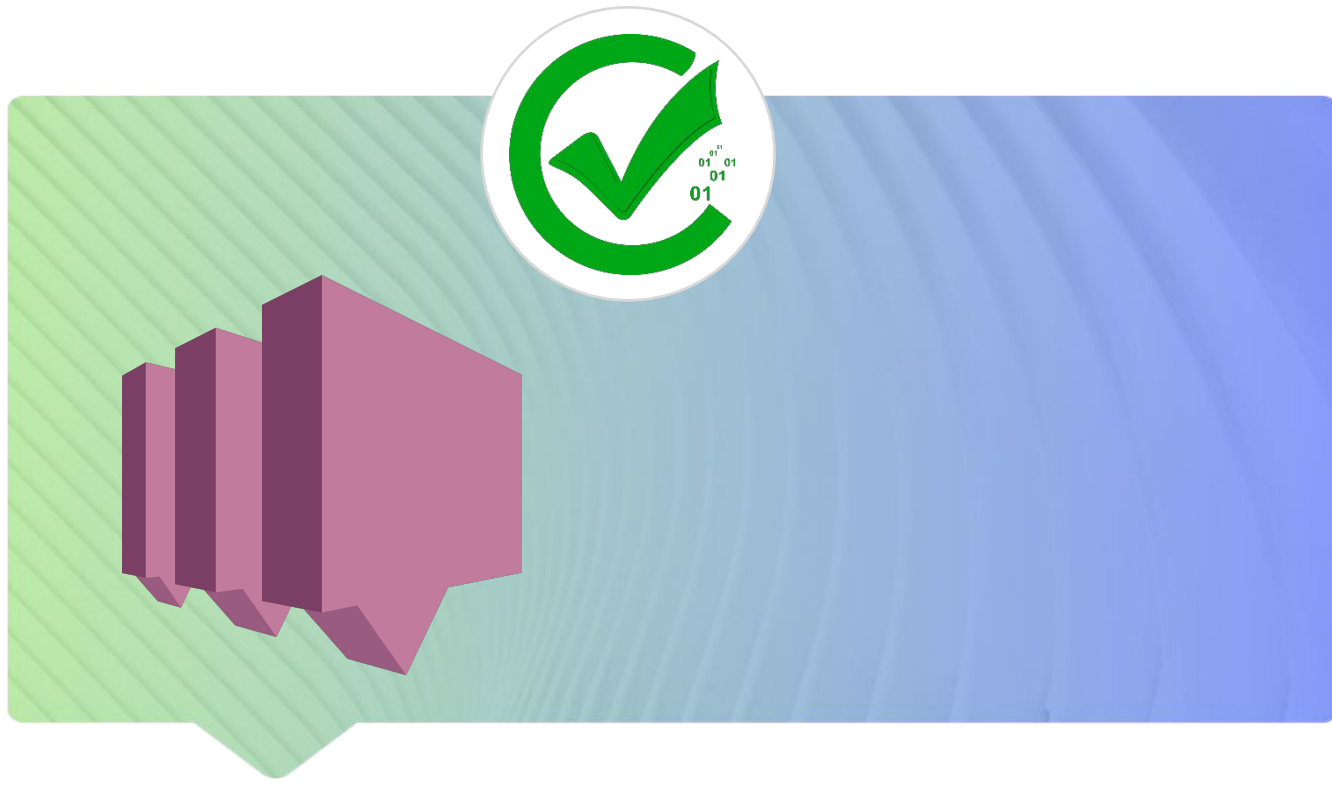
AWS SNS

Communication and App Integration

1) Synchronous communications
(application to application)

2) Asynchronous / Event based
(application to queue to application)

Buying Service ←→ Shipping Service

Buying Service → Queue → Shipping Service

What is Amazon SNS ?

- Amazon Simple Notification Service (Amazon SNS) is a managed service that provides message delivery from publishers to subscribers (also known as *producers* and *consumers*).

- Publishers communicate asynchronously with subscribers by sending messages to a *topic*, which is a logical access point and communication channel.

- Clients can subscribe to the SNS topic and receive published messages using a supported endpoint type, such as Amazon Kinesis Data Firehose, Amazon SQS, AWS Lambda, HTTP, email, mobile push notifications, and mobile text messages (SMS).
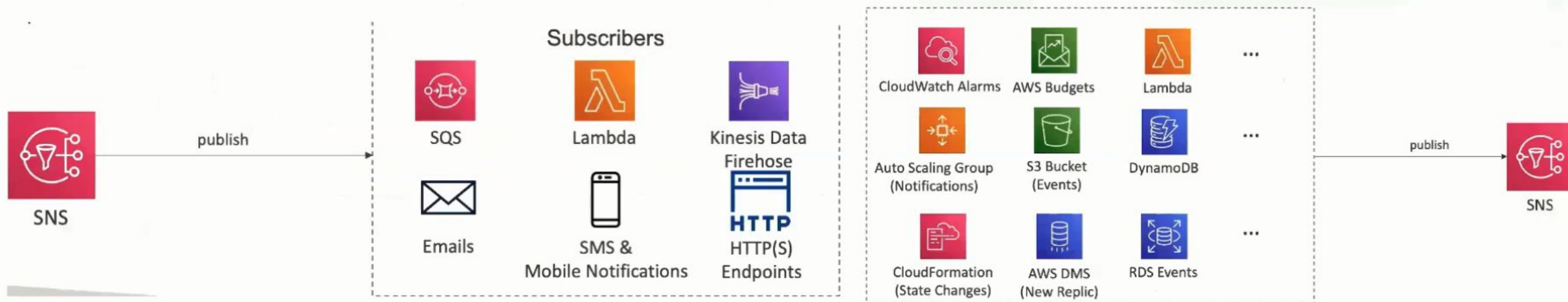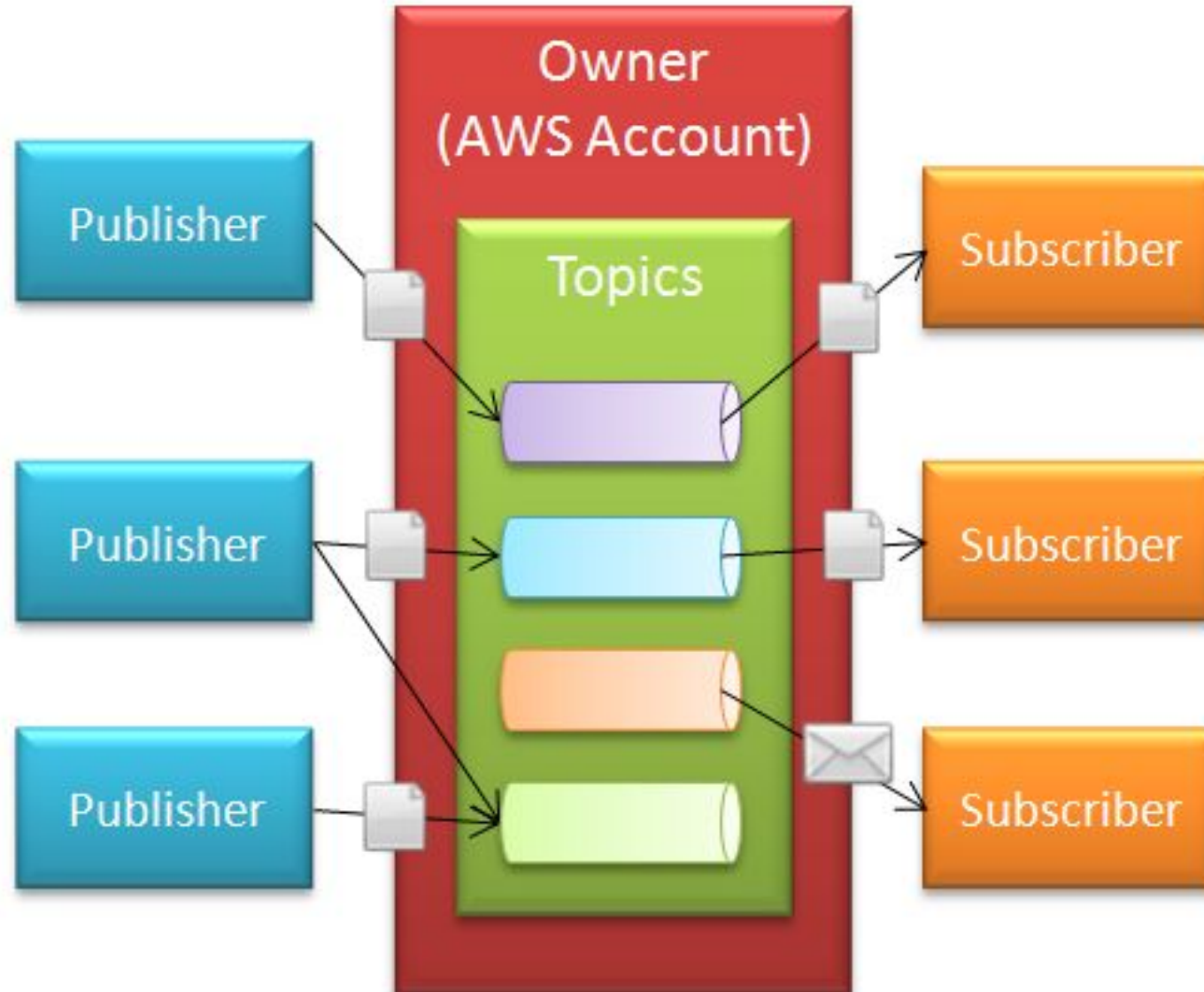
- SNS is push-based.
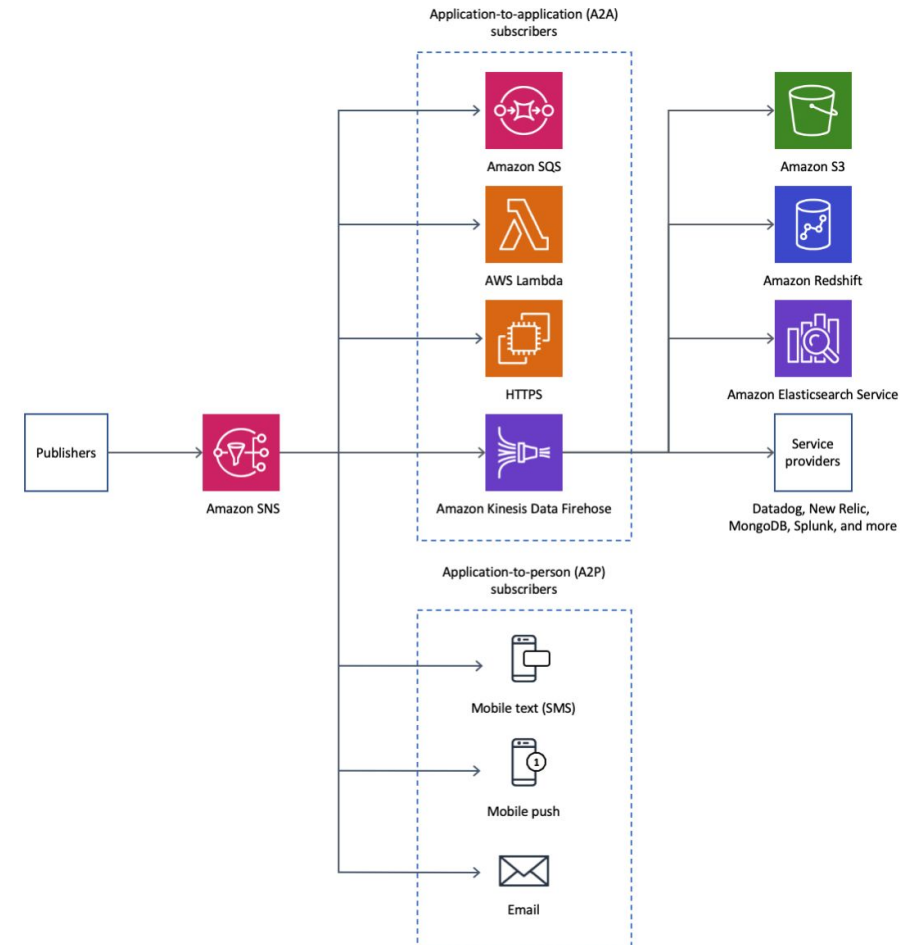
What is Amazon SNS ?

- There can be 12.500.000 subscriptions per topic
- 100.000 topics as limit
- SNS can publish to subscribers as AWS services
- AWS services can send data directly to SNS notifications
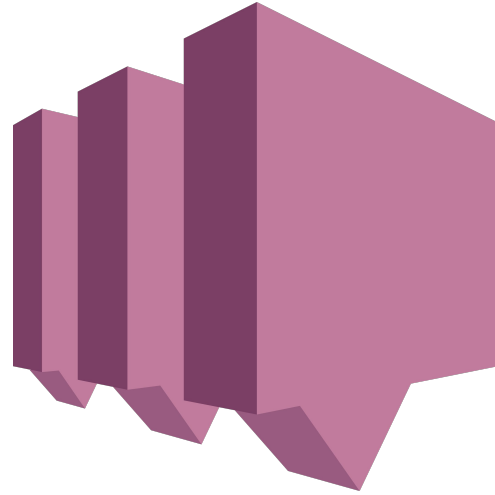- Use SNS Policies to allow other AWS services to send message to a topic

What is Amazon SNS ?

Pricing of Amazon SNS ?

- Amazon SNS has no upfront costs. You pay based on the number of messages that you publish, the number of notifications that you deliver, and any additional API calls for managing topics and subscriptions. Delivery pricing varies by endpoint type. You can get started for free with the Amazon SNS free tier.
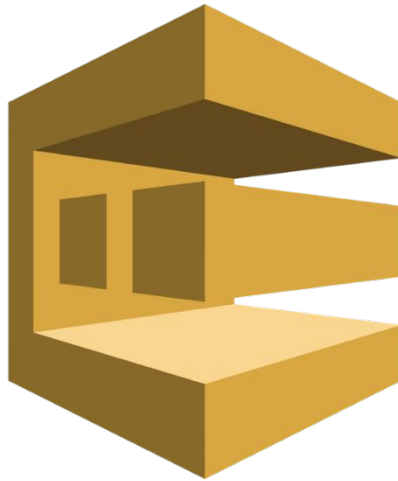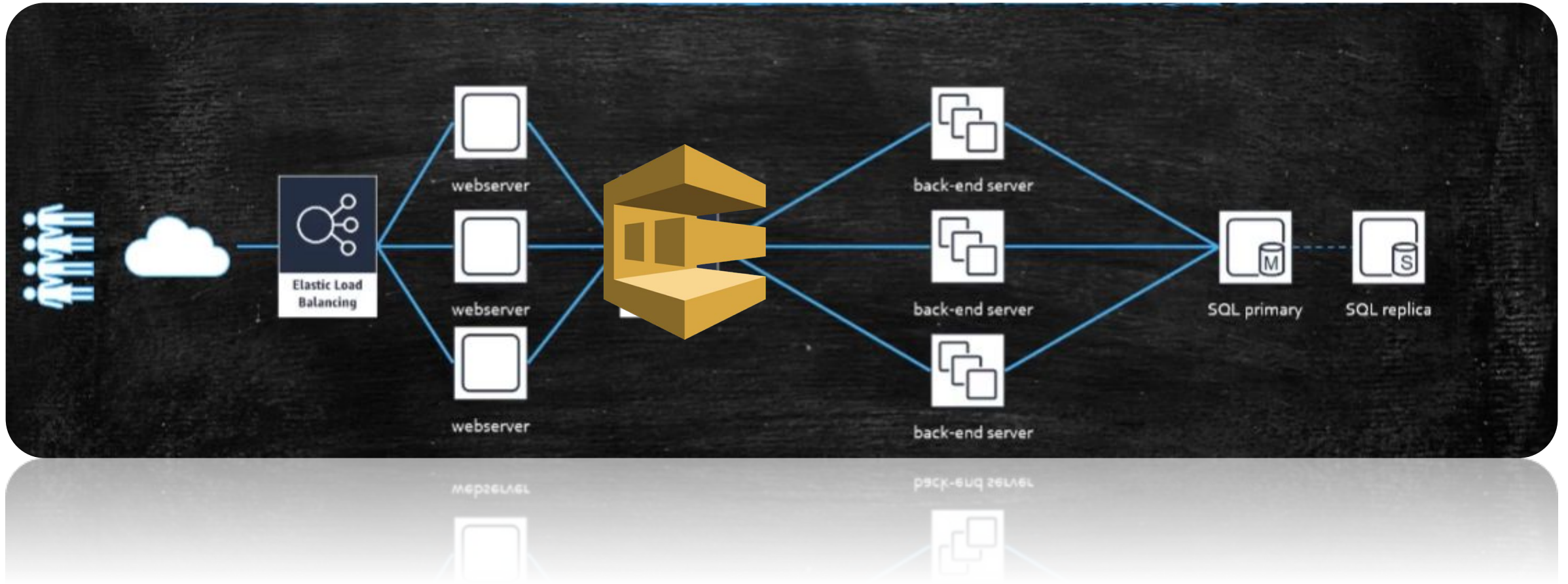
AWS SQS

What is Amazon Simple Queue Service?

- Enables web service applications to quickly and reliably queue messages that one component in the application generates for another component to consume.

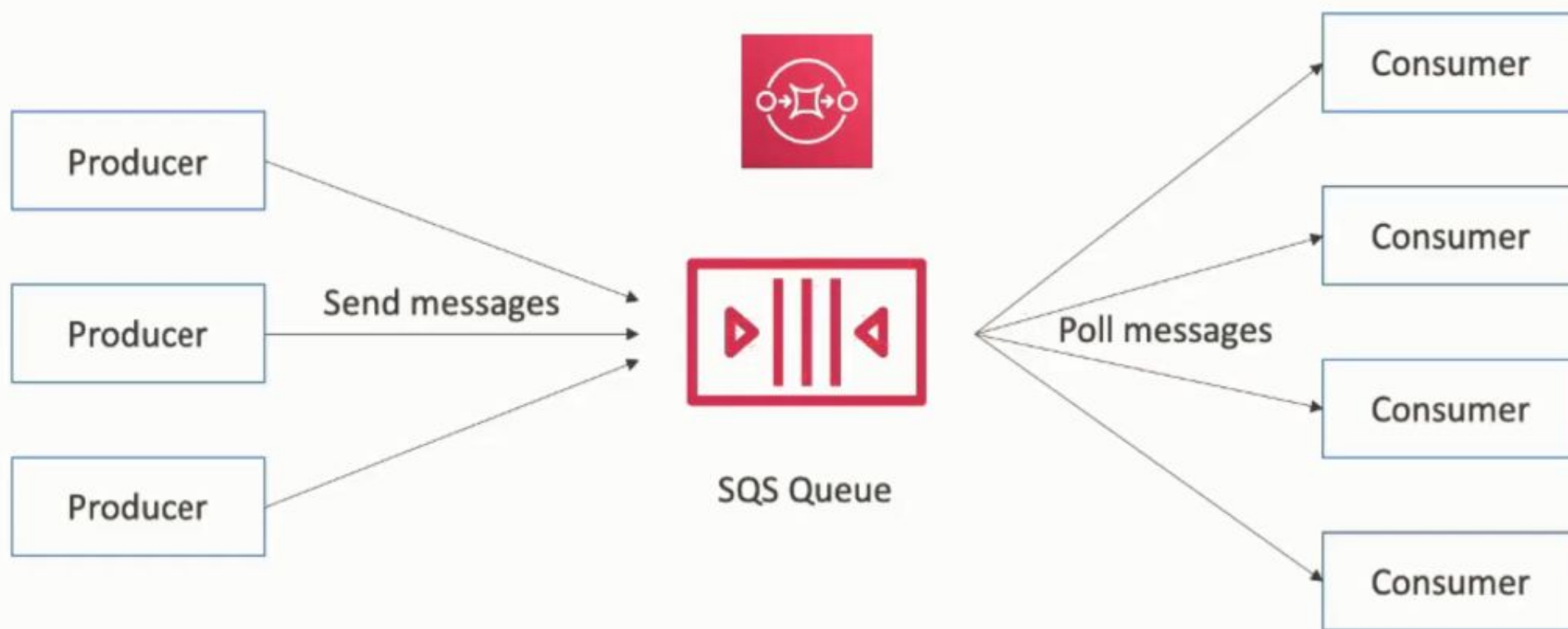- A queue is a temporary repository for messages awaiting processing.

What is Amazon Simple Queue Service?

Features of Simple Queue Service?

Features of Simple Queue Service?

- Decouple Application Components
  - Decouple the components of an application so they run independently, easing message management between components.

- Store Messages
  - Any component of a distributed application can store messages in the queue. Messages can contain up to 256 KB of text in any format.
  - Messages remain until a consumer deletes it.
  - Messages retain from 4 to 14 days.

- Pull-based

- SQS Policies allow other AWS services to send messages to SQS.

- Retrieve Messages
  - Any component can later retrieve the messages programmatically using the Amazon SQS API.

What is Amazon Simple Queue Service?

- Amazon Simple Queue Service (Amazon SQS) offers a secure, durable, and available hosted queue that lets you integrate and decouple distributed software systems and components.
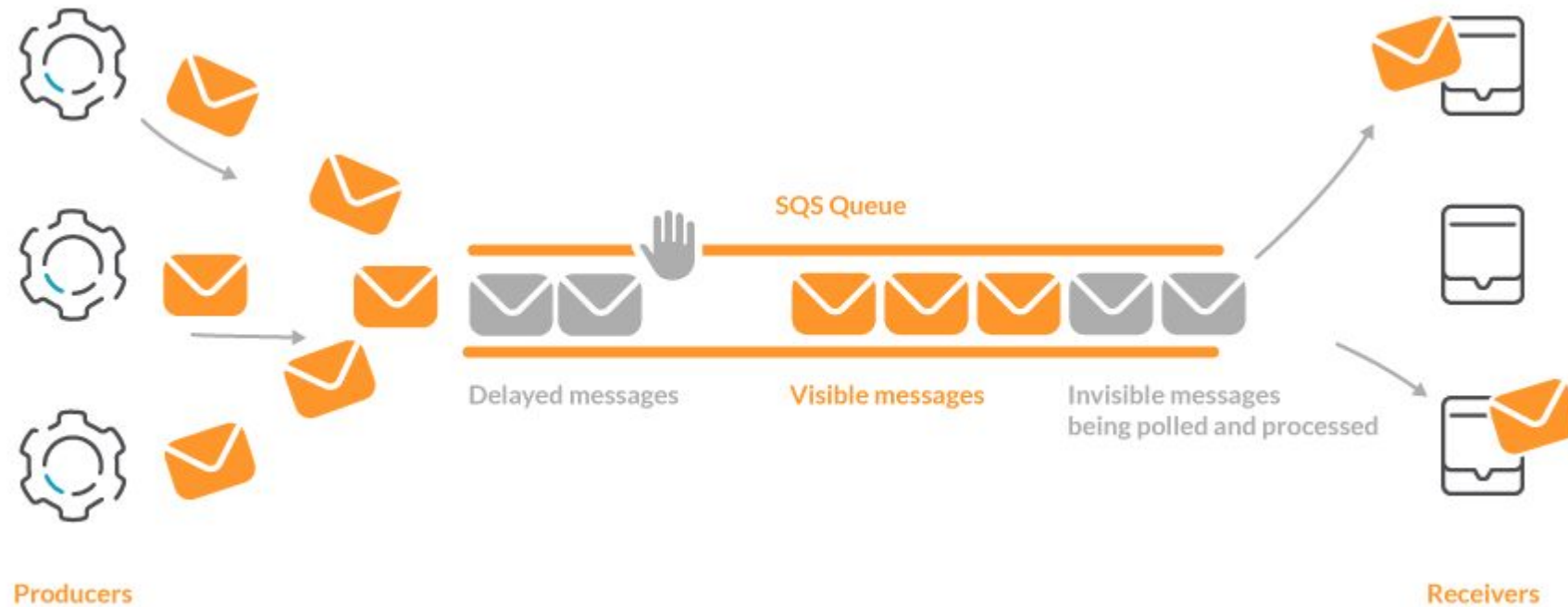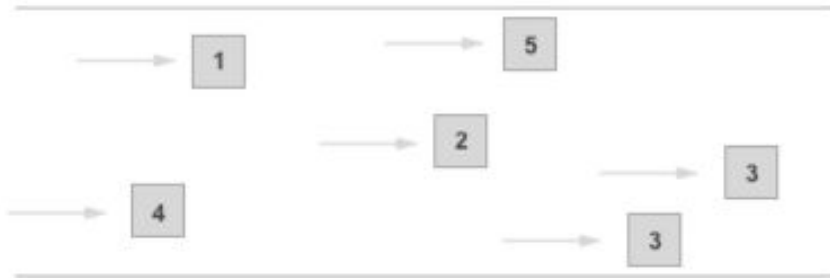
What is Amazon SQS ?

Standard Queue

High Throughput: Standard queues have nearly-unlimited transactions per second (TPS).

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

Best-Effort Ordering: Occasionally, messages are 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

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

Exactly-Once Processing: A message is guaranteed to be delivered at least once, but all duplicates of the message are removed.

Limited Throughput: 300 transactions per second (TPS).

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.

Pricing for Amazon SQS ?

- Amazon SQS has no upfront costs. The first million monthly requests are free. After that, you pay based on the number and content of requests, and the interactions with Amazon S3 and the AWS Key Management Service.

Amazon SQS pricing

- Pay only for what you use

- No minimum fee

Amazon SQS Free Tier*

You can get started with Amazon SQS for free. All customers can make 1 million Amazon SQS requests for free each month. Some applications might be able to operate within this Free Tier limit.
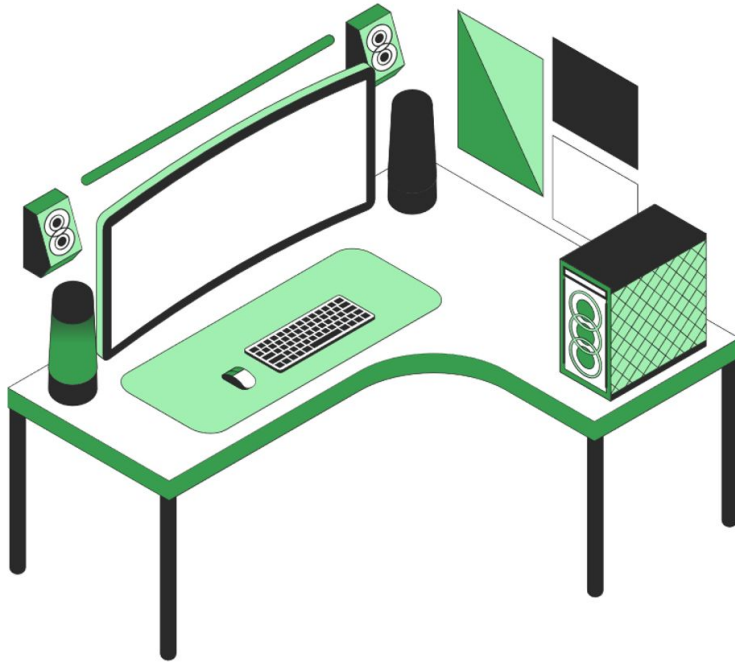
Do you have any questions?

Send it to us! We hope you learned something new.