Apache Kafka Overview

Subtitle

Social handles

Team or presenters name

Date

Agenda

Apache Kafka use cases

Apache Kafka 101

Challenges operating Apache Kafka

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Apache Kafka

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Apache Kafka use cases

Real-time web and log analytics

Messaging

Transaction and event sourcing

Decoupled microservices

Streaming ETL

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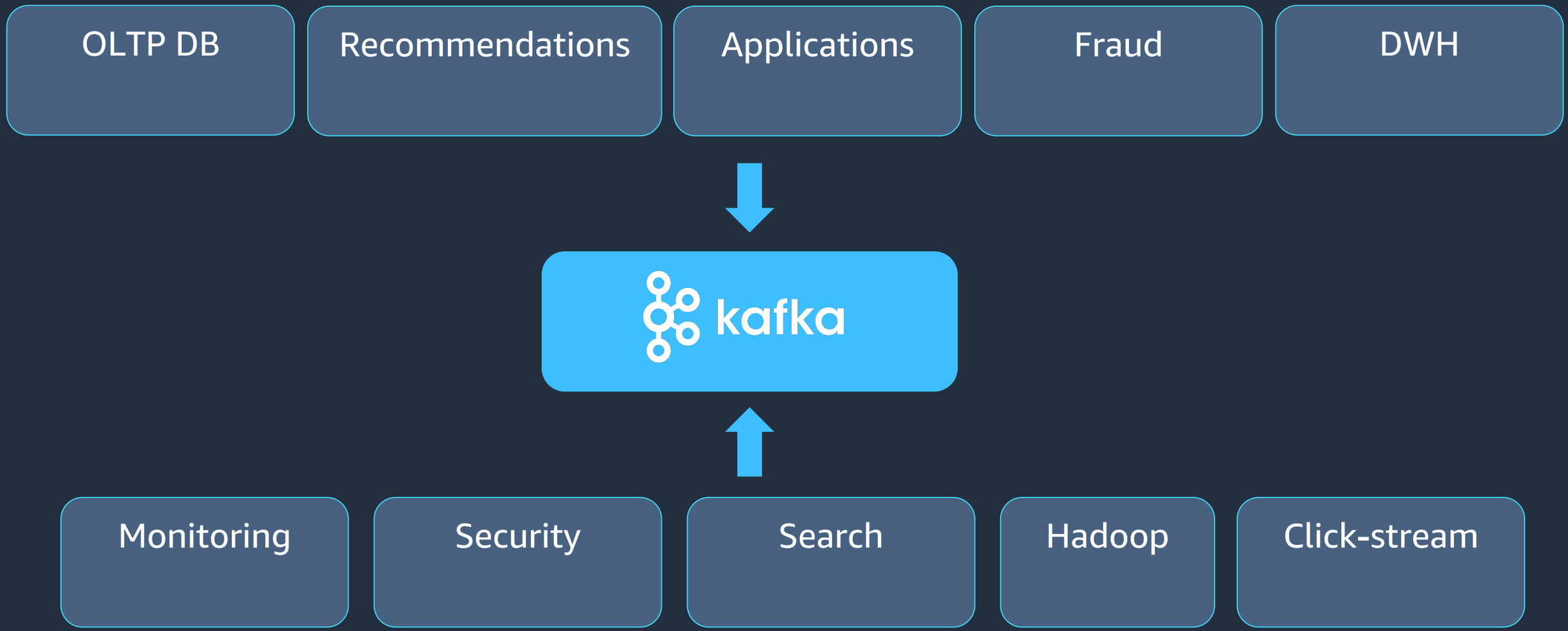
Why Apache Kafka?



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Apache Kafka : anatomy

Apache Kafka is a “Distributed Streaming Platform”

Apache Kafka has 3 core capabilities:

1) Publish and subscribe to streams of records (message queue)

2) Store streams of records in a fault-tolerant way

3) Process streams of records as they occur

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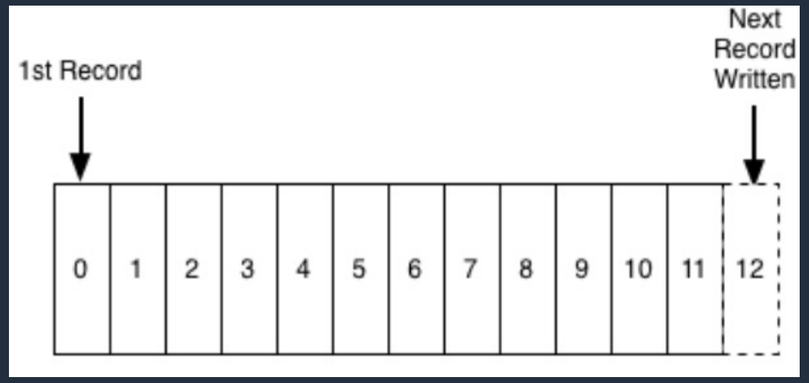
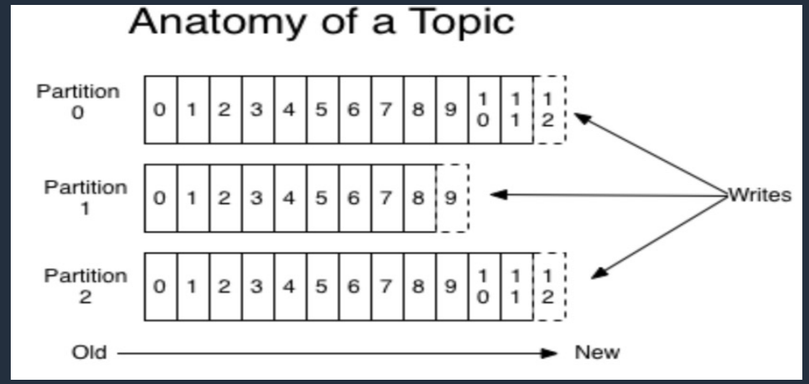
Apache Kafka : anatomy

Key concepts

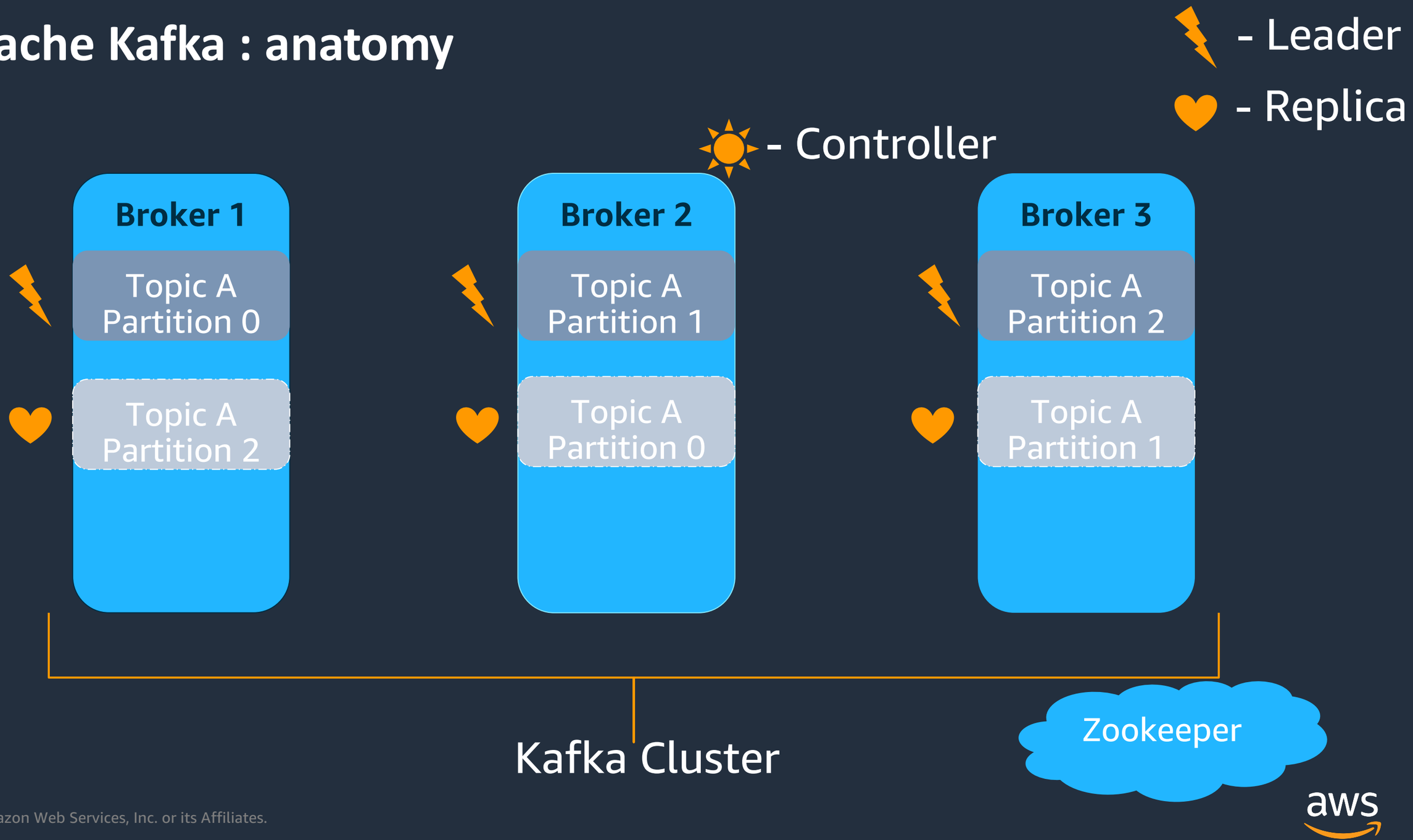
The log: An append-only, totally-ordered sequence of records ordered by time. It looks like this:





* Kafka is run as a cluster, one or more servers, multiple datacenters. (AZ's)
* Each record consists of a key, a value, and a timestamp.
* The Kafka cluster stores streams of *records* in categories called *topics*.

Apache Kafka : anatomy



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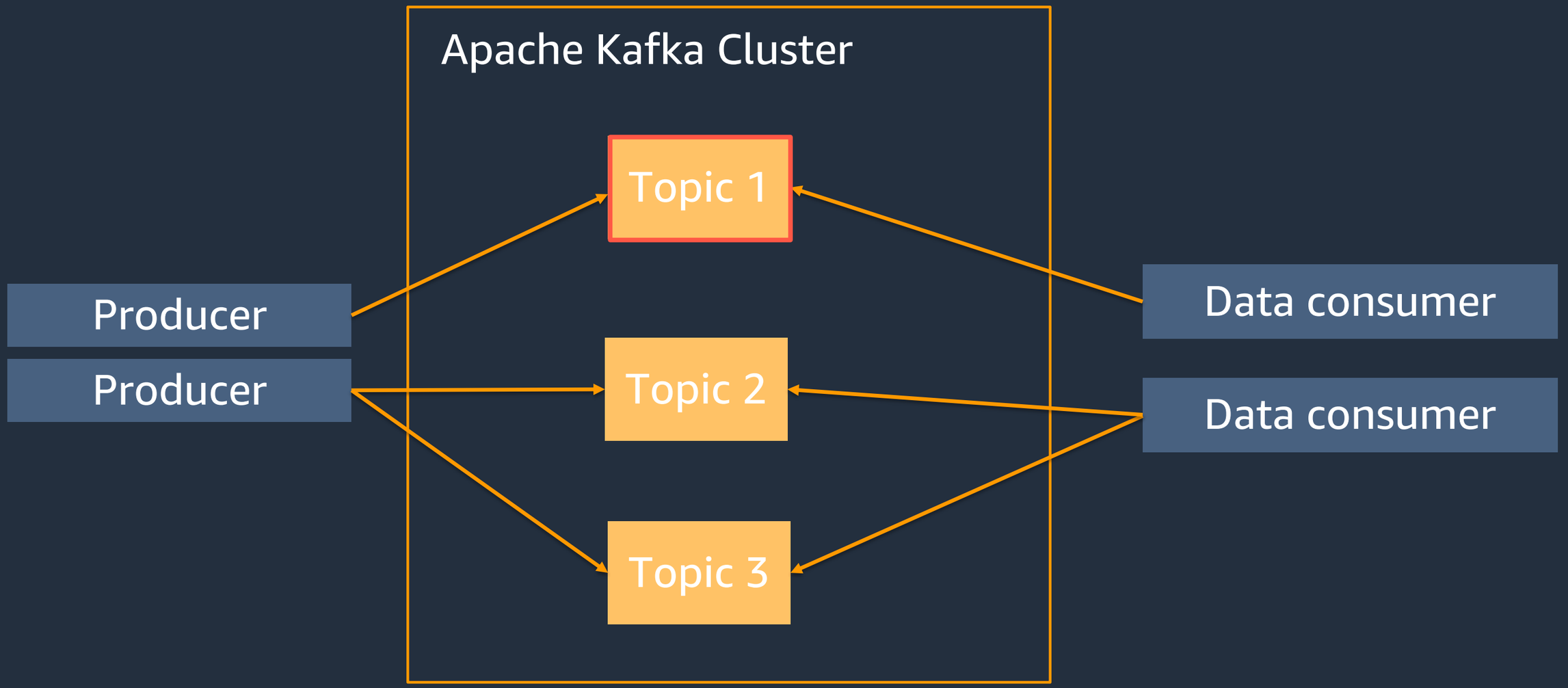
Apache Kafka anatomy 101: Topics



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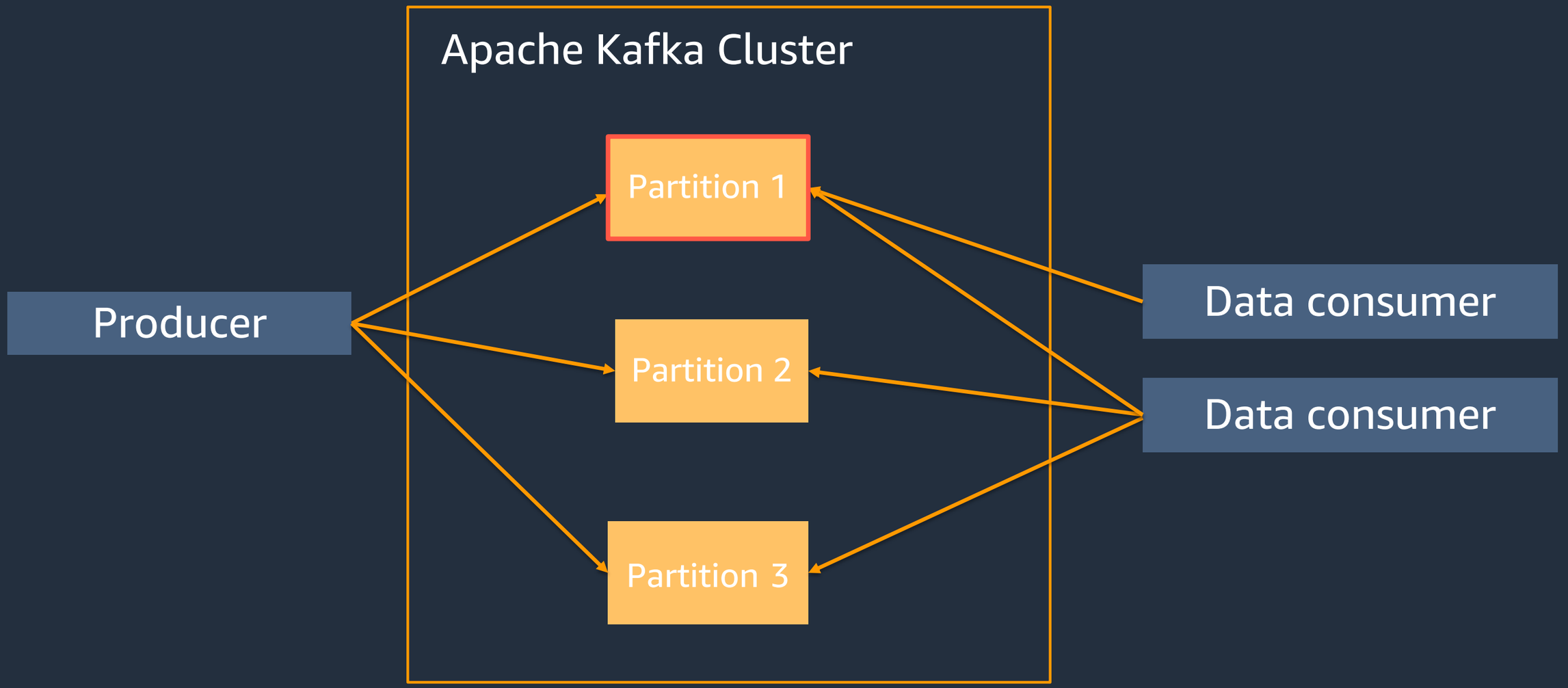
Apache Kafka anatomy 101: Partitions



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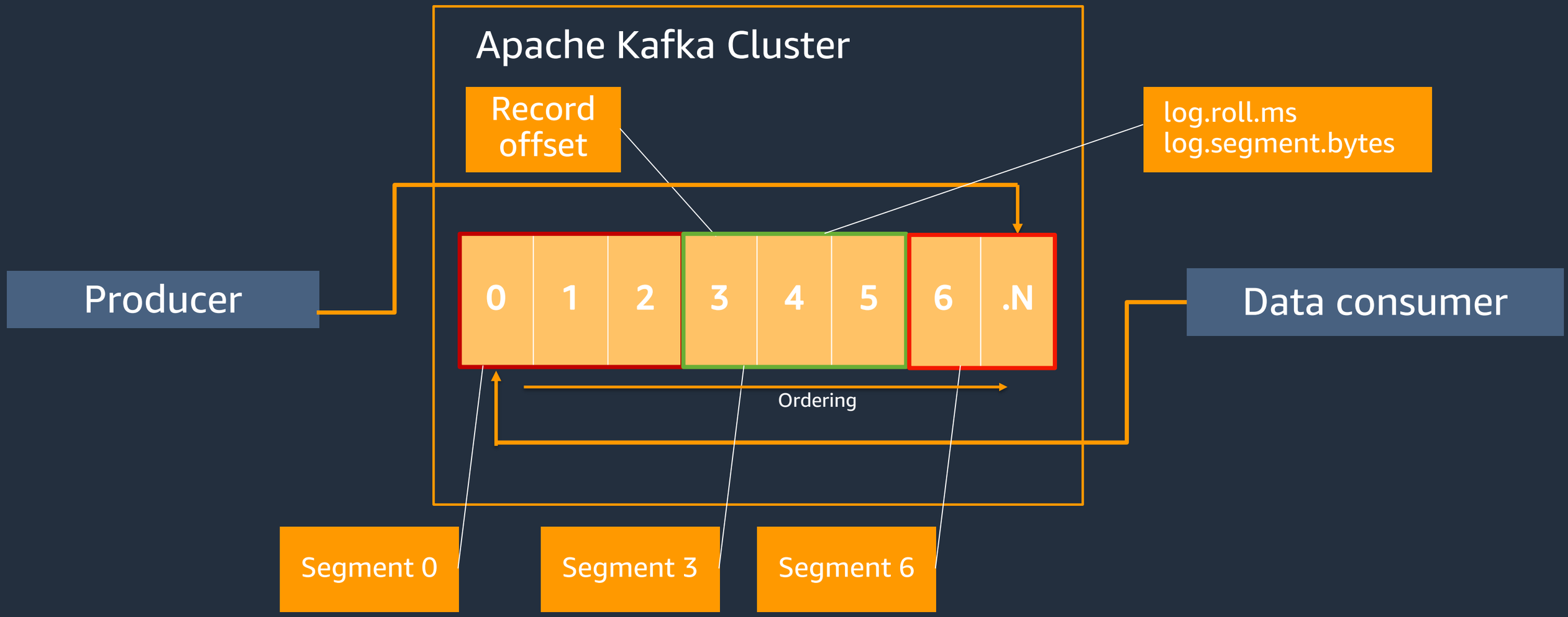
Apache Kafka anatomy 101: Offsets



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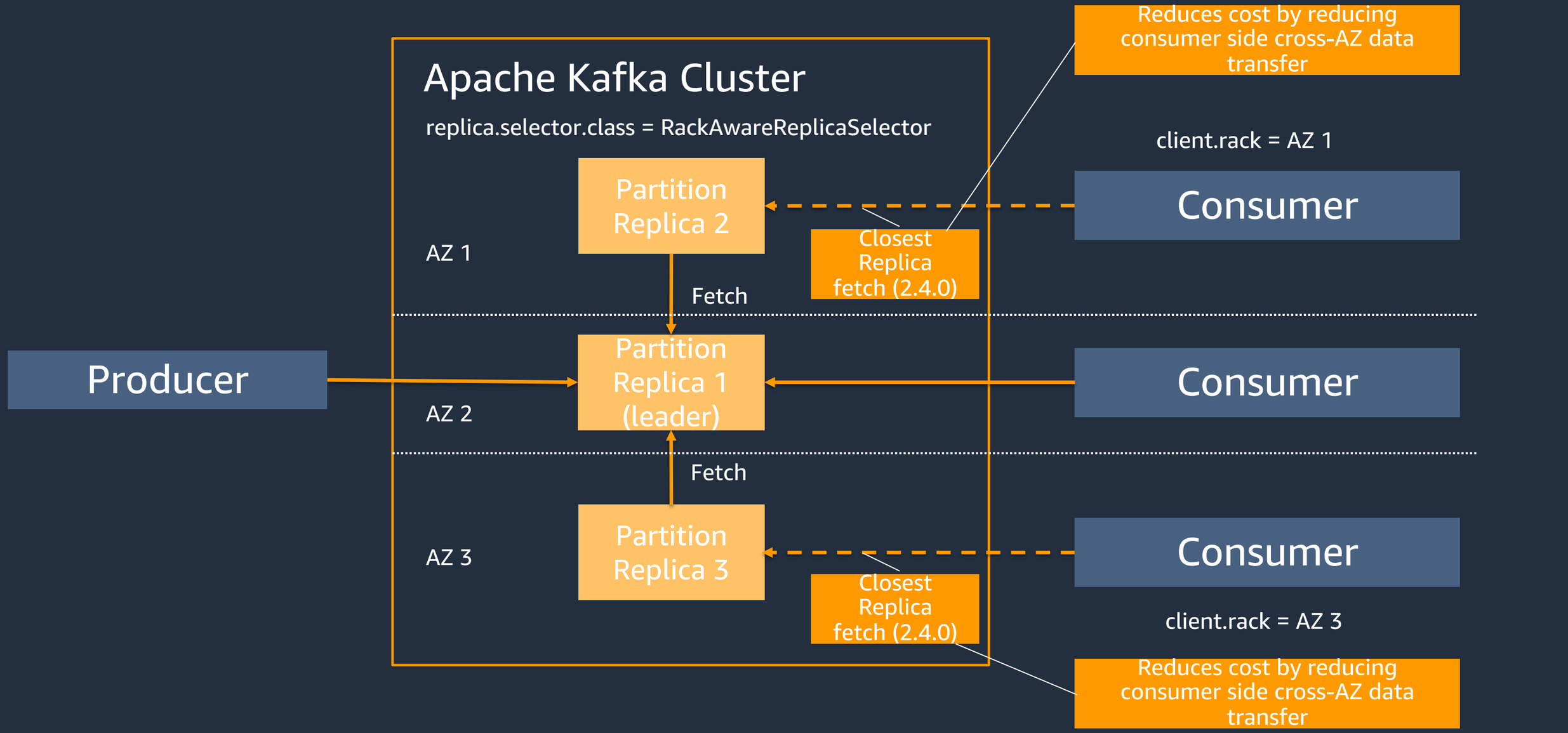
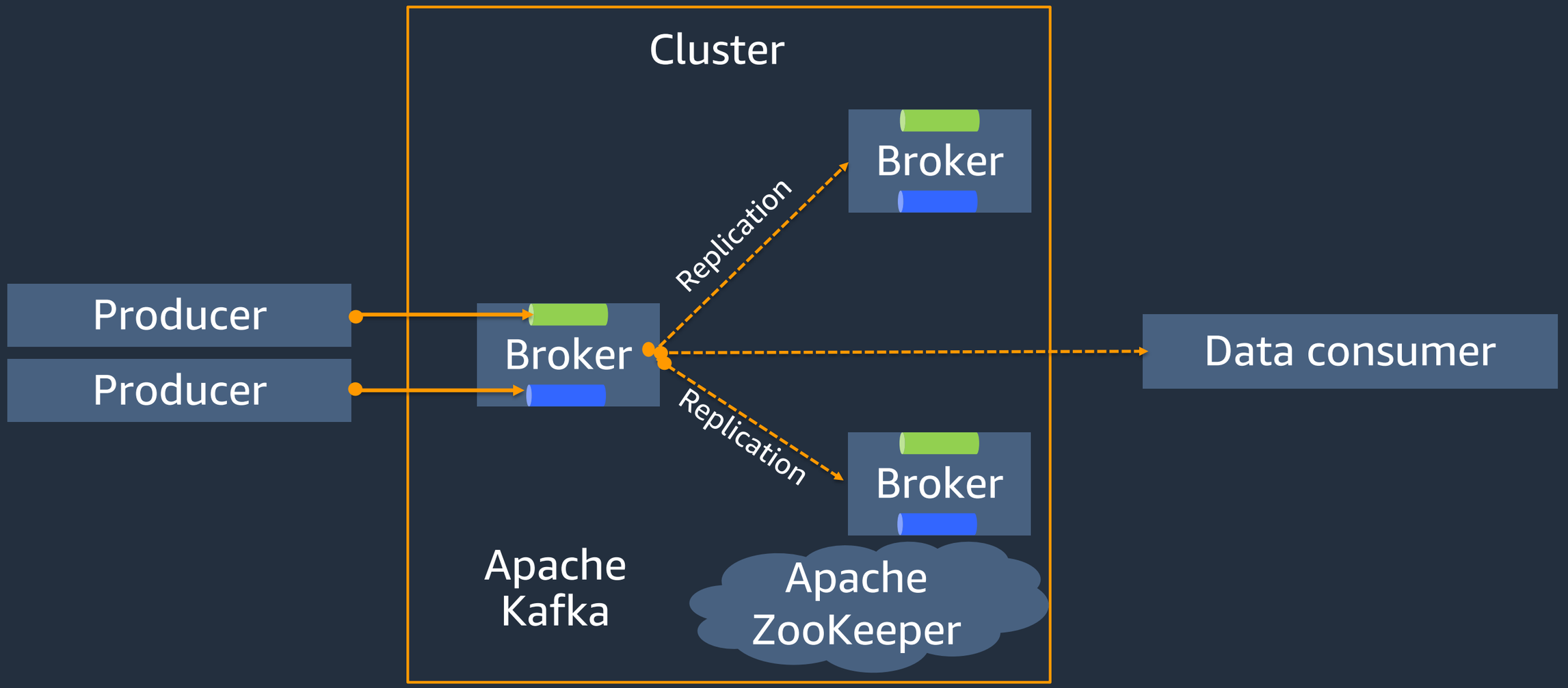
Apache Kafka anatomy 101: Replicas



Apache Kafka anatomy 101



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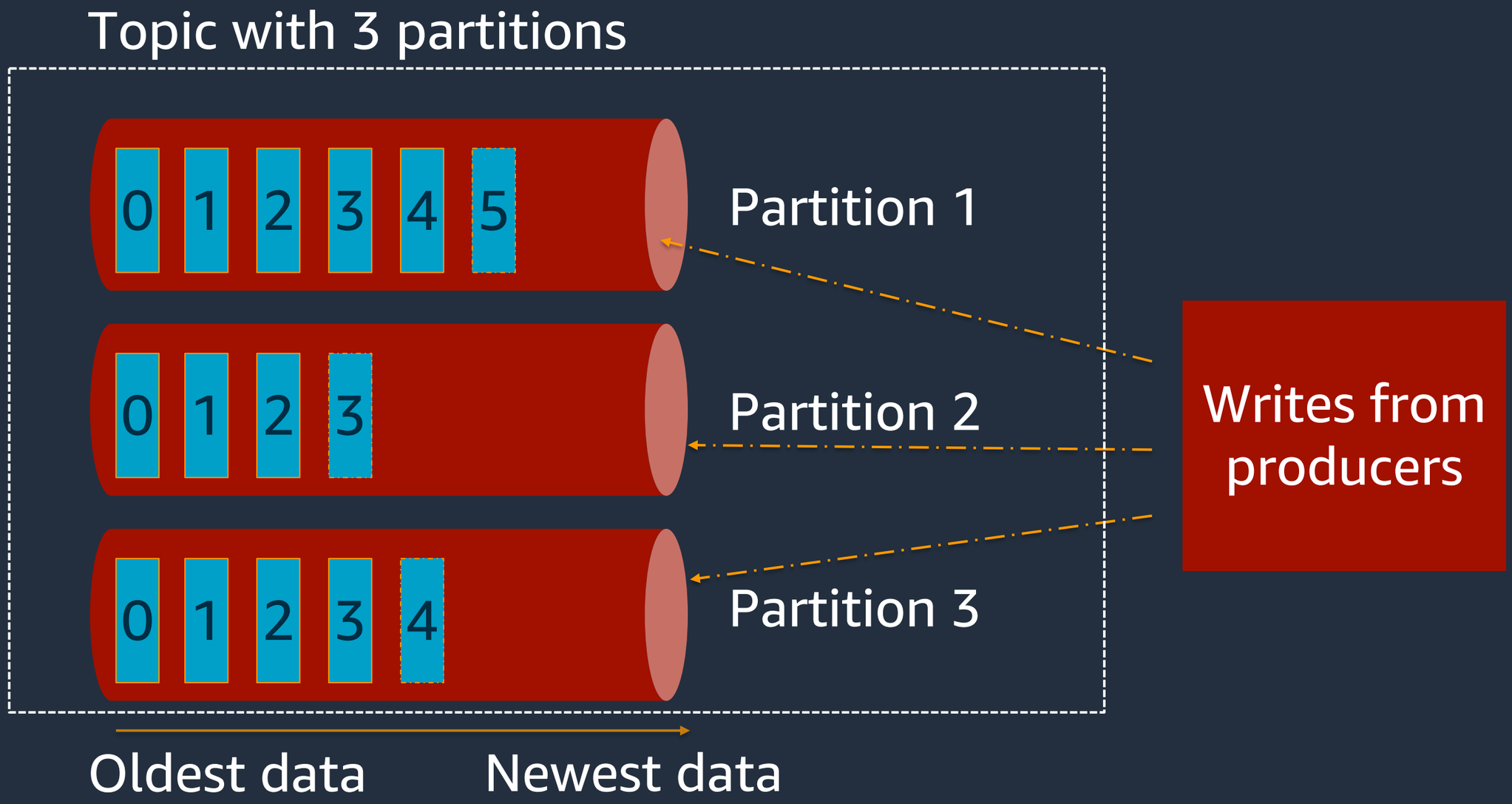
Apache Kafka anatomy: Writes to partitions



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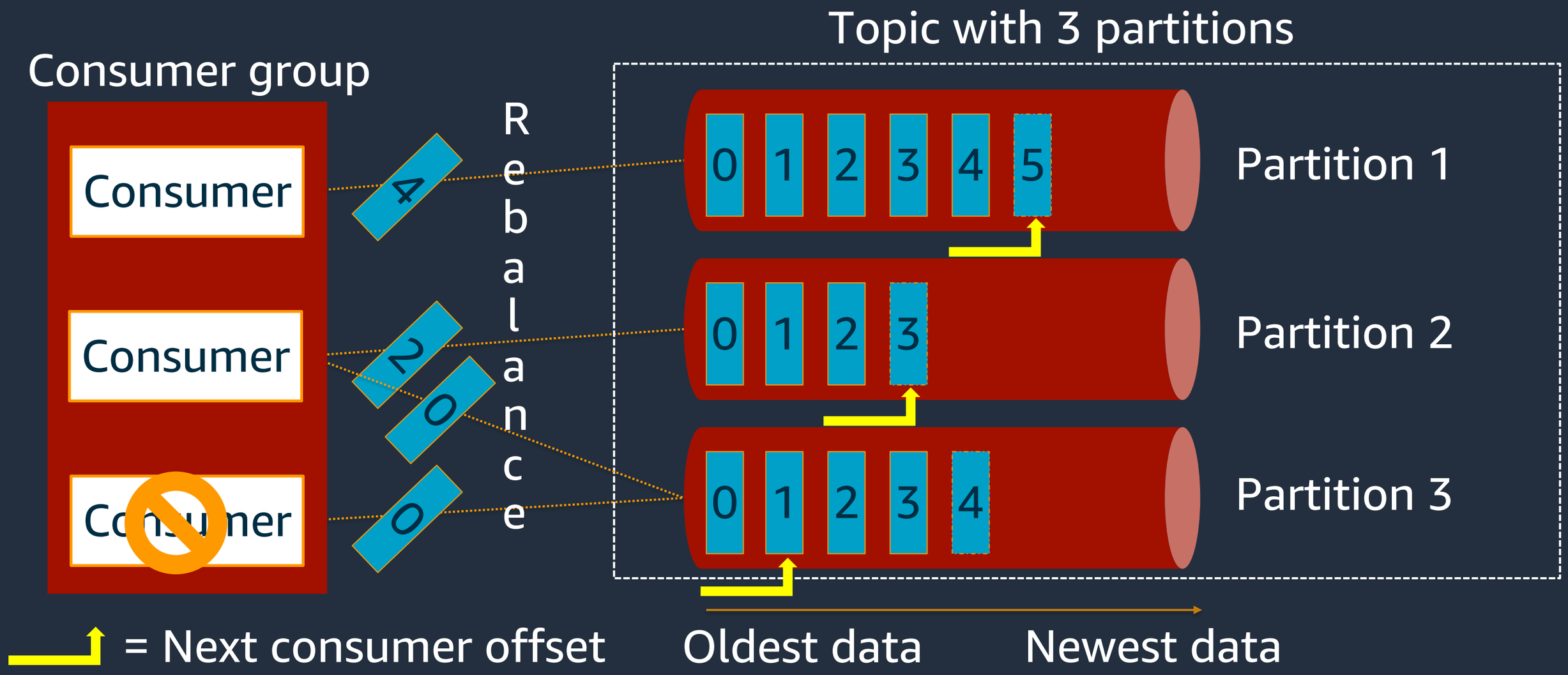
Apache Kafka anatomy: Reads from partitions



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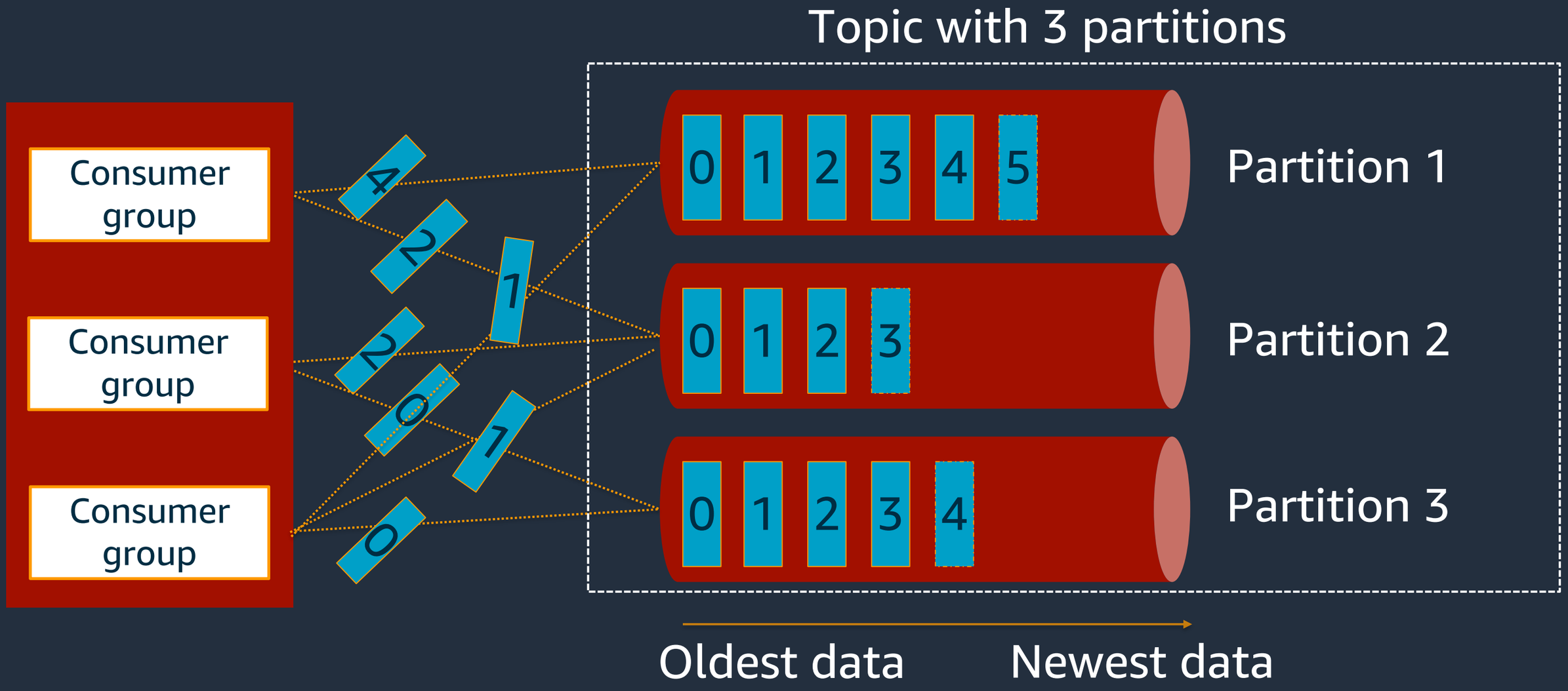
Apache Kafka in pub/sub mode: Reads from partitions



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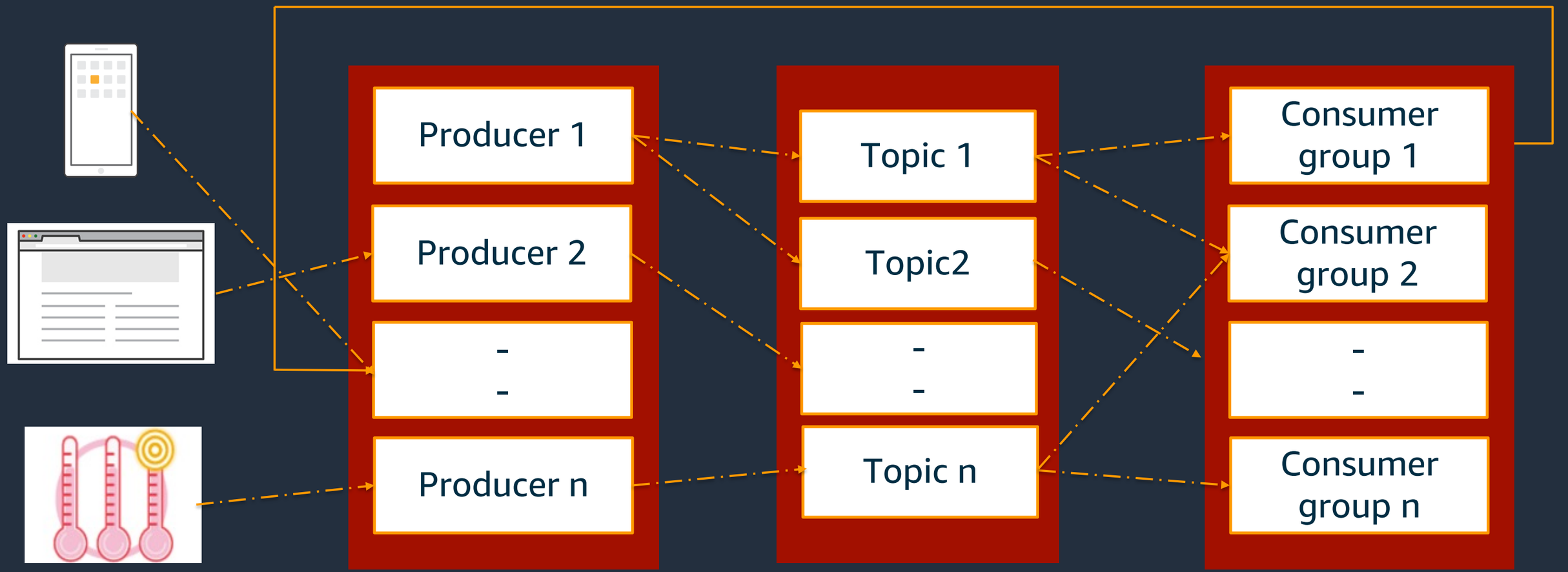
Apache Kafka in Event-driven Architecture



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Challenges operating Apache Kafka

Difficult to setup

Tricky to scale

Hard to achieve high availability

Integration required development

Error prone and complex to manage

Expensive to maintain

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Q & A

Thank You!

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