Discussão do artigo: "**Kafka: a Distributed Messaging System for Log Processing**" by Kreps, Jay, Neha Narkhede, and Jun Rao. NetDB 2011, pp. 1–7. 2011

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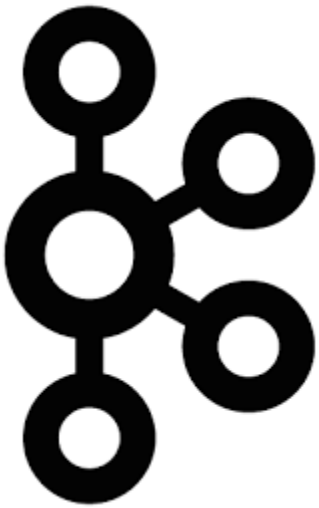
October 7, 2016

What is Kafka?



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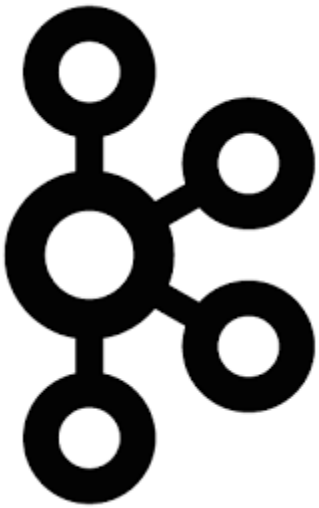

- A distributed messaging system for handling high amount of data in near real-time.
- It focuses on applications that require high-throughput data event processing.

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- Lack of support to batch multiples messages into a single request
- The difficult to partition and to store messages on multiple machines
- The performance of existing messaging systems usually degrades when there are a high volume of message to be consumed

What is the architecture of Kafka?

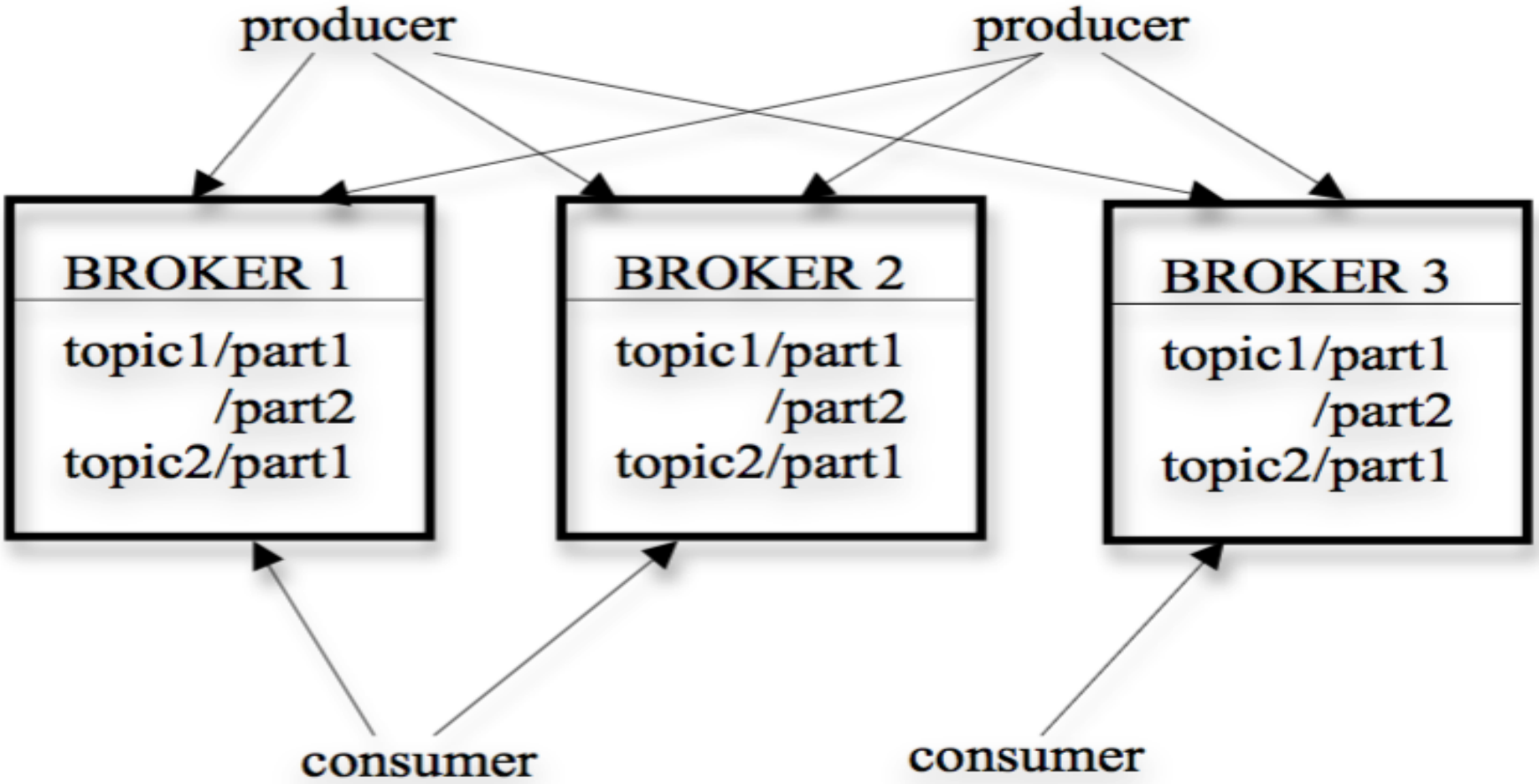

Figure 1: Kafka architecture

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- Kafka supports **point-to-point** and **publish/subscribe** delivery models.

Talk is cheap. Show me the code.

— Linus Torvalds

This is an example of the code of a producer

```
1  producer = new Producer (...)
2  message = new Message("Hello world!".getBytes())
3
4  set = new MessageSet(message)
5  producer.send("topic1", set)
```

This is an example of the code of a consumer

```
1    streams = new Consumer.createMessageStreams("topic1",
         1)
2    for (message: streams)
3      doSomethingWith(message)
```

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- Kafka uses **retention policy** to determine when a message must be deleted.
- Implementing a **pull bash** approach makes easy to a consumer deliberately rewinds to an old offset and re-consume the data.

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- Kafka stores a **cyclic redundancy check** (CRC) for each message in order **to avoid data corruption**.

These design decisions allow Kafka to have good performance

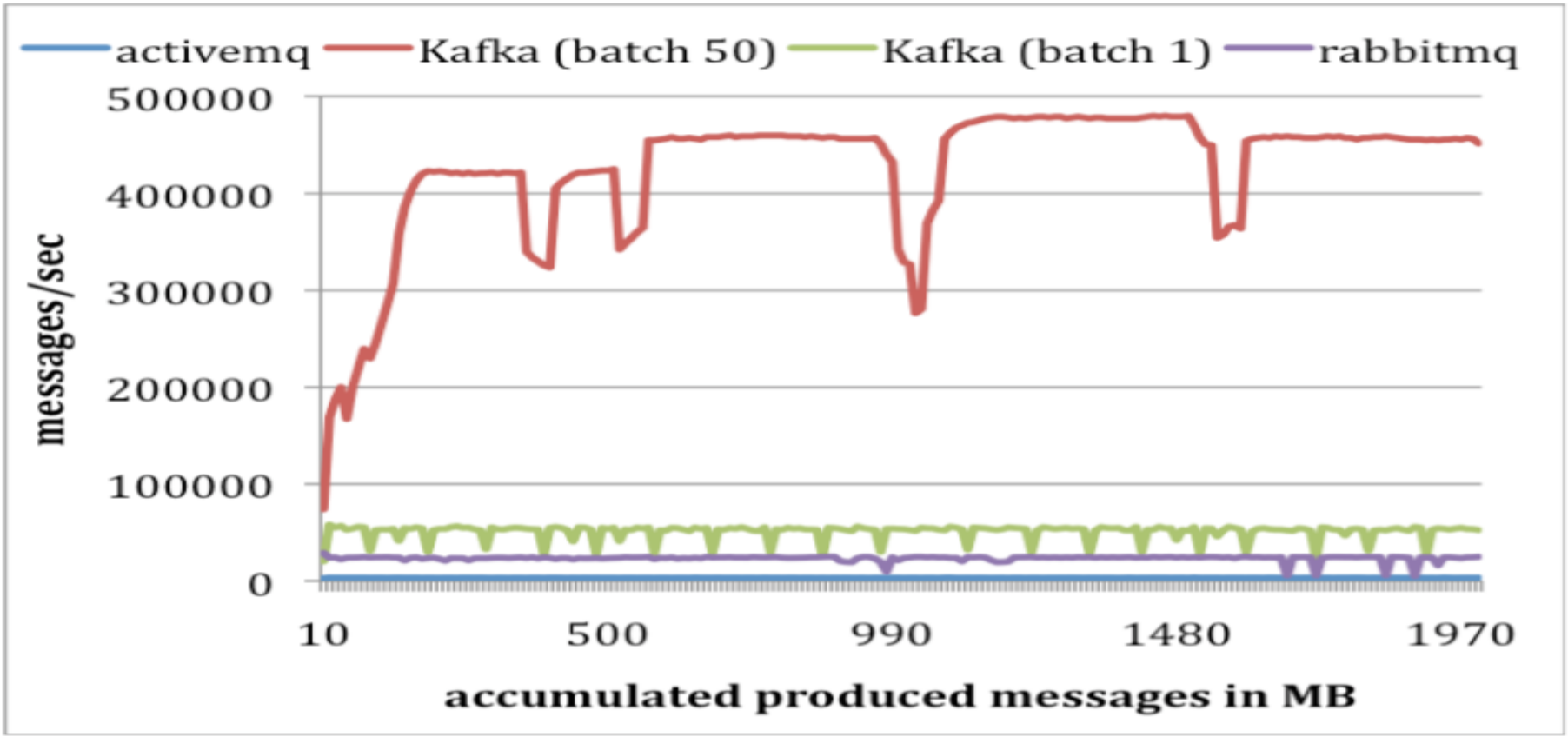

Figure 2: Produce performance

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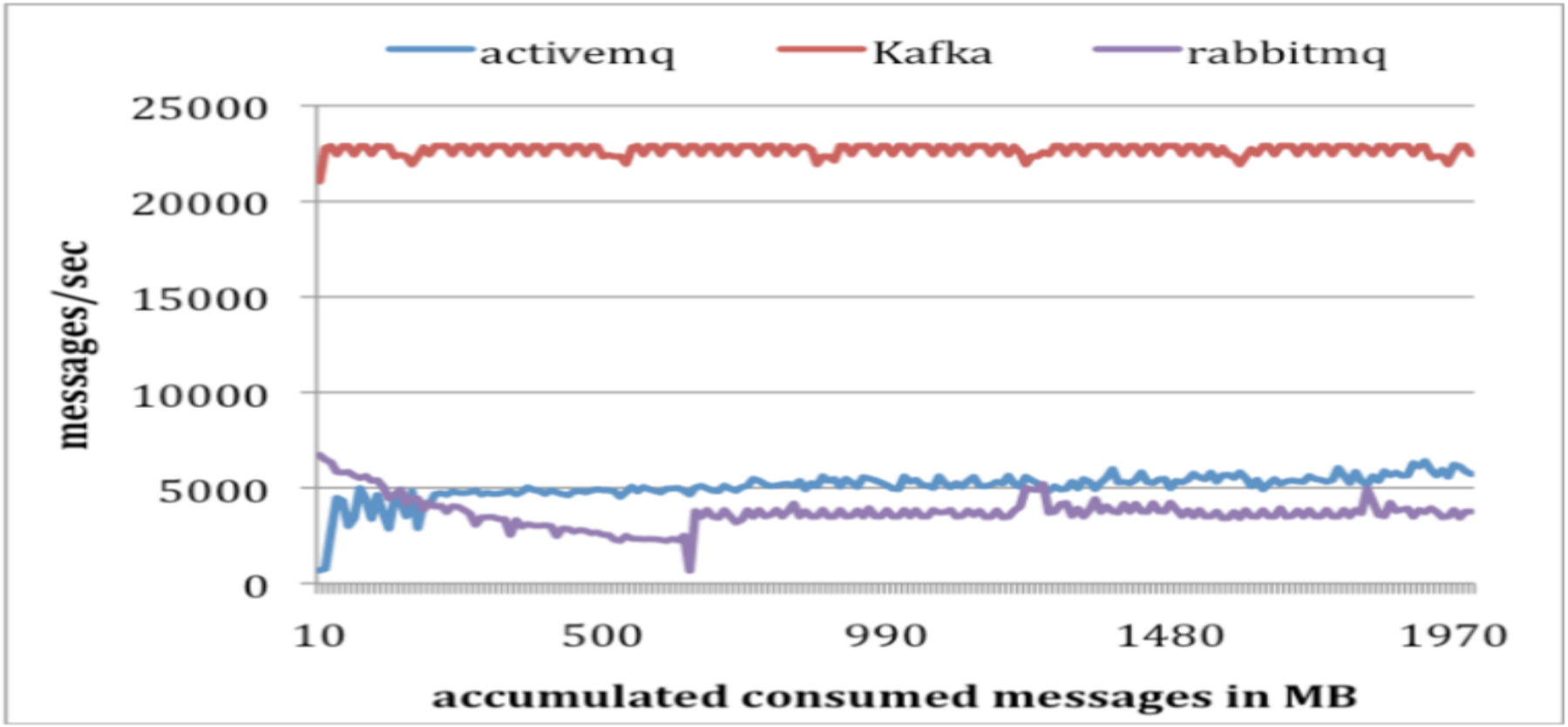

Figure 3: Consumer performance

That's all Folks!