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DT/NT : NT

LESSON : AWS

SUBJECT: AWS SNS-SQS

BATCH : B 303

AWS-DEVOPS



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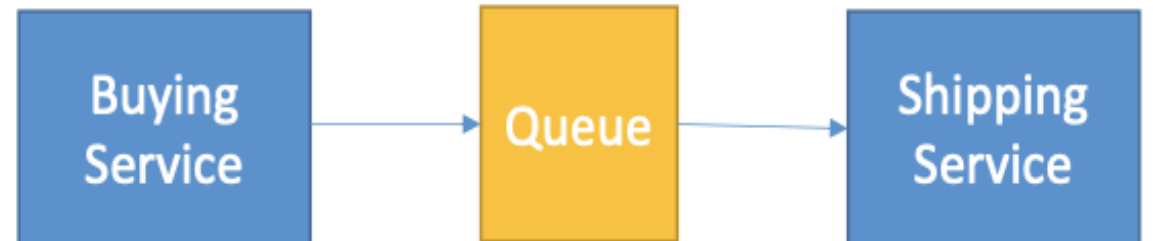


Communication and App Integration

1) Synchronous communications (application to application)



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



What is Amazon Simple Queue Service?



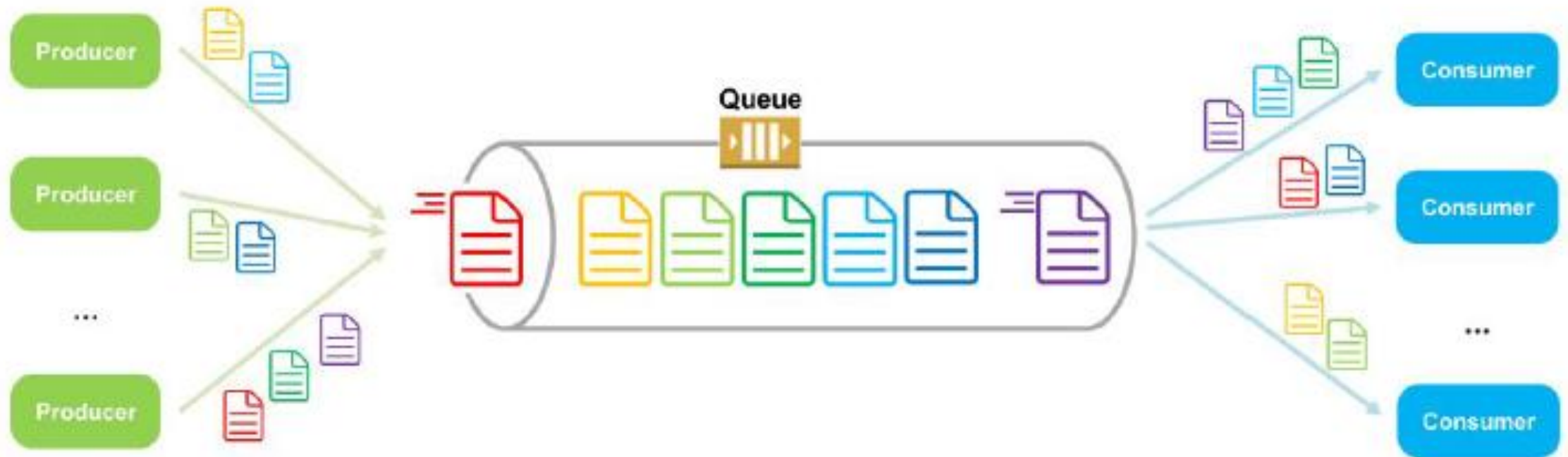
Amazon **Simple Queue Service (SQS)** is a fully managed **message queuing service** that enables you to decouple and scale microservices, distributed systems, and serverless applications.

A queue is a temporary repository for messages awaiting processing.

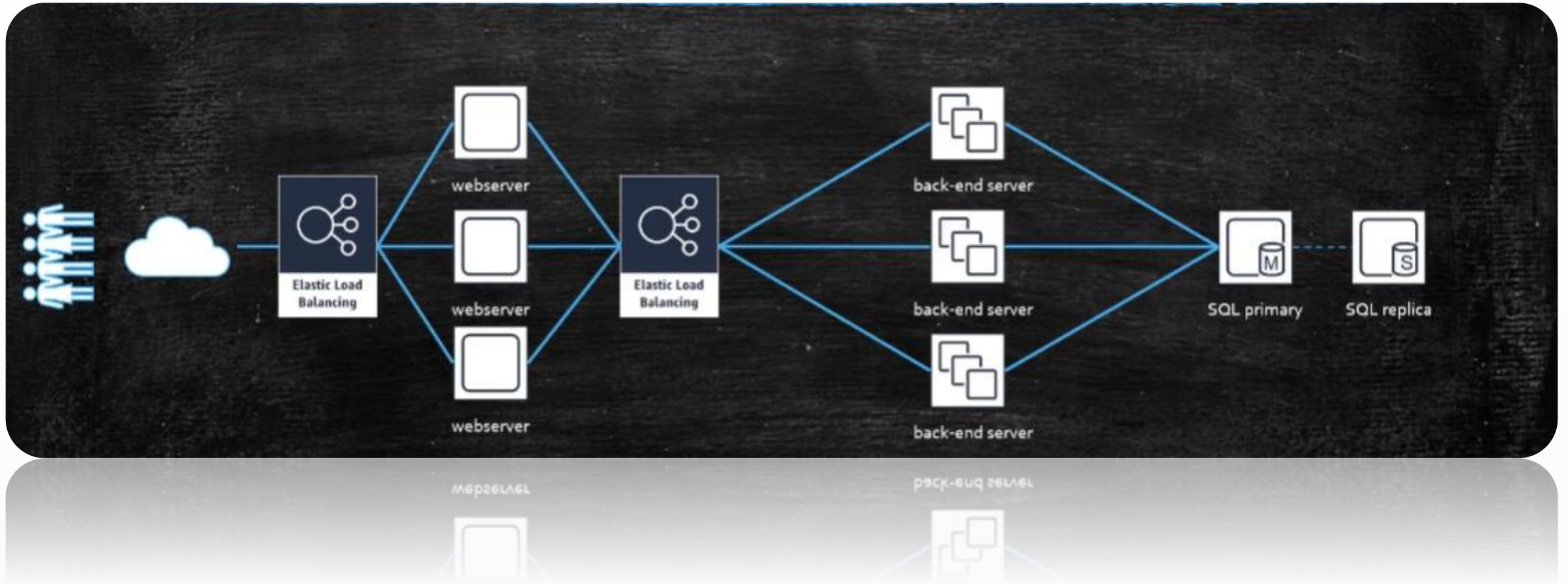
What is SQS?



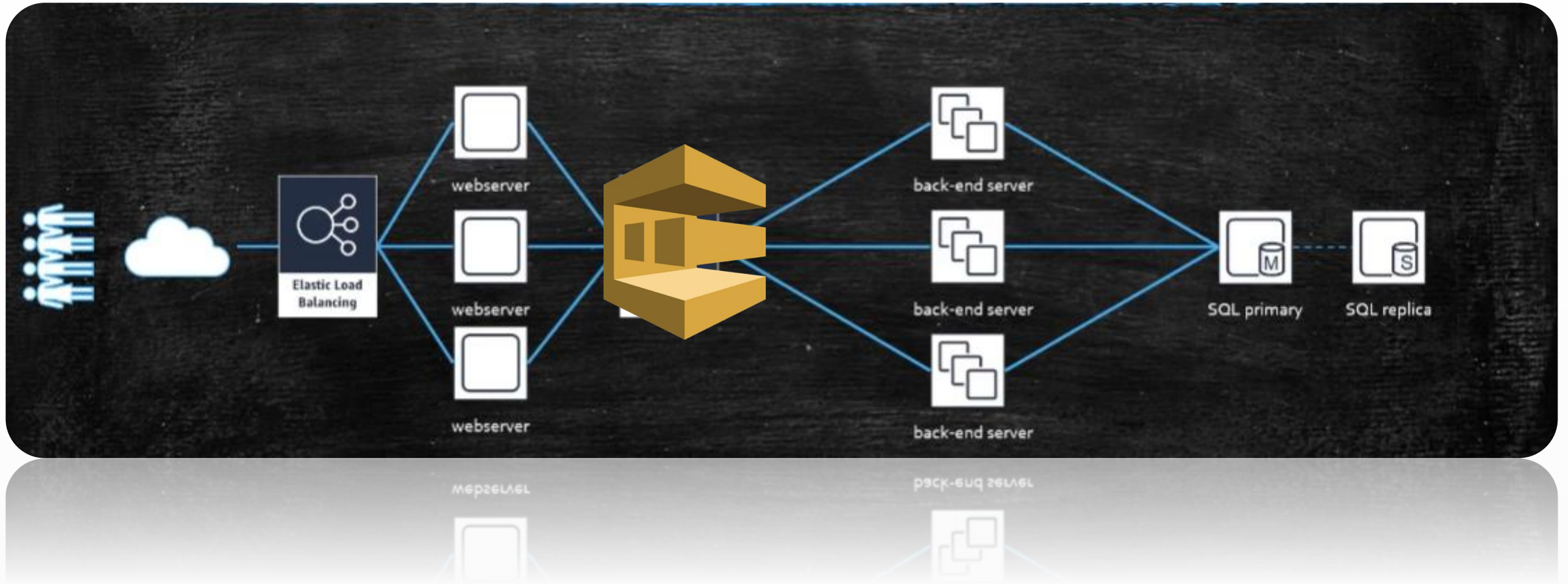
Amazon SQS
Queue



What is SQS?

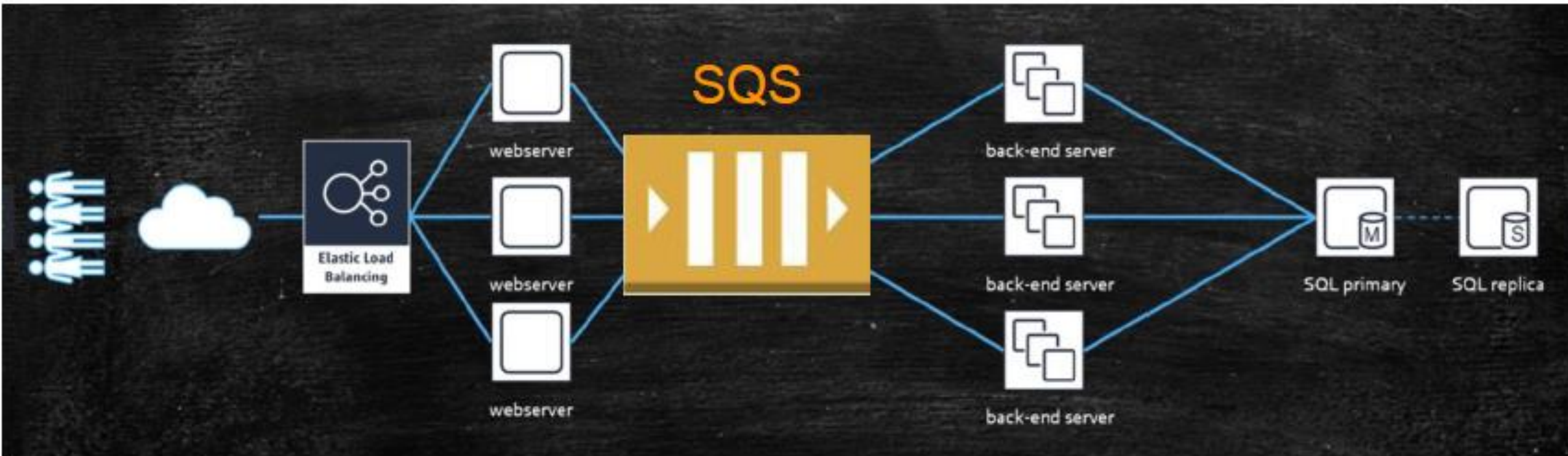


What is SQS?



What is SQS?

Decoupling

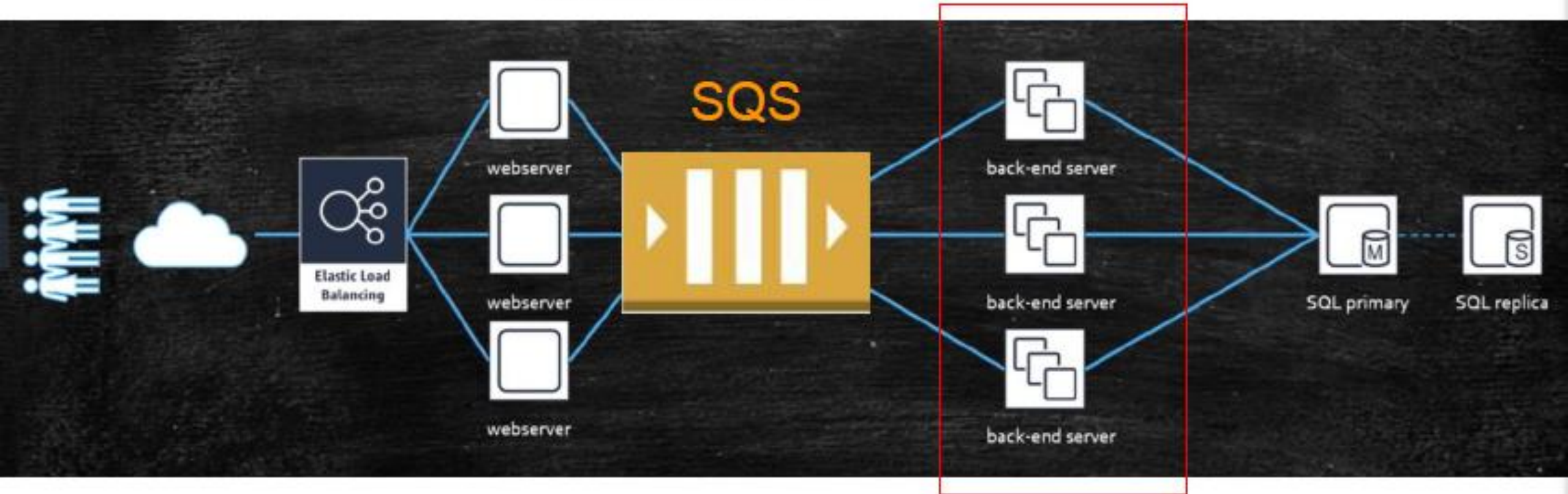


What is SQS?



CloudWatch Metric – Queue Length
ApproximateNumberOfMessages

ASG



Features of Simple Queue Service?

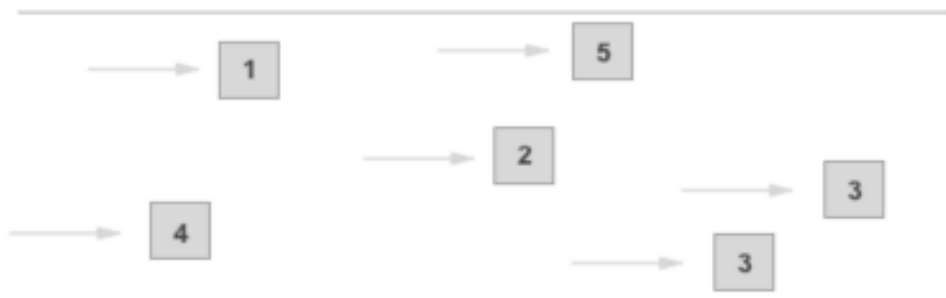
- Decouple Application Components
 - Decouple the components of an application so they run independently, easing message management between components.
- Store Messages
 - Any component of a distributed application can store messages in the queue. Messages can contain up to 256 KB of text in any format.
 - Messages remain until a consumer deletes it.
 - Messages retain upto 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.

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).

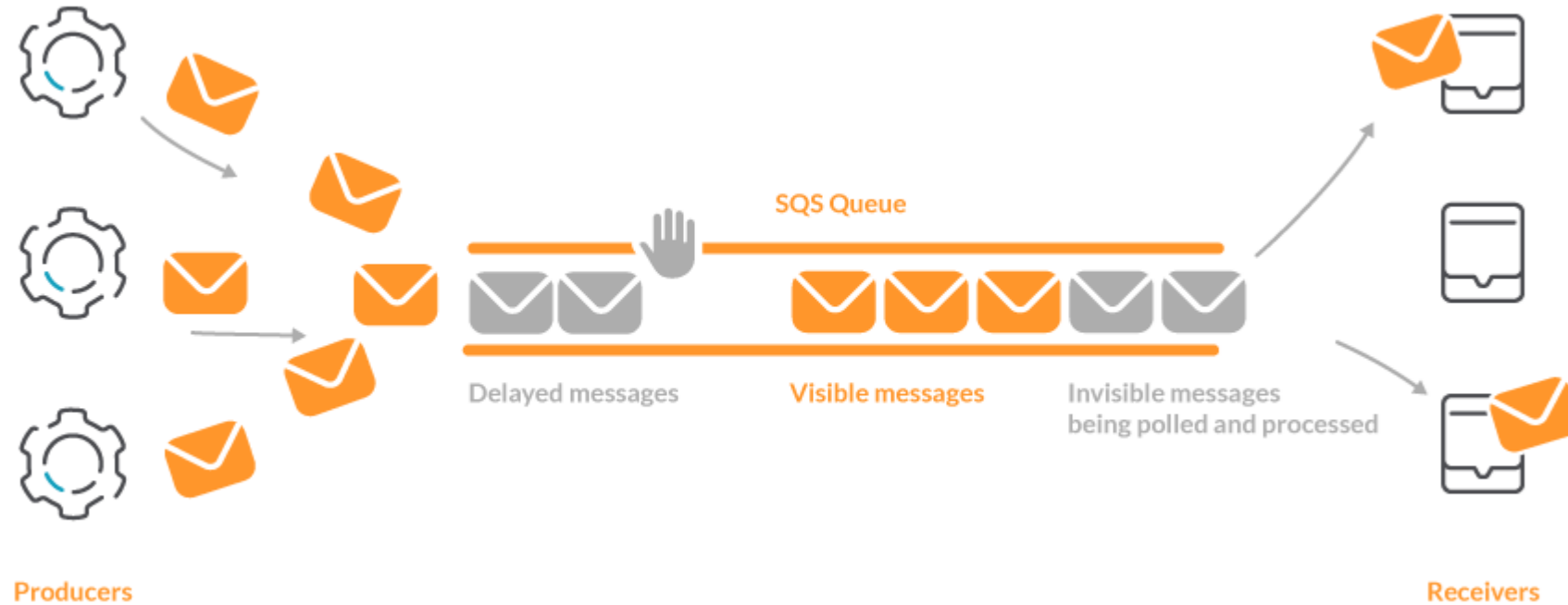


Send data between applications when the order of events is important, for example:

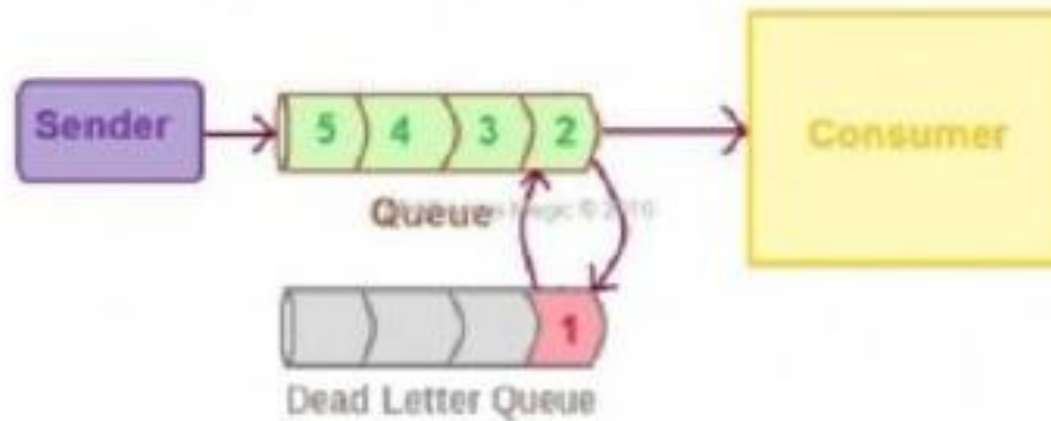
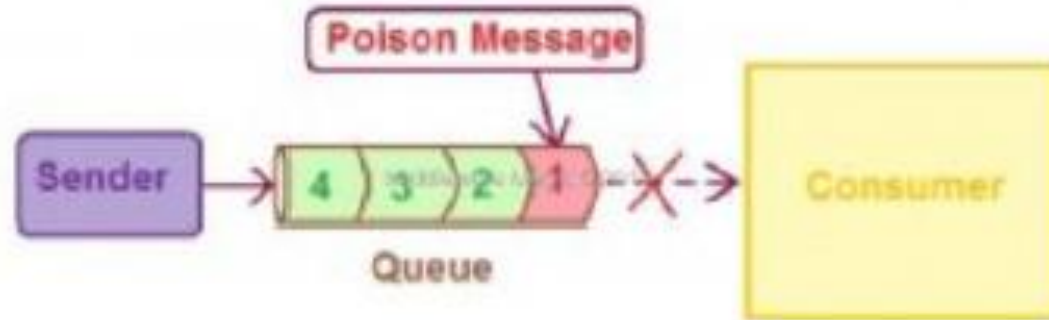
- Ensure that user-entered commands are executed in the right order.
- Display the correct product price by sending price modifications in the right order.
- Prevent a student from enrolling in a course before registering for an account.

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.



Dead Letter Queue (DLQ)



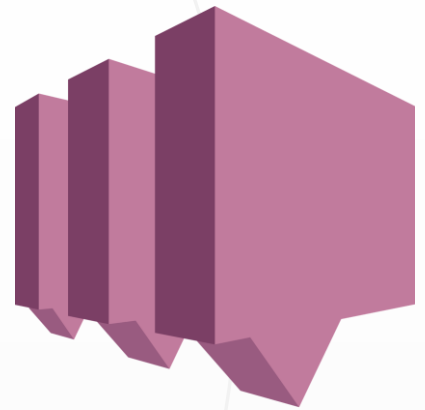
Pricing



Pay only for what you use

- AWS **Free Tier** includes **1 million requests** with Amazon Simple Queue Service (SQS).

SNS



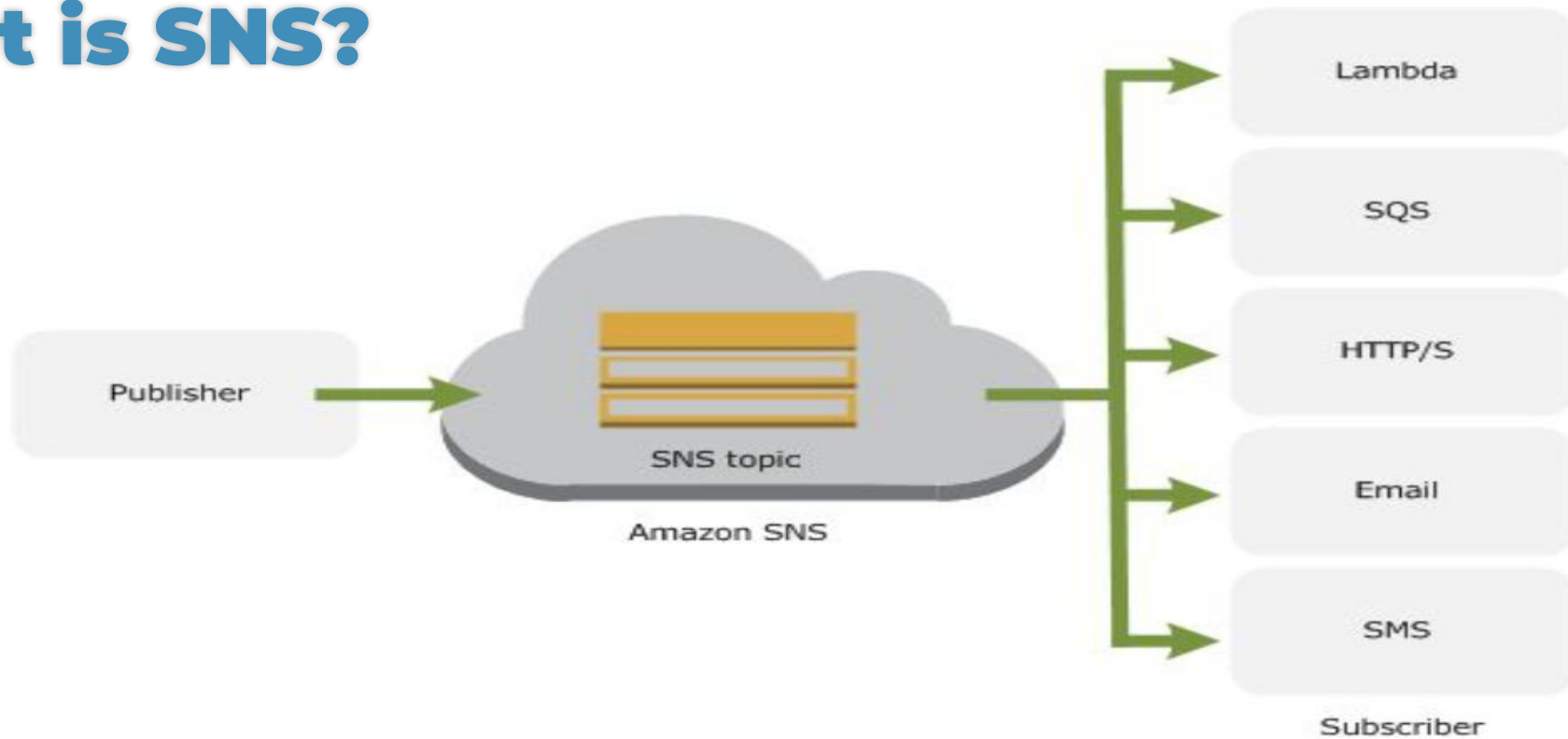
What is SNS?



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**).

What is SNS?



- Clients can subscribe to the **SNS topic** and receive published messages using a supported protocol, such as Amazon SQS, AWS Lambda, HTTP, email, mobile push notifications, and mobile text messages (SMS).

What is SNS?

Application-to-Application (A2A)

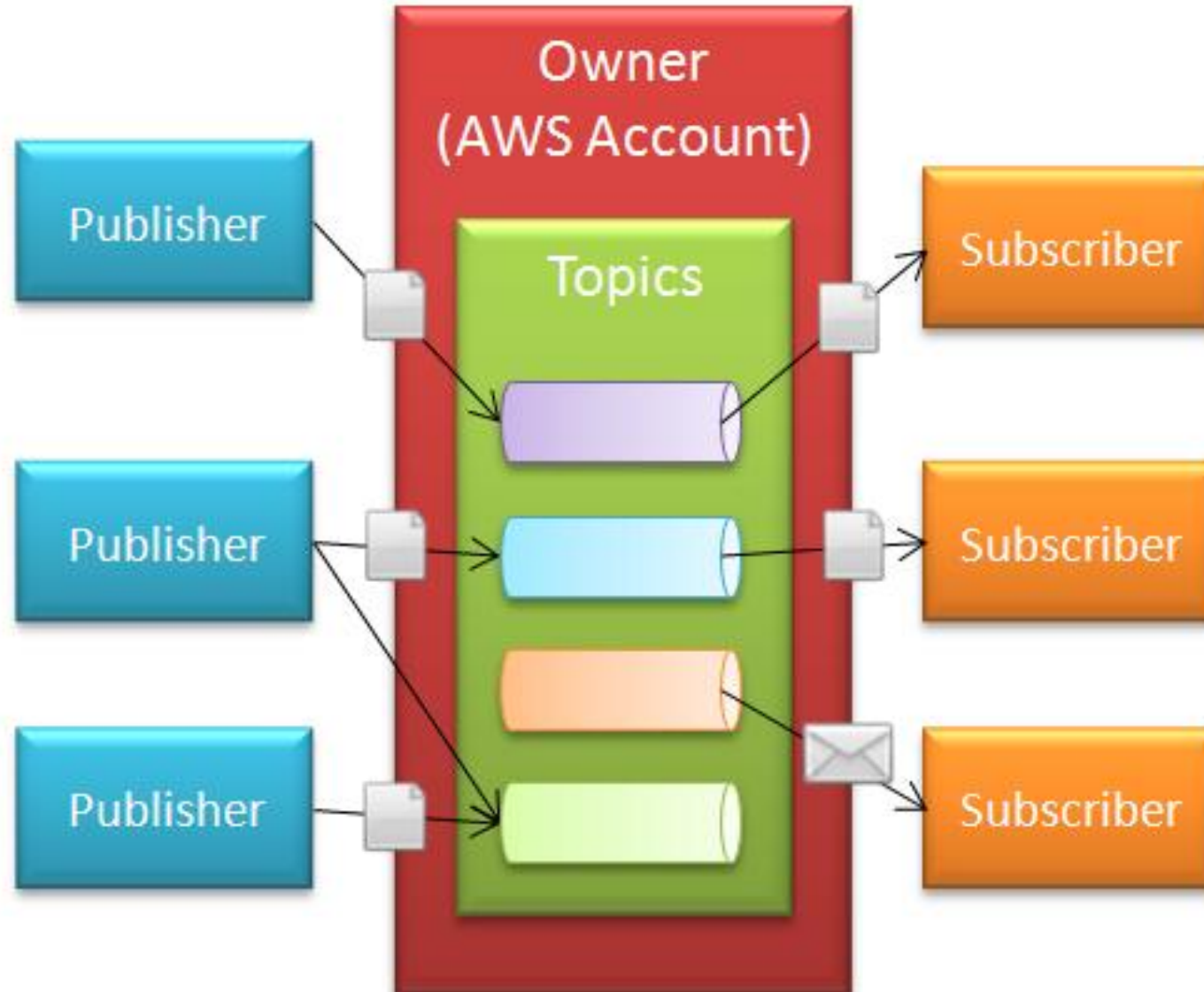


What is SNS?

Application-to-Person (A2P)



What is SNS?



What is SNS?

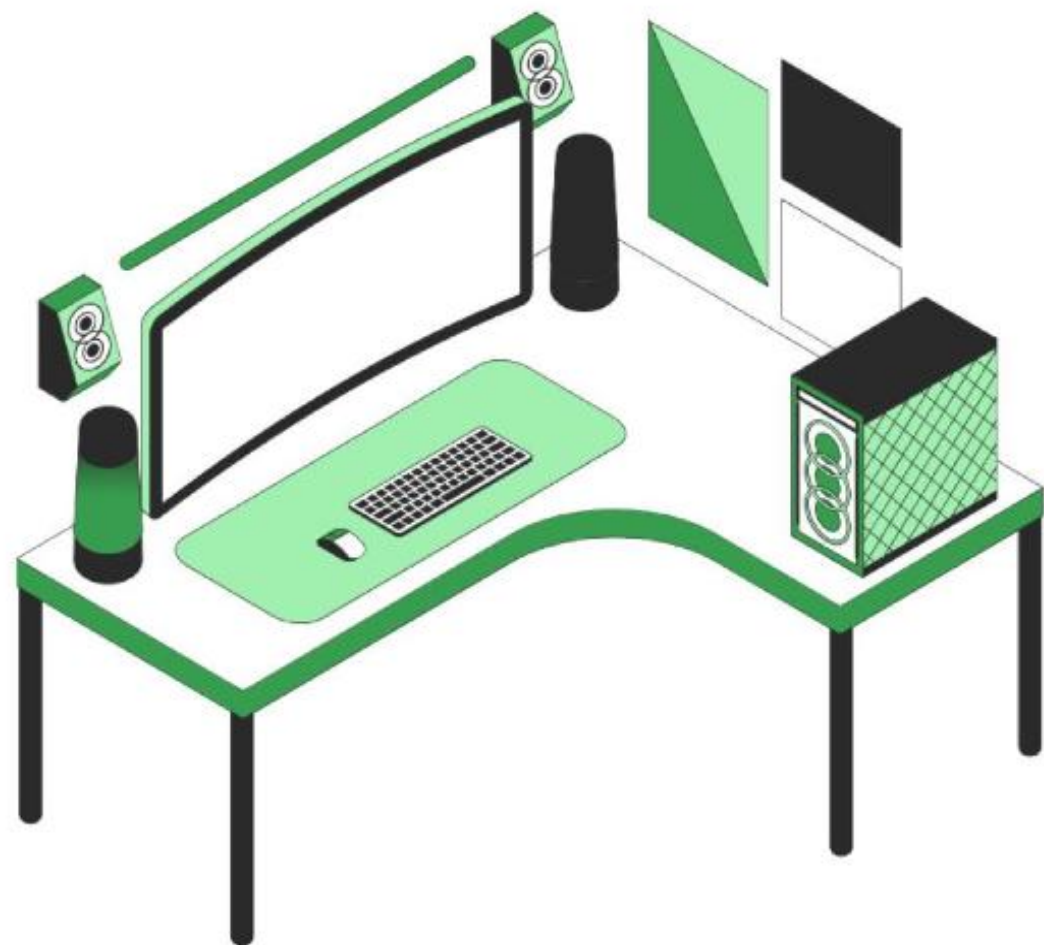
SNS is integrated with many AWS Services

- CloudWatch (Alarms/Events)
- S3 (Bucket Events)
- CloudFormation (State changes etc.)
- Auto Scaling Groups
- And many others **can invoke SNS.**

Pricing



Amazon SNS has **no upfront costs** and you can **pay as you go**. You pay based on the number of notifications you publish, the number of notifications 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 SNS free tier.



Do you have any questions?

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

Auto-Remediation

TechPro-Soft uses a 'multiple environment to a single AWS account' approach for EC2 deployments. The manager has noticed that there have been outages due to junior engineers accidentally changing desired capacity of the production ASG to 0. IAM permissions are avoided for now and you are asked to put an auto remediation solution to auto recover from these mistakes.

