Apache Kafka

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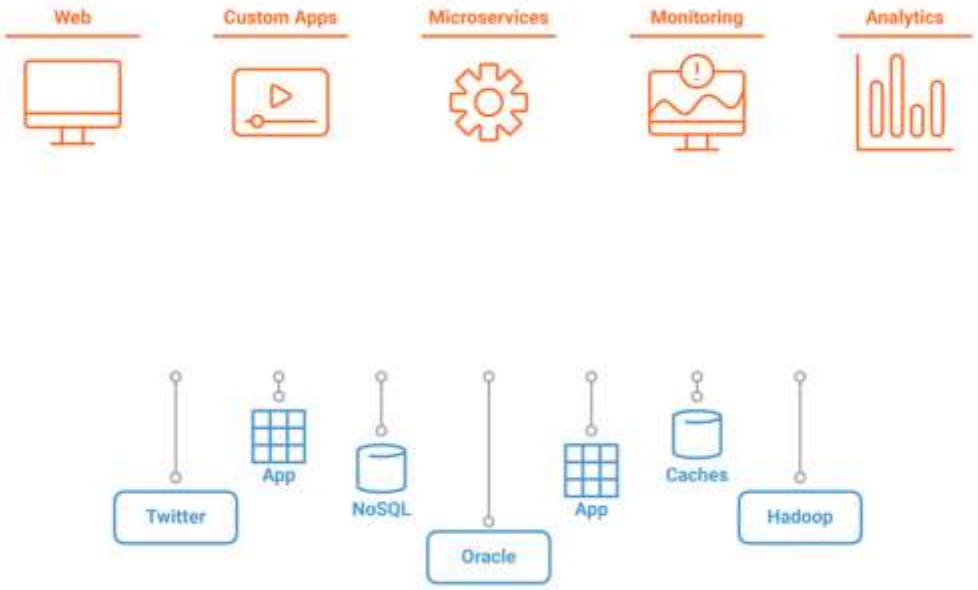
Apache Kafka

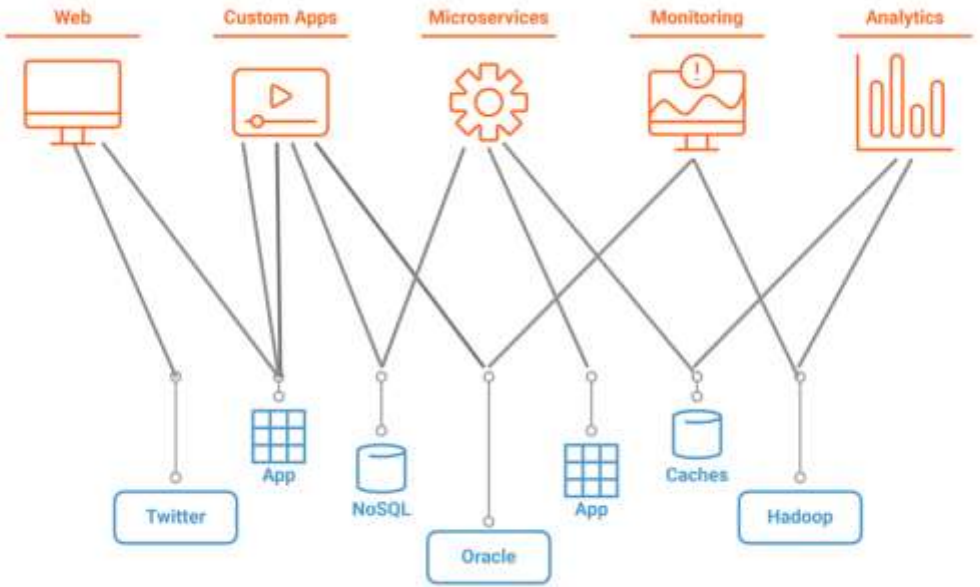
Apache Kafka® is *an open sourced distributed streaming platform*.

History

- Developed by LinkedIn / Microsoft
- Open sourced in early 2011
- Donated to Apache Software Foundation on 2012
- Latest release and stable version 2.5.0
- Written in Scala/ Java

Why Kafka?


Web
Custom Apps
Microservices
Monitoring
Analytics
Twitter
App
NoSQL
Oracle
App
Caches
Hadoop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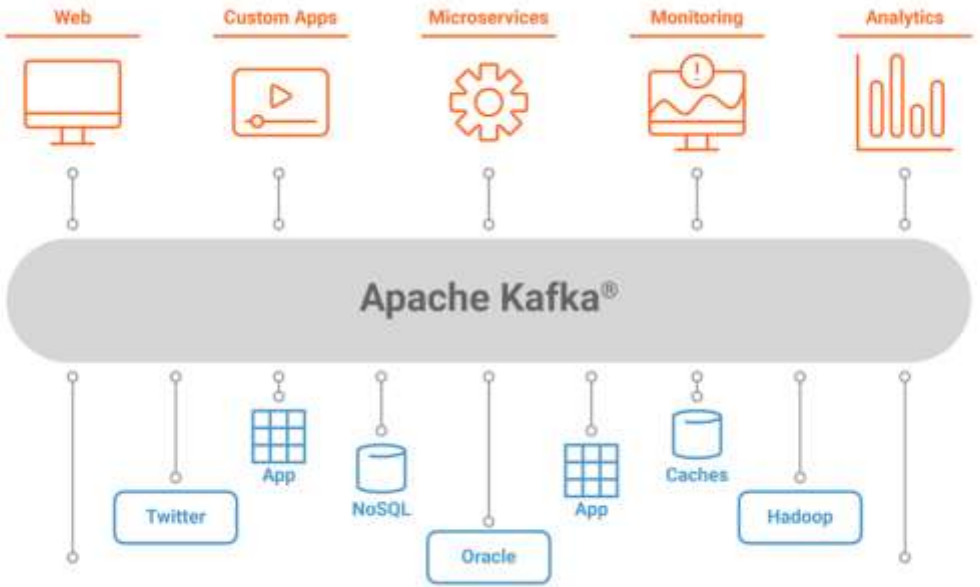
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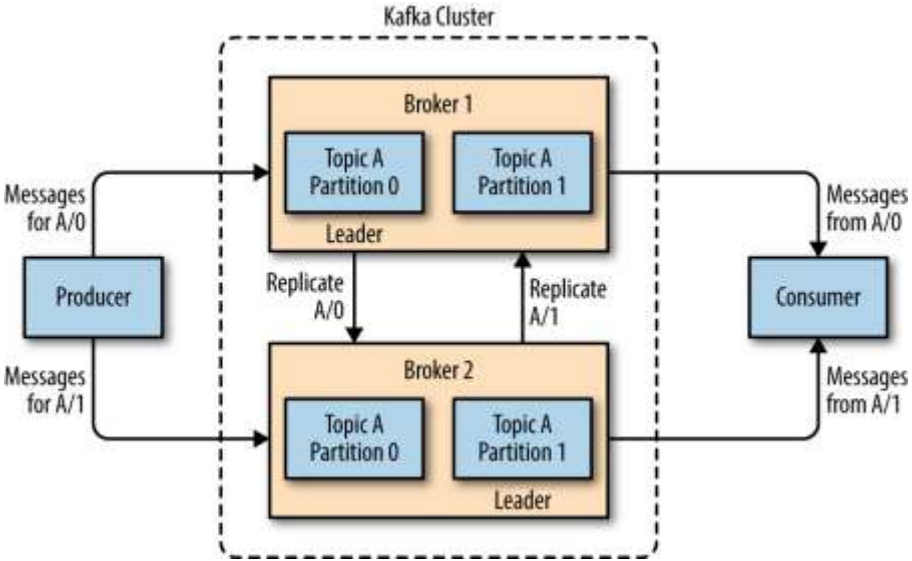
Major Features

- Kafka as Messaging System
- Kafka for Stream Processing

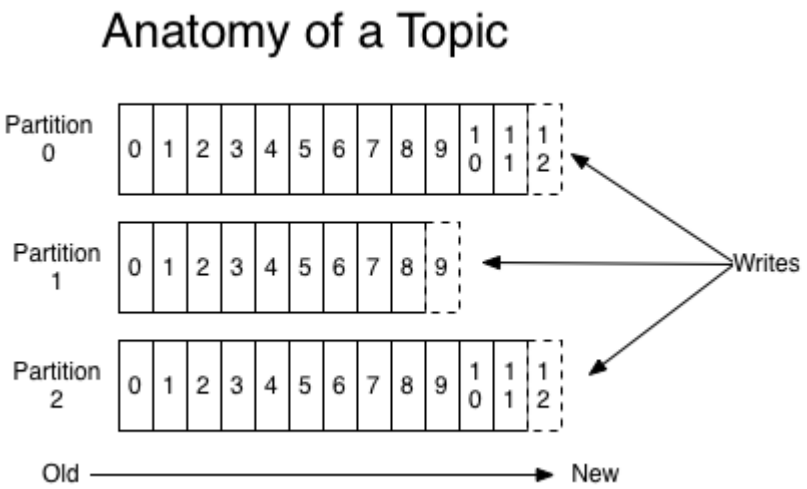
Core Components

- Zookeeper
  - Core dependency as of version 2.5.0
- Broker
  - Kafka server
- Producer
  - Produces message to topic partition
- Consumer
  - Listens to topic partition
- Topic
  - Partition



Topic

- A topic can have one or more partitions
- Topics are always multi-subscriber
- **Partitions (logs)**:
  - One leader and zero or more followers
  - Distributed

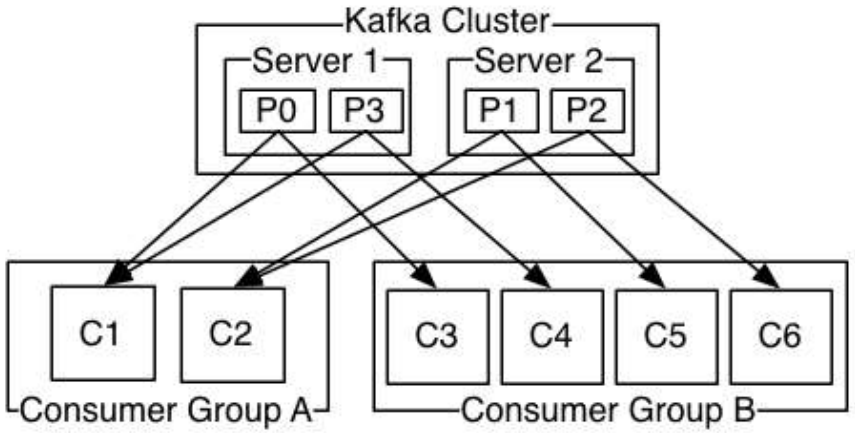


Producer

- Produce message to a topic
- Select topic partition
- Normally, uses round-robin technique to balance load

Consumer

- Consumer listens to one or more topics
- Consumer belongs to a **consumer group**
- Only on consumer from a consumer group can consume message from a topic partition.
- **Rebalancing**
  - More consumers in a group than partition means **idle** consumers



Example

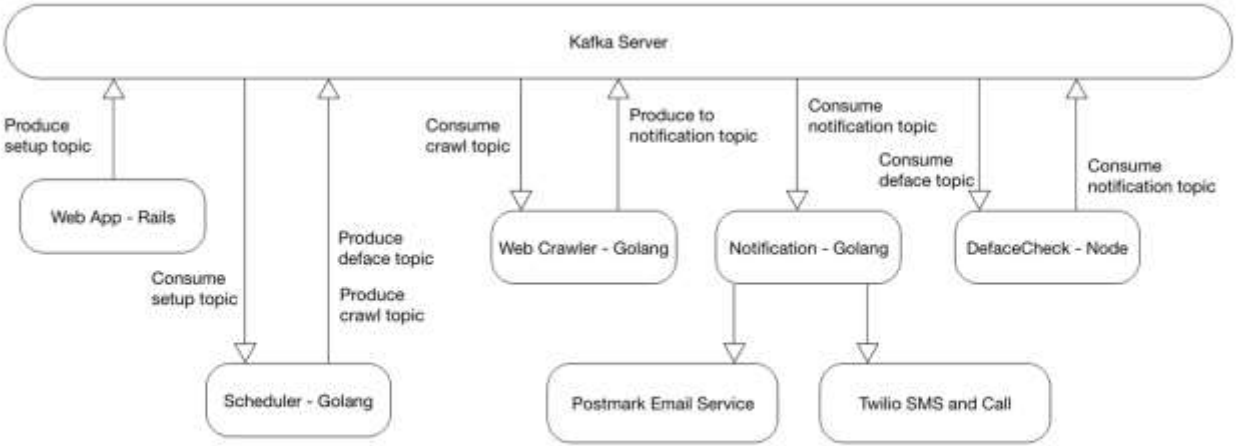
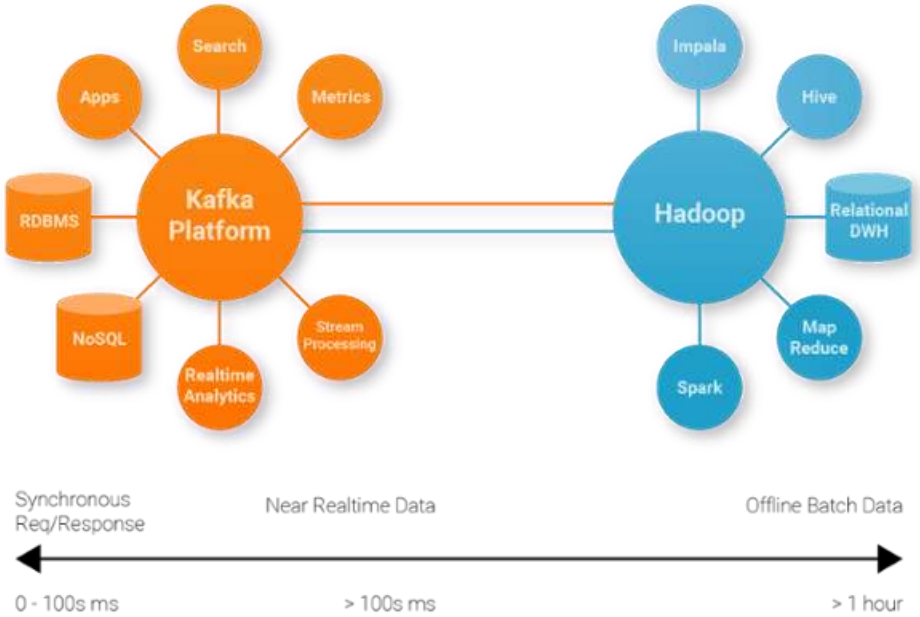


Fig. SiteHawk.io - microservices architecture

Kafka and BigData

- Process existing big data
  - Sitting on HDFS
  - Sitting in a database
- How does new data get into your cluster?
  - New log from web servers
  - New sensor data from IoT systems
  - New stock trades
- Use for data ingestion in Hadoop system

Kafka and Hadoop Ecosystem



Questions?

Thank you!