# GOOGLE PUB/SUB

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# AGENDA

What is Pub/Sub

Micro-Service Architecture : Shopping App

Problems in Micro-Service Architecture

Solution: Pub/Sub

Pub/Sub Architecture

Pub/Sub Architecture : Shopping App

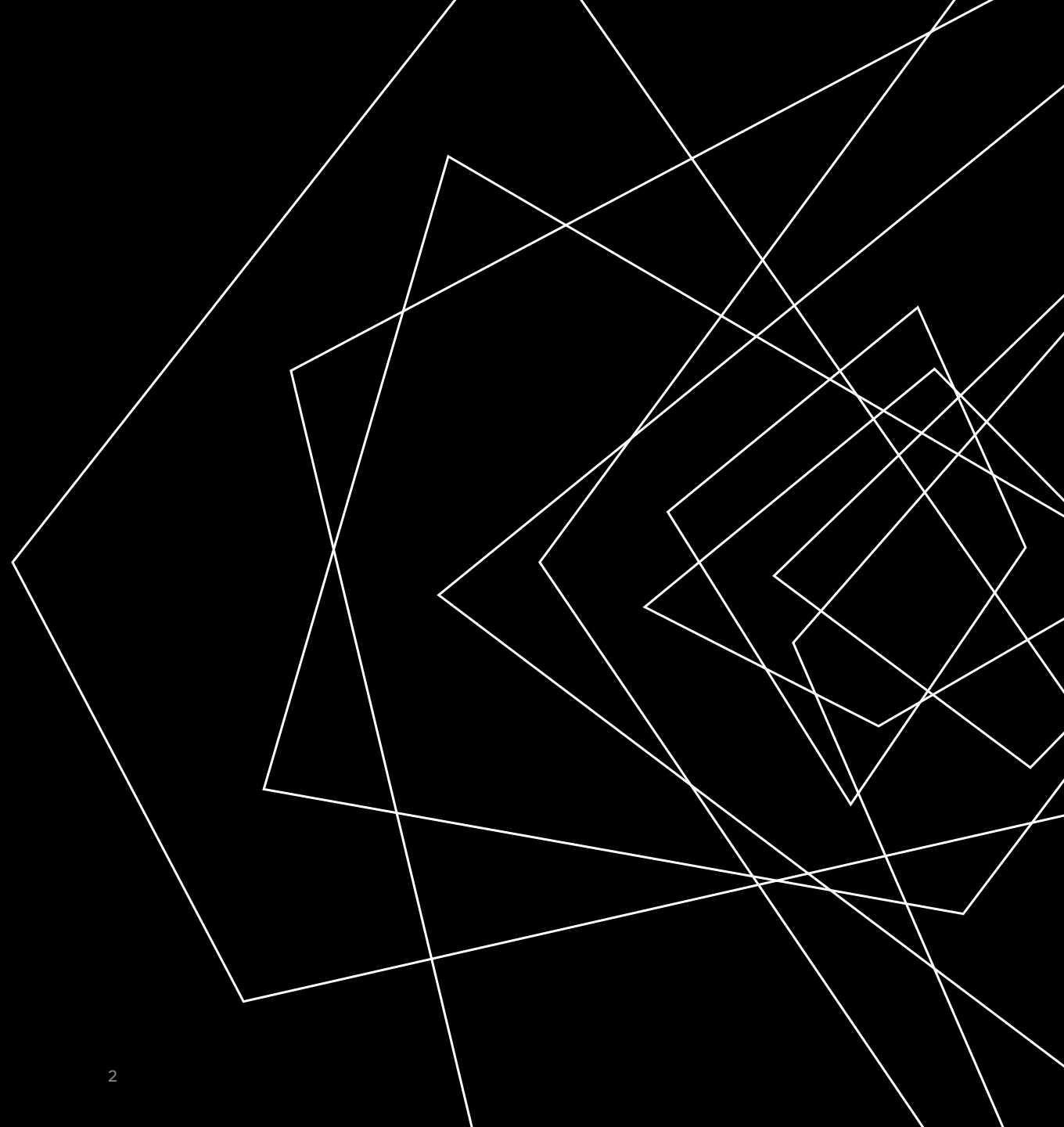
Streaming Analytics and Ingestion

Spark and Cloud Pub/Sub

Other Use Cases

Similar Messaging Services

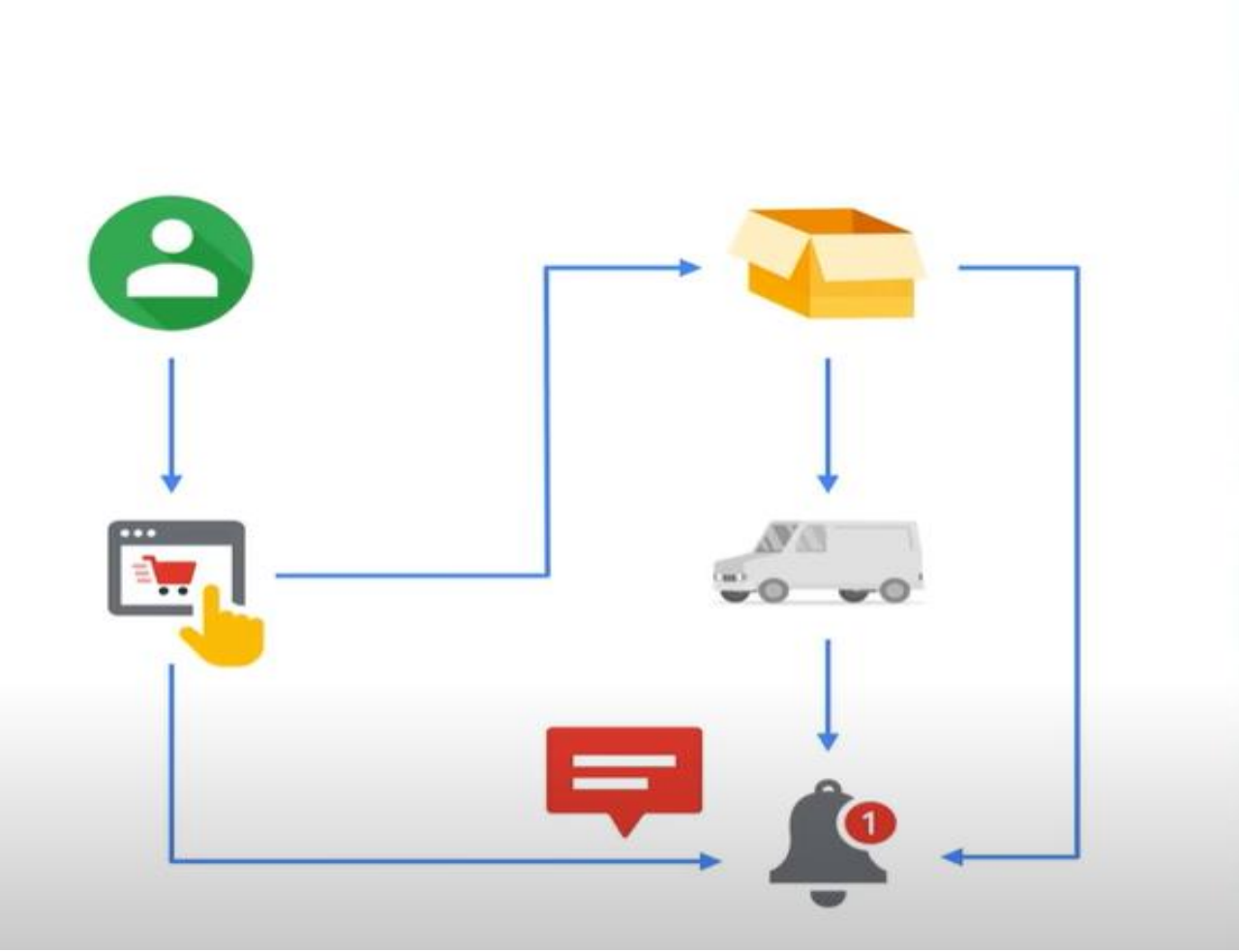
Demo



# WHAT IS PUB/SUB ?

Pub/Sub is an managed, asynchronous and scalable messaging service that decouples services producing messages from services processing those messages.

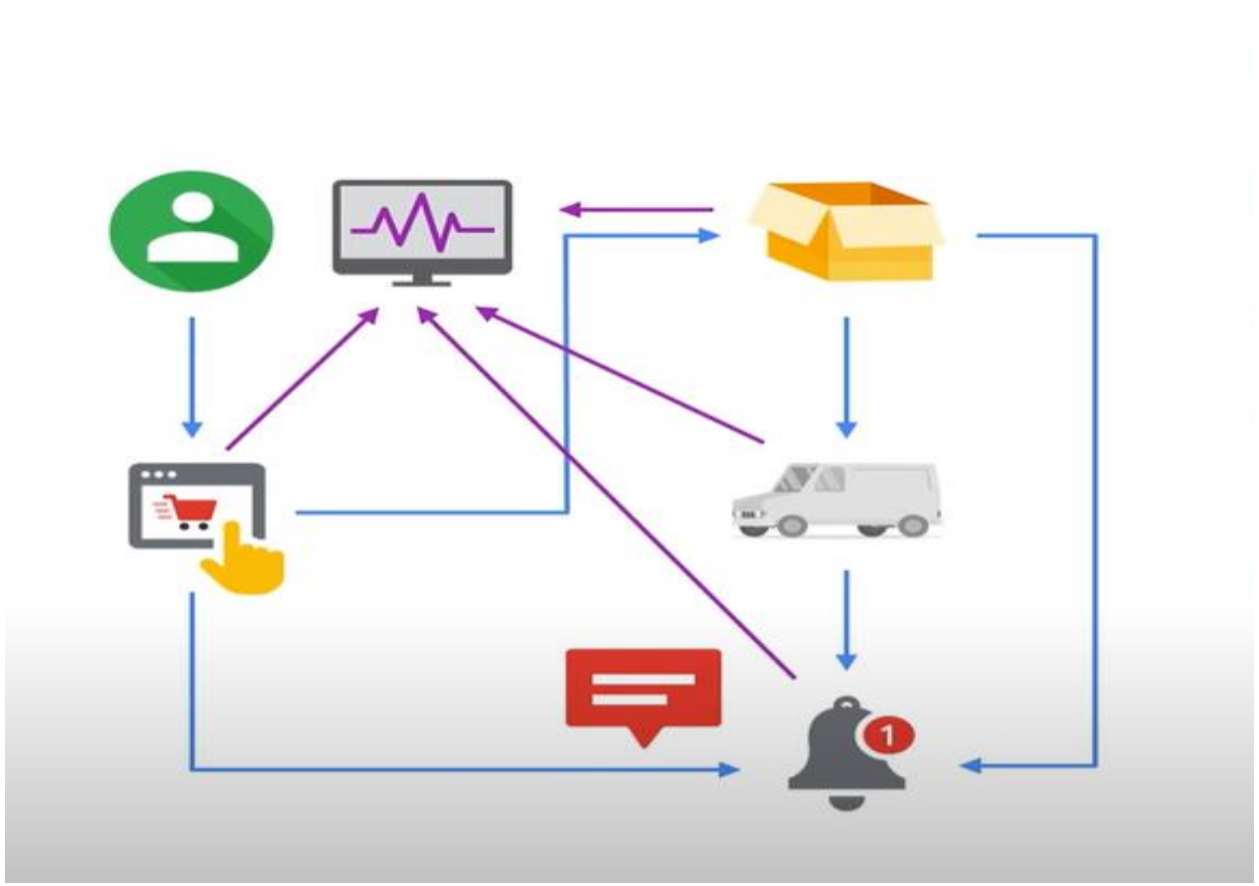
# MICRO-SERVICE ARCHITECTURE



Microservices:

- Website
- Packaging
- Shipping
- Notification

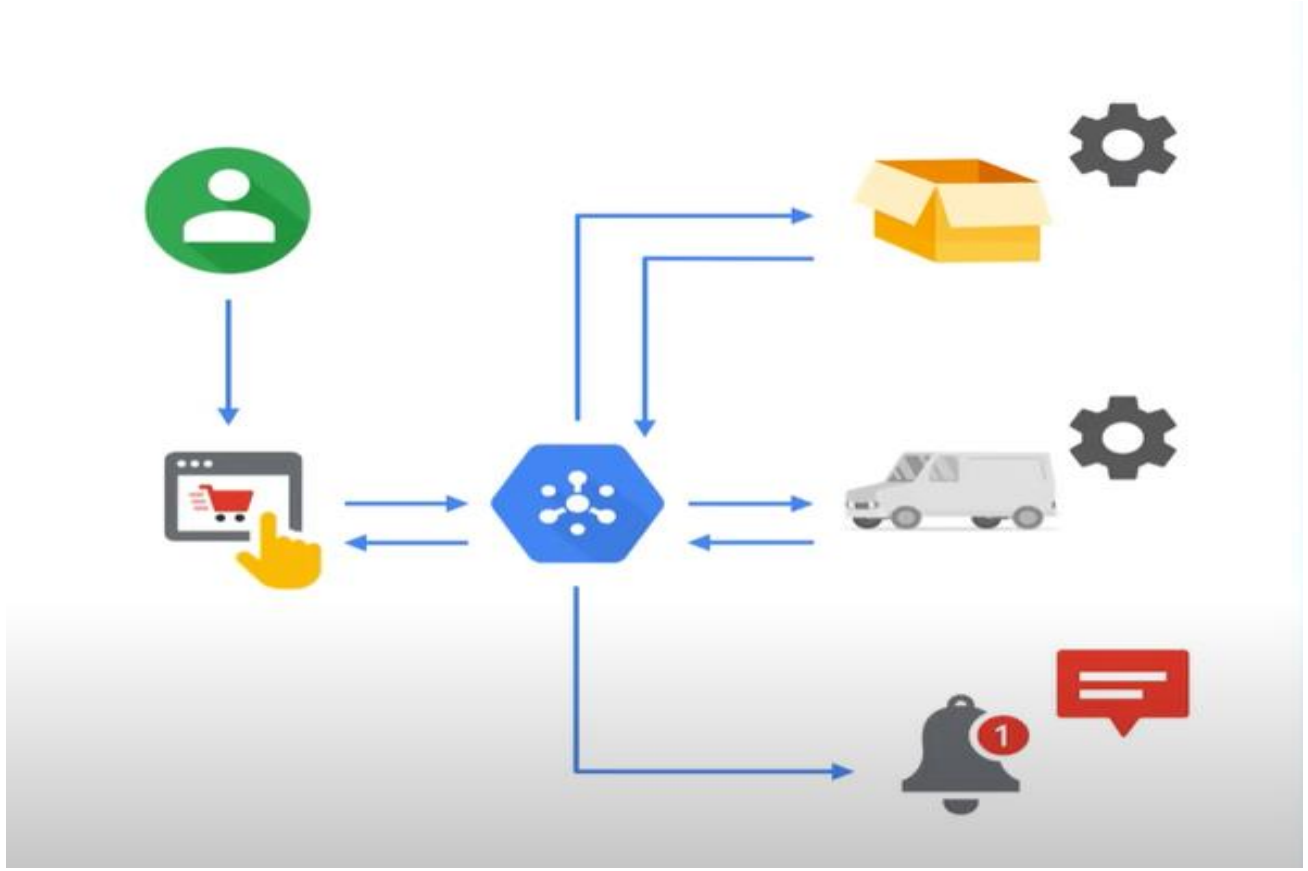
# PROBLEMS IN MICRO-SERVICE ARCHITECTURE



Problems :

- Complexity
- Testing
- Scalability
- Point of Failure

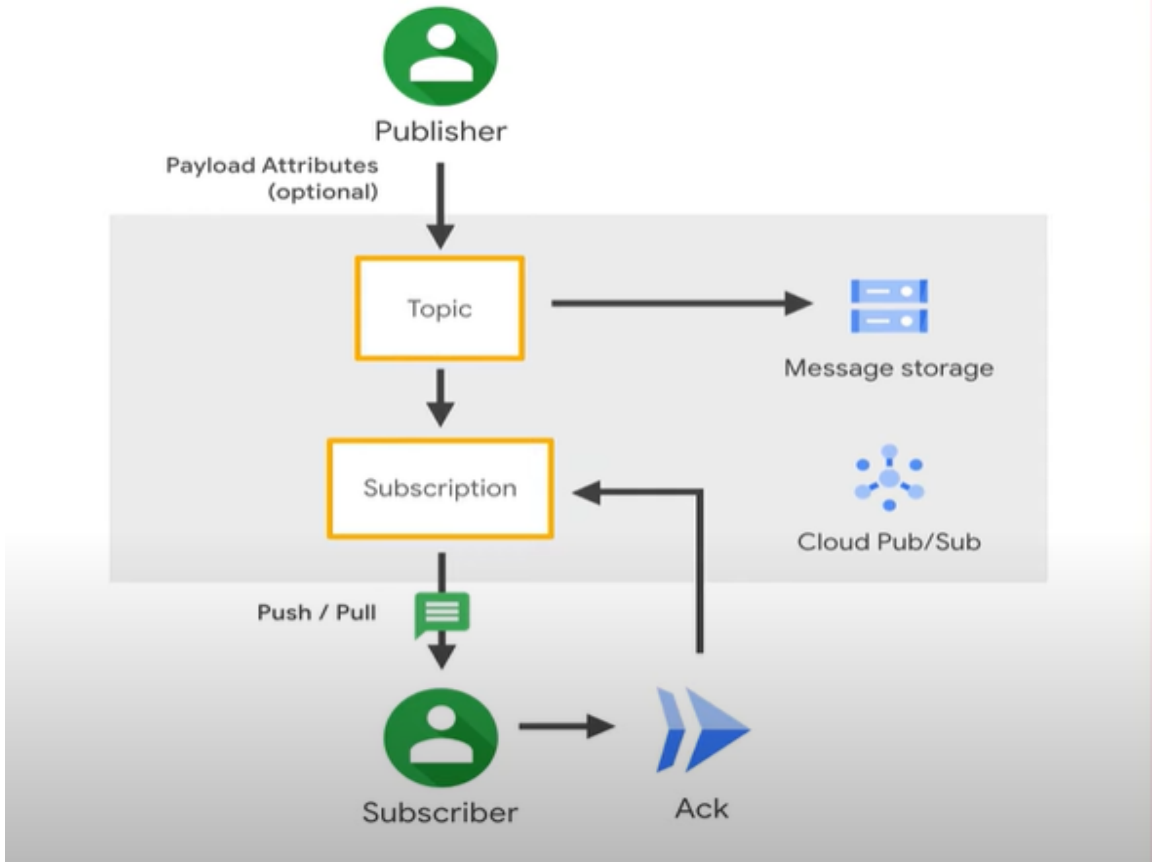
# SOLUTION: PUB/SUB



Solutions:

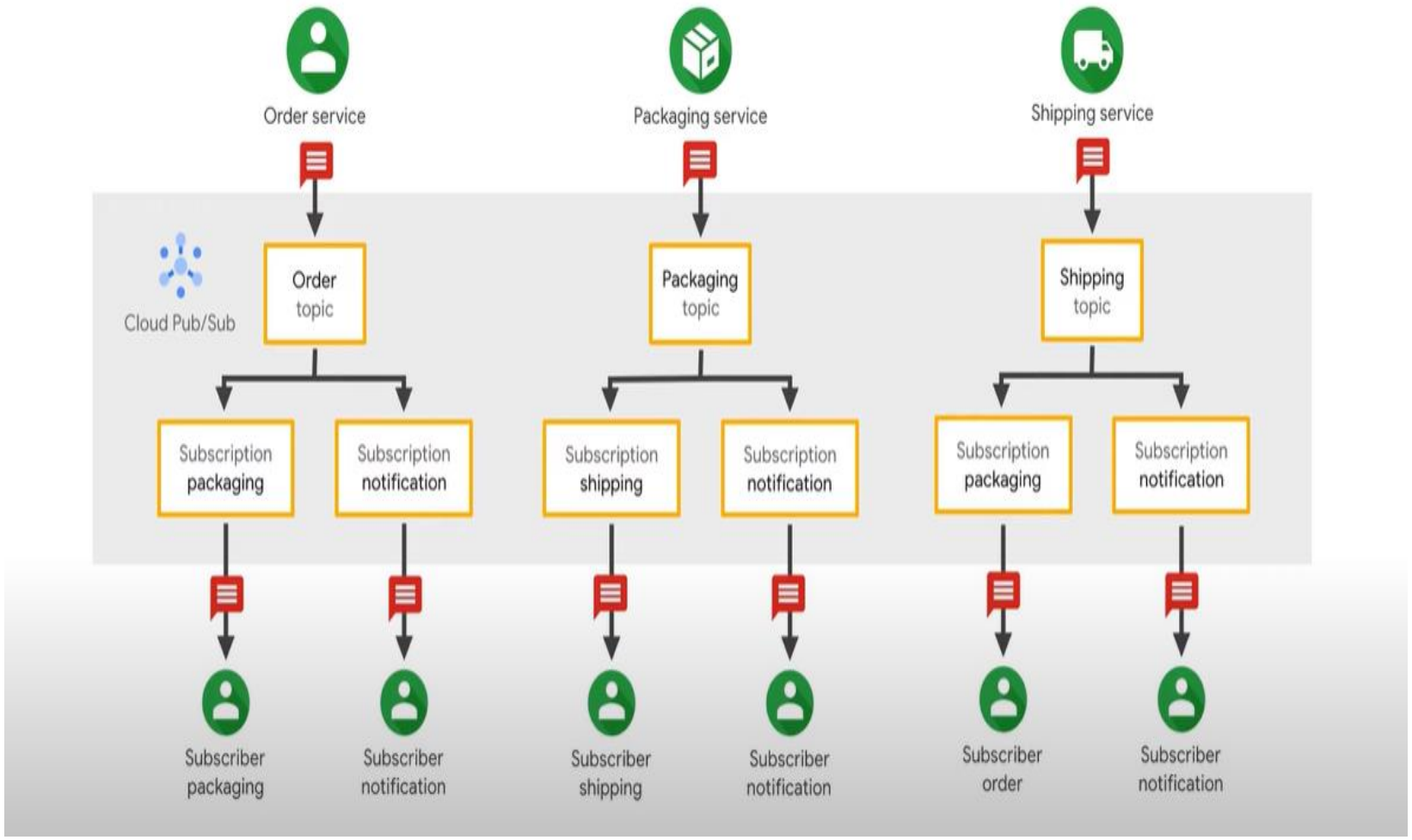
- Decoupled and Simplified Workflow
- Highly Scalable
- Easy addition of new service
- Isolated testing of each service.

# PUB/SUB ARCHITECTURE



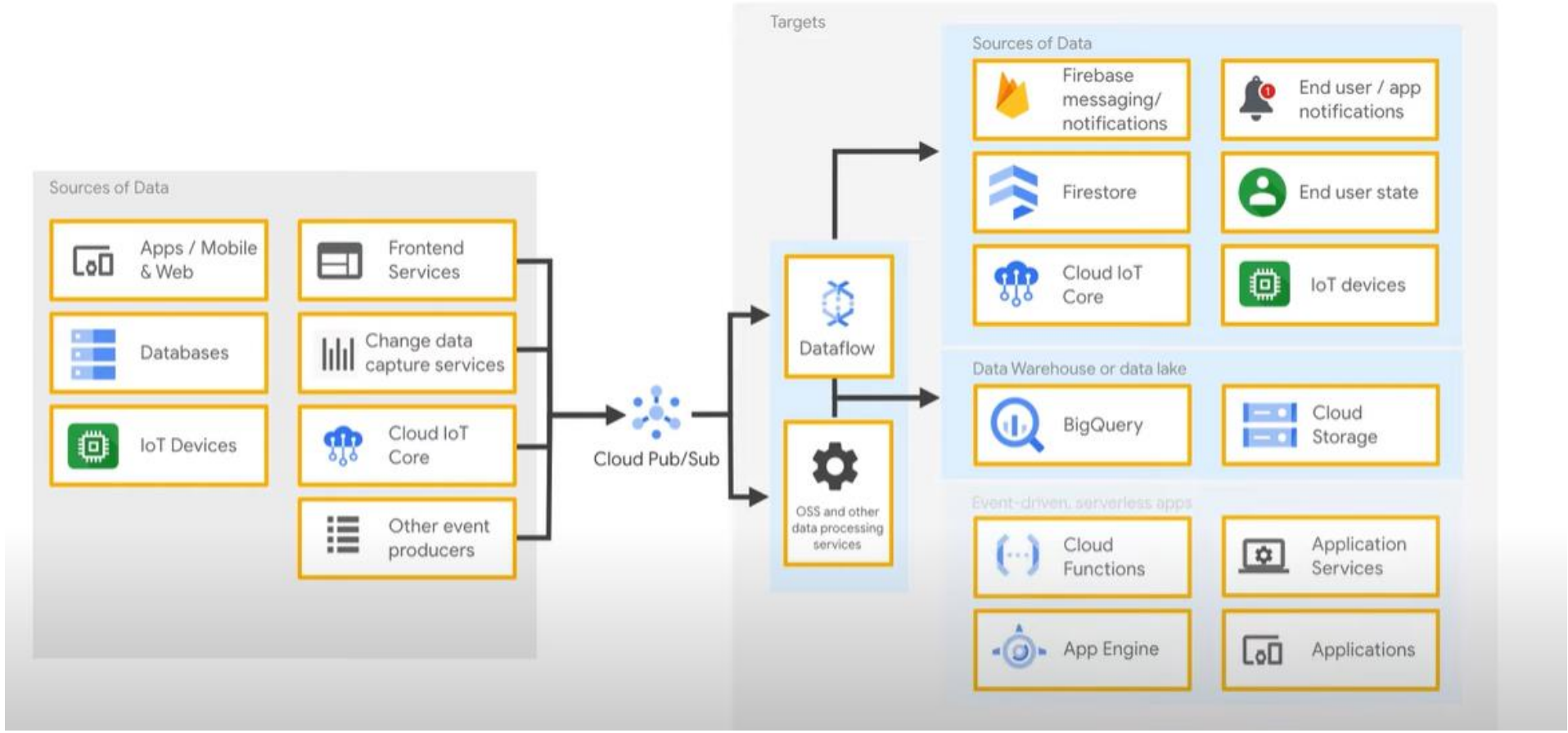

- Publisher is an application or service which produces events such as ordering application ,packing service etc.
- Topic is a namespace where messages are stored. Isolated testing of each service.
- Subscriber is another application which receives messages by creating subscription to a topic.

# PUB/SUB ARCHITECTURE: SHOPPING APP

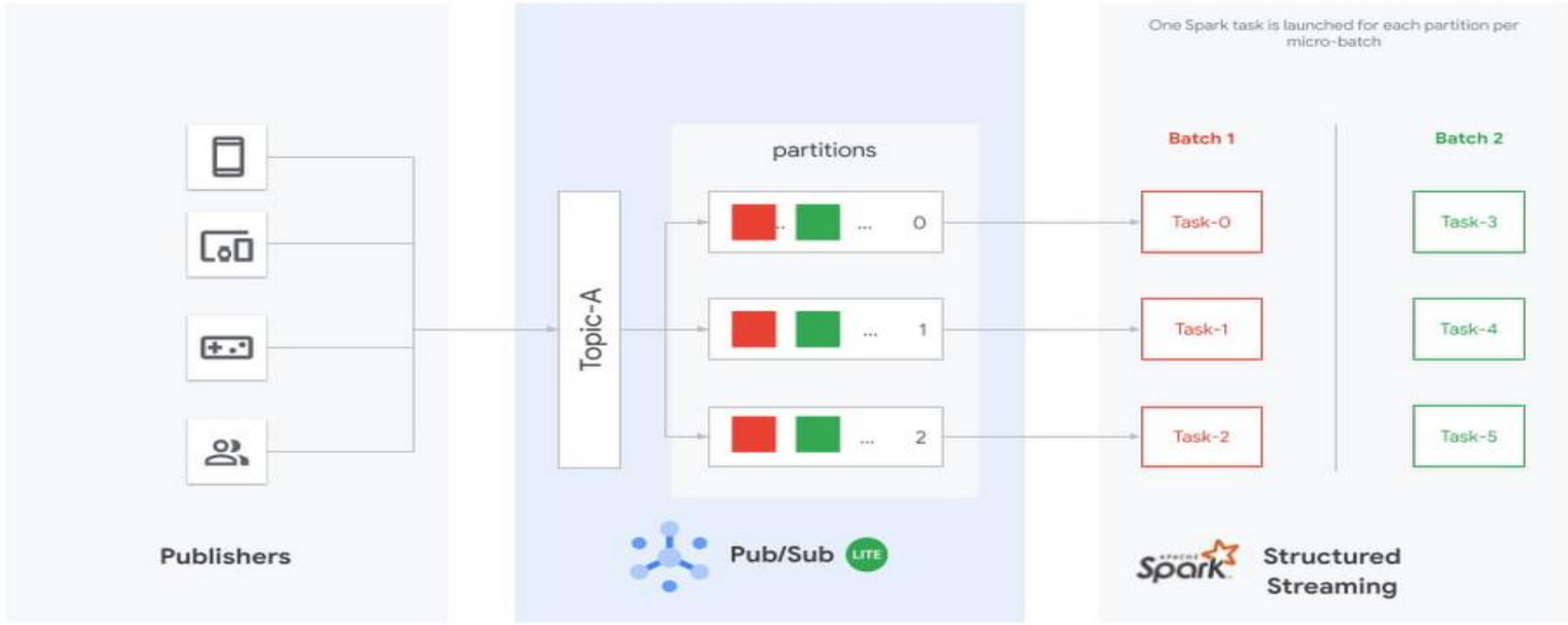


# STREAMING ANALYTICS AND INGESTION

Pub/Sub is used for streaming analytics and data integration pipelines to ingest and distribute data.



# SPARK AND CLOUD PUB/SUB



# OTHER USE CASES

- **Ingestion user interaction and server events.** To use user interaction events from end-user apps or server events from your system, you might forward them to Pub/Sub. You can then use a stream processing tool, such as Spark, which delivers the events to databases.

- **Real-time event distribution.** Events, raw or processed, may be made available to multiple applications across your team and organization for real- time processing.

- **Replicating data among databases.** Pub/Sub is commonly used to distribute change events from databases. These events can be used to construct a view of the database state and state history in BigQuery and other data storage systems.

- **Data streaming from applications, services, or IoT devices.** For example, a SaaS application can publish a real-time feed of events. Or, a residential sensor can stream data to Pub/Sub for use in other Google Cloud products through a Dataflow or Spark pipeline.

# SIMILAR SERVICES




# DEMO