...low latency applications ....to the edge of the 5G network
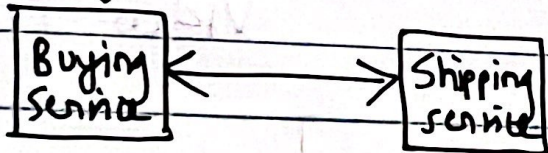
AWS Local Zones:
Brings AWS resources (compute, storage, database ..)
closer to your users.
Good for latency-sensitive applications.
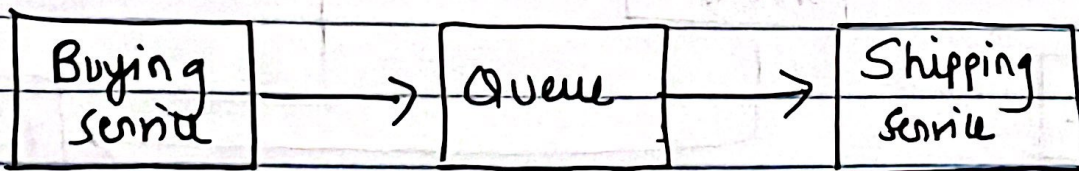
Cloud Integration section:
Applications need to communicate with each other.
Two patterns of communication:
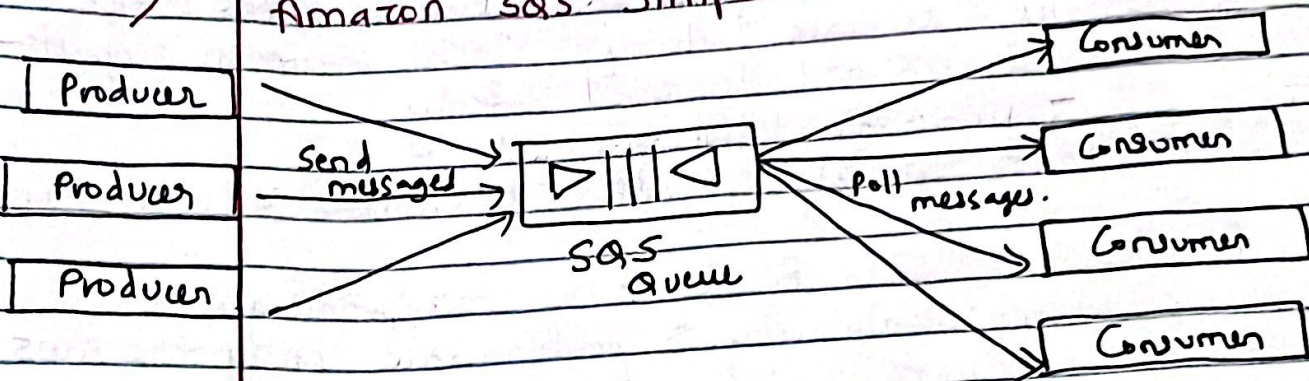Synchronous (application to application)

Buying service ←———————→ Shipping service

Asynchronous / Event based (Appl^n - queue - Appl^n)

Buying service ——————→ Queue ——————→ Shipping service

For scaling purpose - Decouple your application.
1) We SQS: Queue model
2) We SNS: pub/sub model
3) We kinesis: real time data streaming model

→ Amazon SQS: Simple Queue Service

Producer

Producer —— Send messages →

Producer →

▷|||◁

SQS Queue

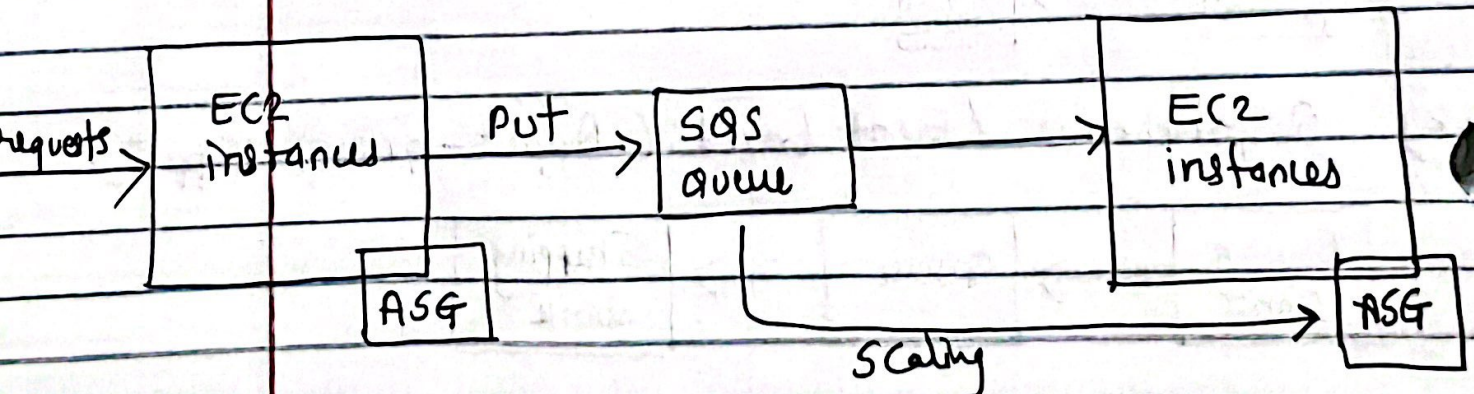→ Consumer

→ Consumer
Poll messages.

→ Consumer

→ Consumer

→ Amazon SQS: Standard Queue
- Oldest AWS offering
- Serverless, we to decouple applications
- Scale from 1 message per second to 10,000s per second
- Default retention of messages: 4 days, more of 14 days
- No limit on how many messages in the queue
- Message deleted after read by consumer.
- low latency
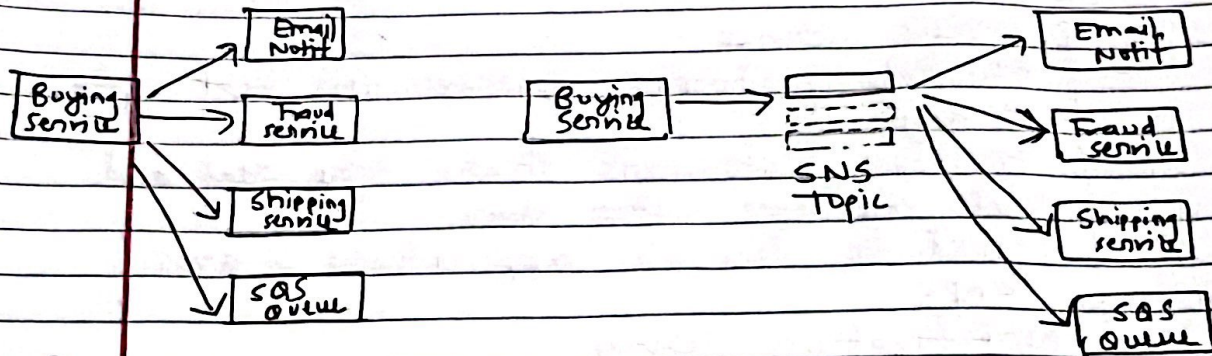- Consumers share the work to read messages & scale horizontally.

→ SQS: to decouple between application tiers
Web Servers   Video Processing

requests → EC2 instances → Put → SQS Queue → EC2 instances

ASG   ASG

Scaling

→ Amazon Kinesis:
Real-time big data streaming
Managed service to collect, process and analyze real-
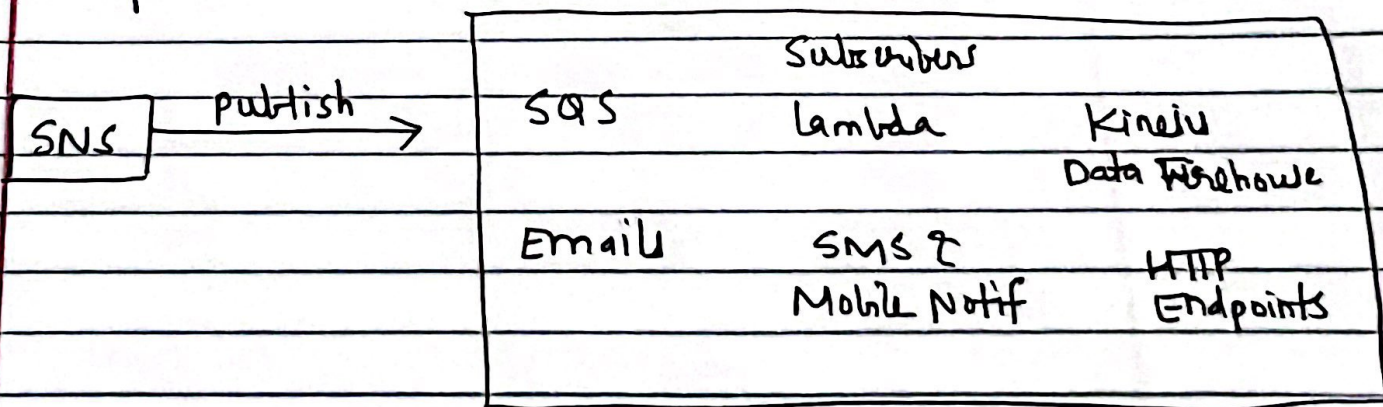time streaming data at any scale

→ Amazon SNS:
What if you want to send one message to many
users?
Direct Integration: Pub/Sub:

- "Event publishers" only sends message to one SNS
  topic.
As many "Event subscribers" as we want to listen to the
     SNS topic notifications.
- Each subscriber to the topic will get all the
  messages
- Upto 12,500,000 subscriptions per topic, 100,000
  topic limit.

SNS → publish →	Subscribers		
	SQS	lambda	Kinesis Data Firehouse
	Emails	SMS & Mobile Notif	HTTP Endpoints

Amazon MQ.
Managed Apache ActiveMQ.
Dosen't scale as much as SQS/SNS
Run on dedicated machine (not serverless)
Has both queue feature (~SQS) and topic
features (~SNS)

Cloud Integration Summary *
SQS:
Queue service
Multiple producers, messages are kept upto
14 days
Multiple consumers share the read and
delete messages when done
Wed to decouple applications in AWS.
SNS:
Notification service
Subscribers: Email, Lambda, SQS, HTTP,
Multiple subscribers; send all messages to all
of them.
No message retention-
Kinesis: Real-time data streaming, persistence
and analysis.
Amazon MQ: Managed Apache (MQ) in the
cloud