Apache Kafka

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Apache Kafka is an open-source stream processing platform developed by the Apache Software Foundation written in Scala and Java. The project aims to provide a unified, high-throughput, low-latency platform for handling real-time data feeds. Its storage layer is essentially a "massively scalable pub/sub message queue architected as a distributed transaction log,"[3] making it highly valuable for enterprise infrastructures to process streaming data. Additionally, Kafka connects to external systems (for data import/export) via Kafka Connect and provides Kafka Streams, a Java stream processing library.

The design is heavily influenced by transaction logs.[4]

Apache Kafka [1]

Developer(s)	Apache Software Foundation
Initial release	January 2011[2]
Stable release	0.10.2.1 / April 26, 2017
Repository	git-wip-us.apache.org/repos/asf/kafka.git
Development status	Active
Written in	Scala, Java
Operating system	Cross-platform
Type	Stream processing, Message broker
License	Apache License 2.0
Website	kafka.apache.org

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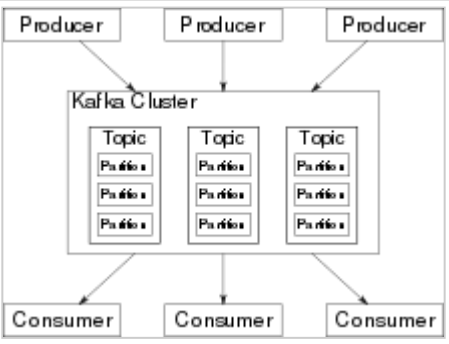
History

Apache Kafka was originally developed by LinkedIn, and was subsequently open sourced in early 2011. Graduation from the Apache Incubator occurred on 23 October 2012. In November 2014, several engineers who worked on Kafka at LinkedIn created a new company named Confluent[5] with a focus on Kafka. It was named by Jay Kreps after the author Franz Kafka, since it is "a system optimized writing" and he liked Kafka's work.[6]

Description



Overview of Kafka

Kafka stores Messages which come from arbitrary many Processes called "Producers". The Data can thereby be partitioned in different "partitions" within different "topics". Within a partition the messages are indexed and stored together with a timestamp. Other processes called "Consumers" can query messages from partitions. Kafka runs on a cluster of one or more servers and the partitions can be distributed across cluster nodes.

Kafka performance

Due to its widespread integration into enterprise-level infrastructures, monitoring Kafka performance at scale has become an increasingly important issue. Monitoring end-to-end performance requires tracking metrics from brokers, consumer, and producers, in addition to monitoring ZooKeeper which is used by Kafka for coordination among consumers.[7][8] There are currently several monitoring platforms to track Kafka performance, either open-source, like LinkedIn's Burrow, or paid, like Datadog. In addition to these platforms, collecting Kafka data can also be performed using tools commonly bundled with Java, including JConsole.[9]

Enterprises that use Kafka

The following is a list of notable enterprises that have used or are using Kafka:

- Betfair[10]
- Cisco Systems[11]
- CloudFlare[12]
- Conviva[13]
- Daumkakao[14]
- eBay[15]
- Hyperledger Fabric[16]
- HubSpot[17]
- Netflix[18]
- PayPal[19]
- Shopify[20]
- Sift Science[21]
- Spotify[22]
- Ticketmaster[23]
- Uber[24]
- Walmart[25]

See also

- Apache ActiveMQ
- Apache Flink
- Apache Qpid
- Apache Samza
- Apache Spark Streaming
- Data Distribution Service
- Enterprise Integration Patterns
- Enterprise messaging system
- Streaming analytics
- Event-driven SOA
- Message-oriented middleware
- Service-oriented architecture
- StormMQ

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External links

- Apache Kafka website
- Discussion of project's design
- Github mirror
- Apache Kafka presentation by Morten Kjetland
- LinkedIn open sourcing announcement

Categories: Enterprise application integration | Free software | Free software programmed in Scala | Java platform | Message-oriented middleware | Service-oriented architecture-related products

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