Message Queuing/Message Bus

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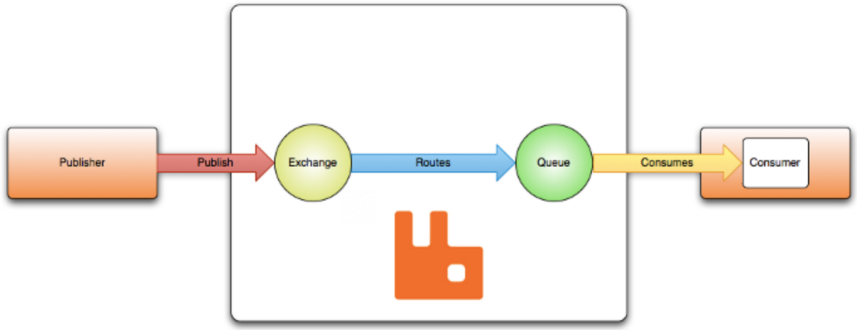
- Message Queuing allows applications to communicate by sending messages to each other. The message queue provides temporary message storage when the destination program is busy or not connected.

AMQP - Advanced Message Queuing Protocol



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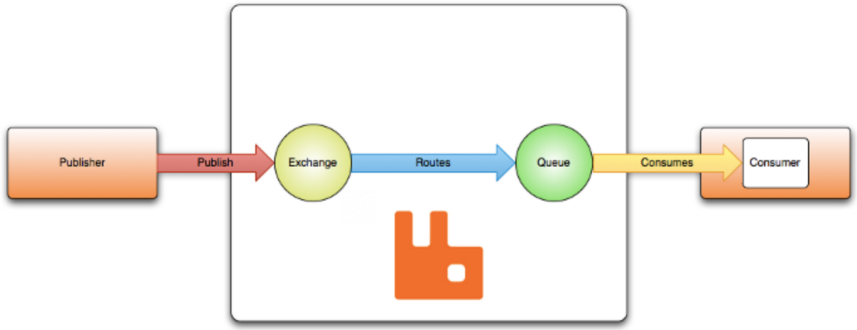

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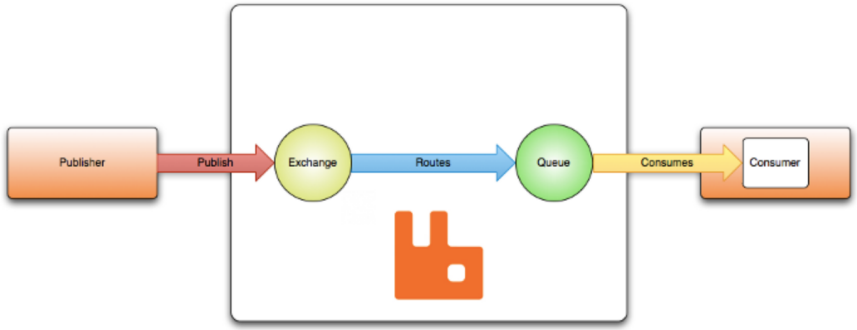

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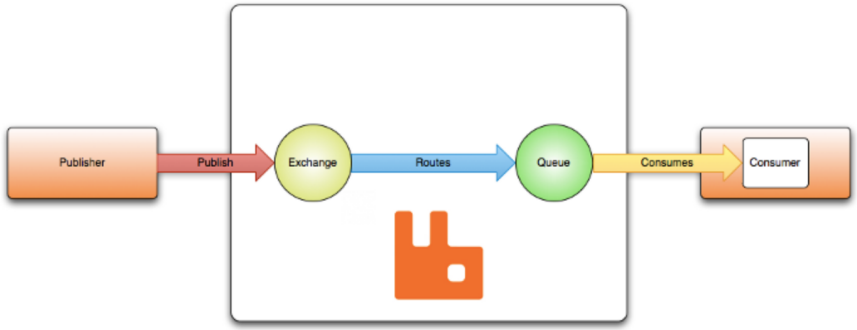

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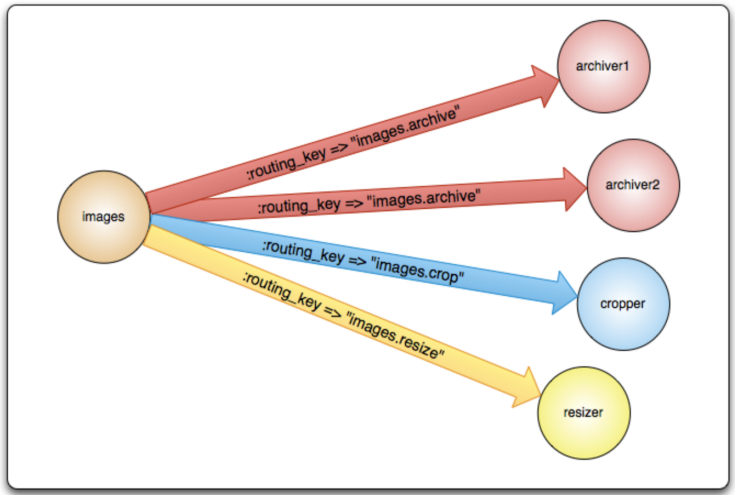
- messages are stored until a consumer receives a message and acknowledge

AMQP Direct Exchange



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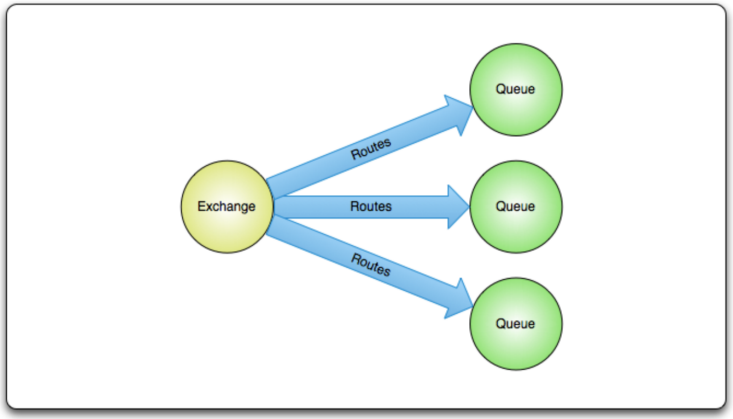

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- Fanout exchange (1-n mapping)

AMQP Direct Exchange

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- Headers exchange ('x-match' header based), ...

RabbitMQ scaling

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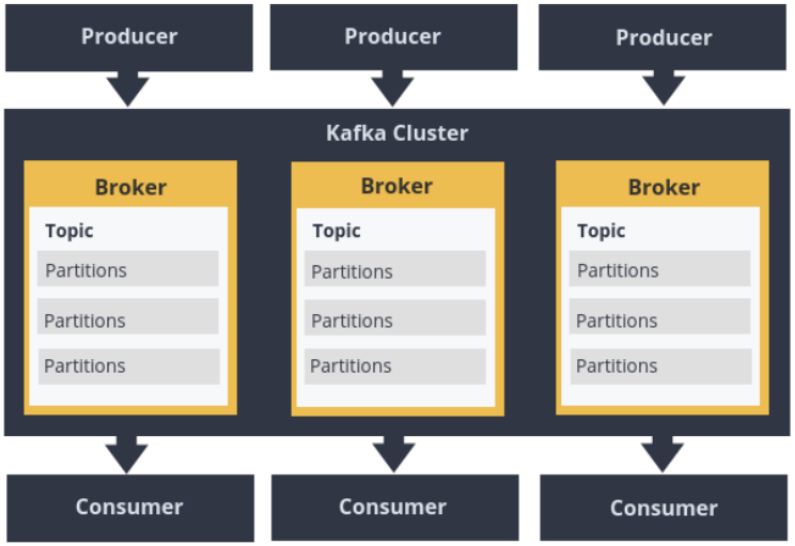
- Horizontal scaling of borker is possible with clustering but it's annowying setup

Kafka



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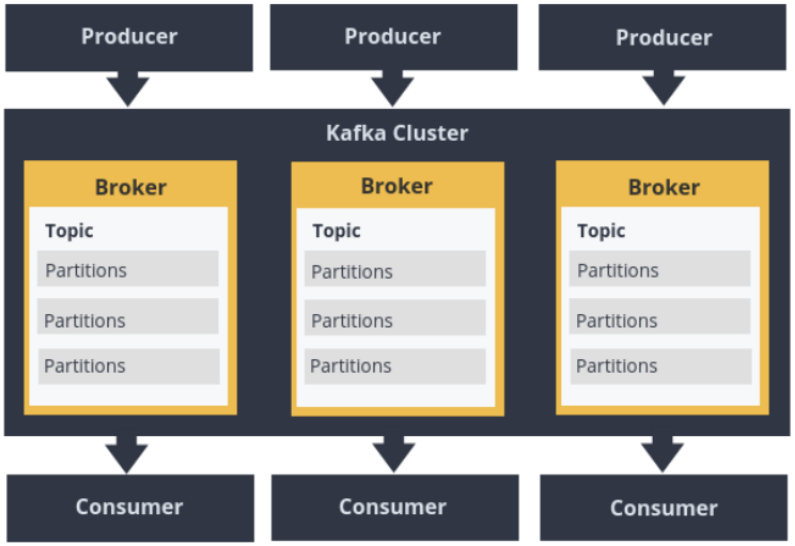

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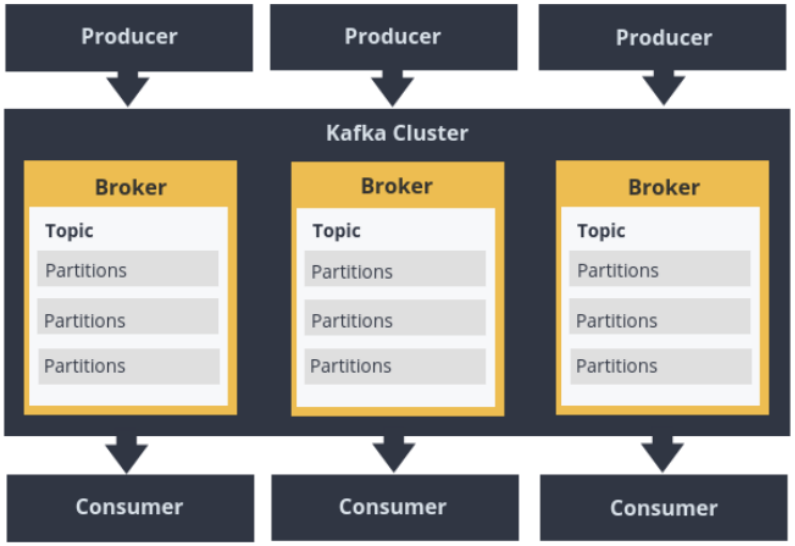

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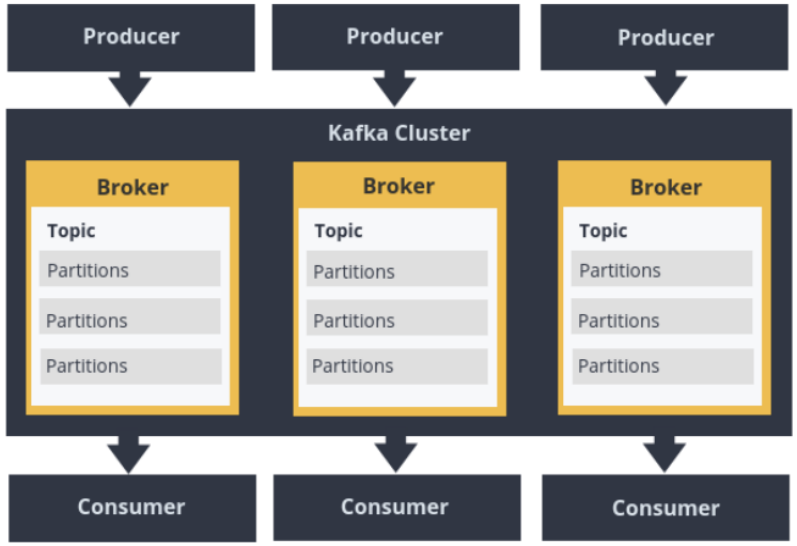

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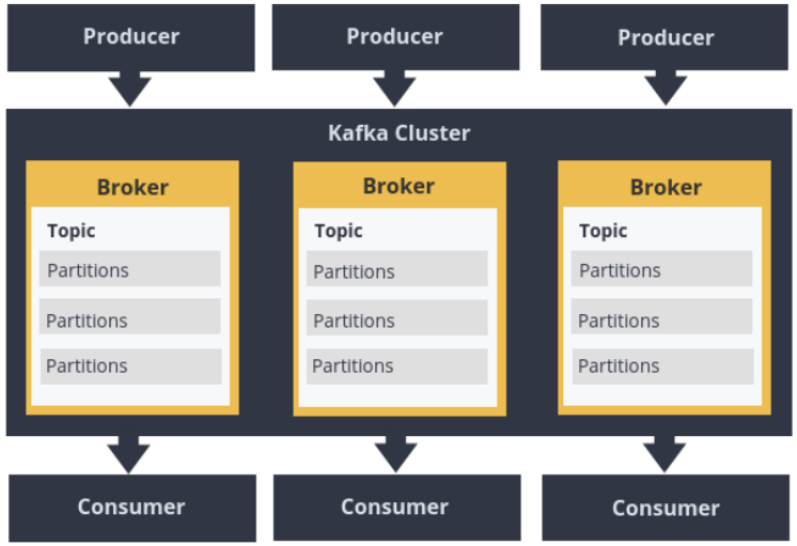

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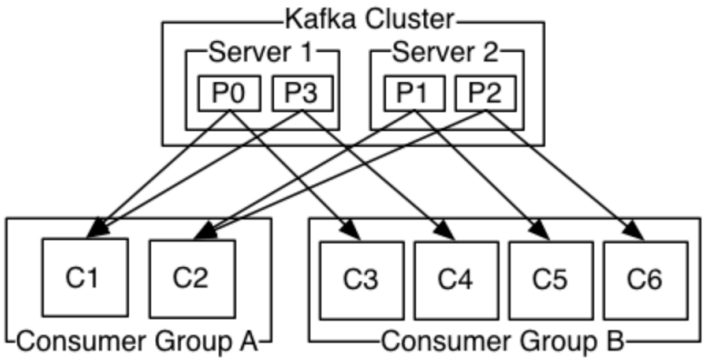

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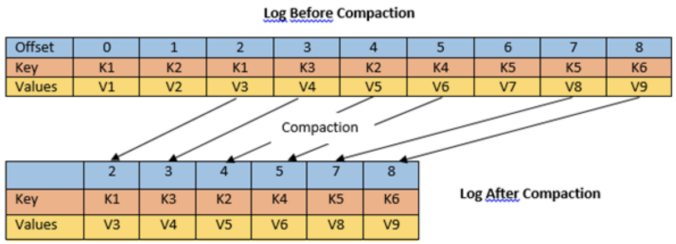

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- 2.0 Compact topics - In simple terms, Apache Kafka will keep latest version of a record and delete the older versions with same key

Kafka and beyond

- Kafka now is a distributed streaming platform
- Connect and Streams APIs
- Mirroring (old but very powerful feature)

Kinesis

- Kinesis was modeled after Kafka 0.8.0
- Not a streaming platform like kafka, it's just a message bus.
- Managed by AWS, uses shards instead of partition but similar concept