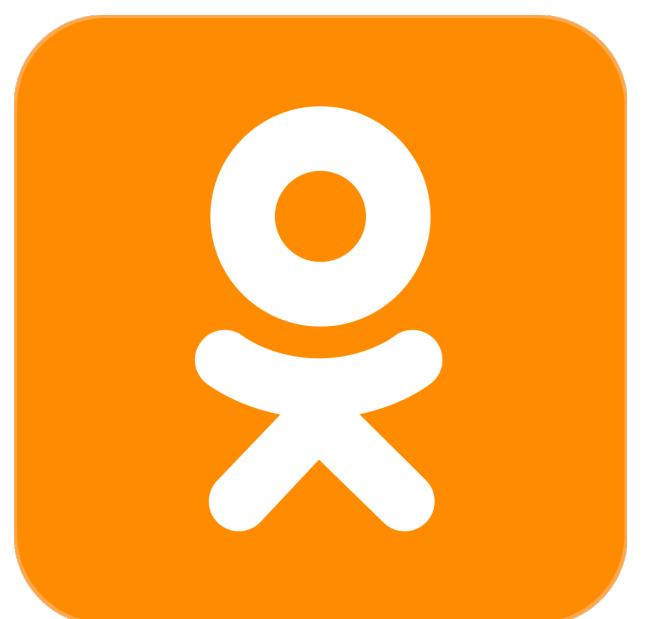


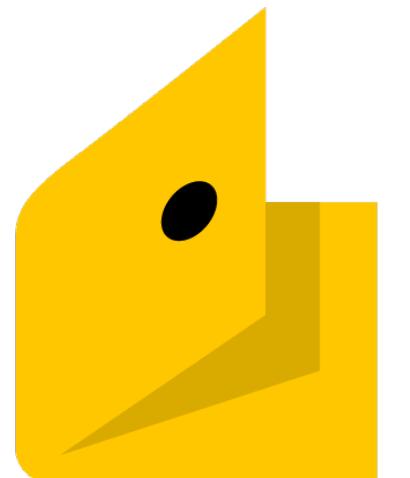
**Любители пощекотать топики
или разработка событийно ориентированных систем с
помощью кафка**

Скobelев Григорий



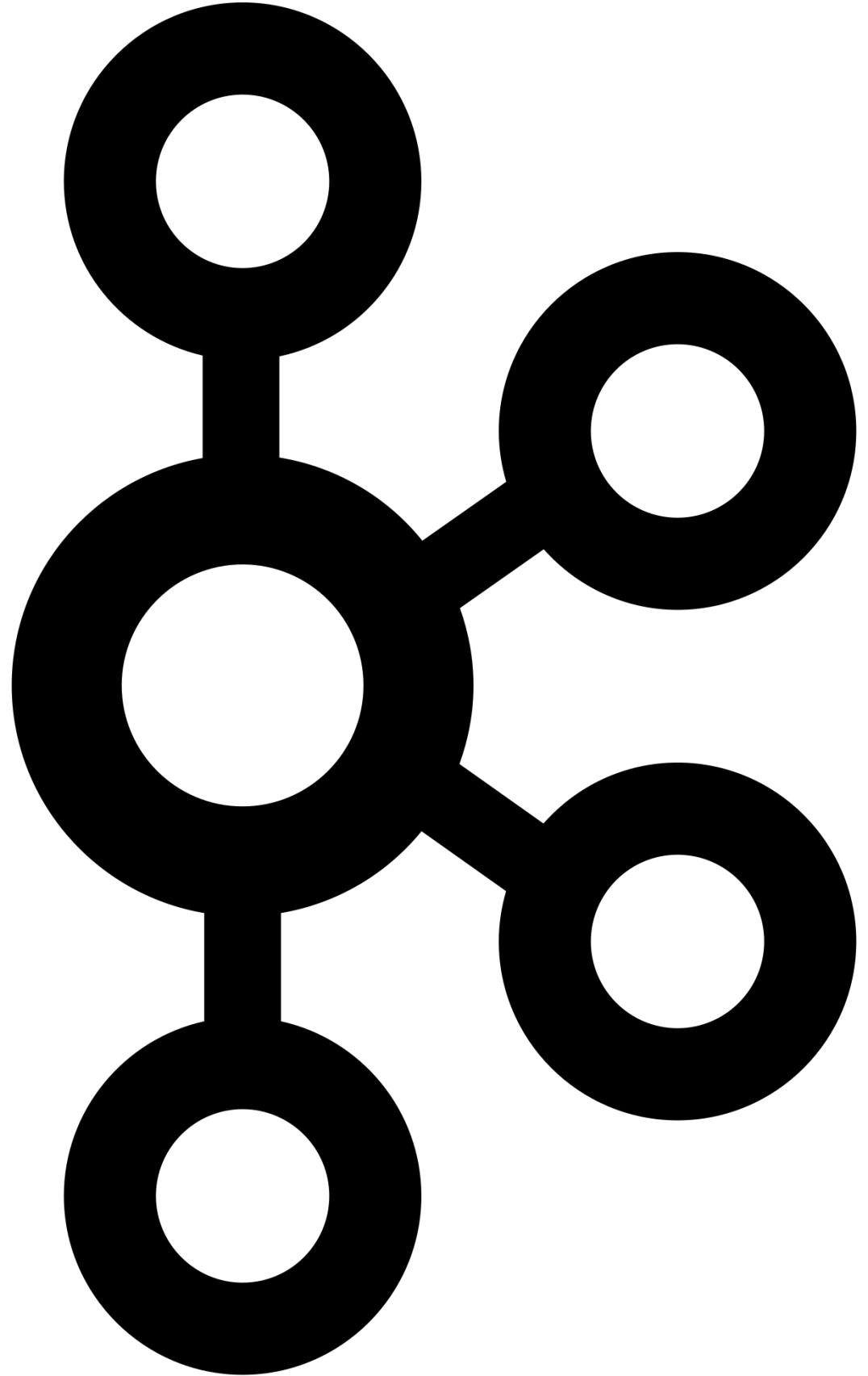
nexign

Яндекс

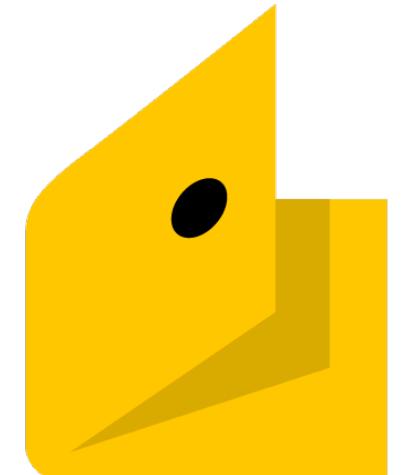




nexign



Яндекс



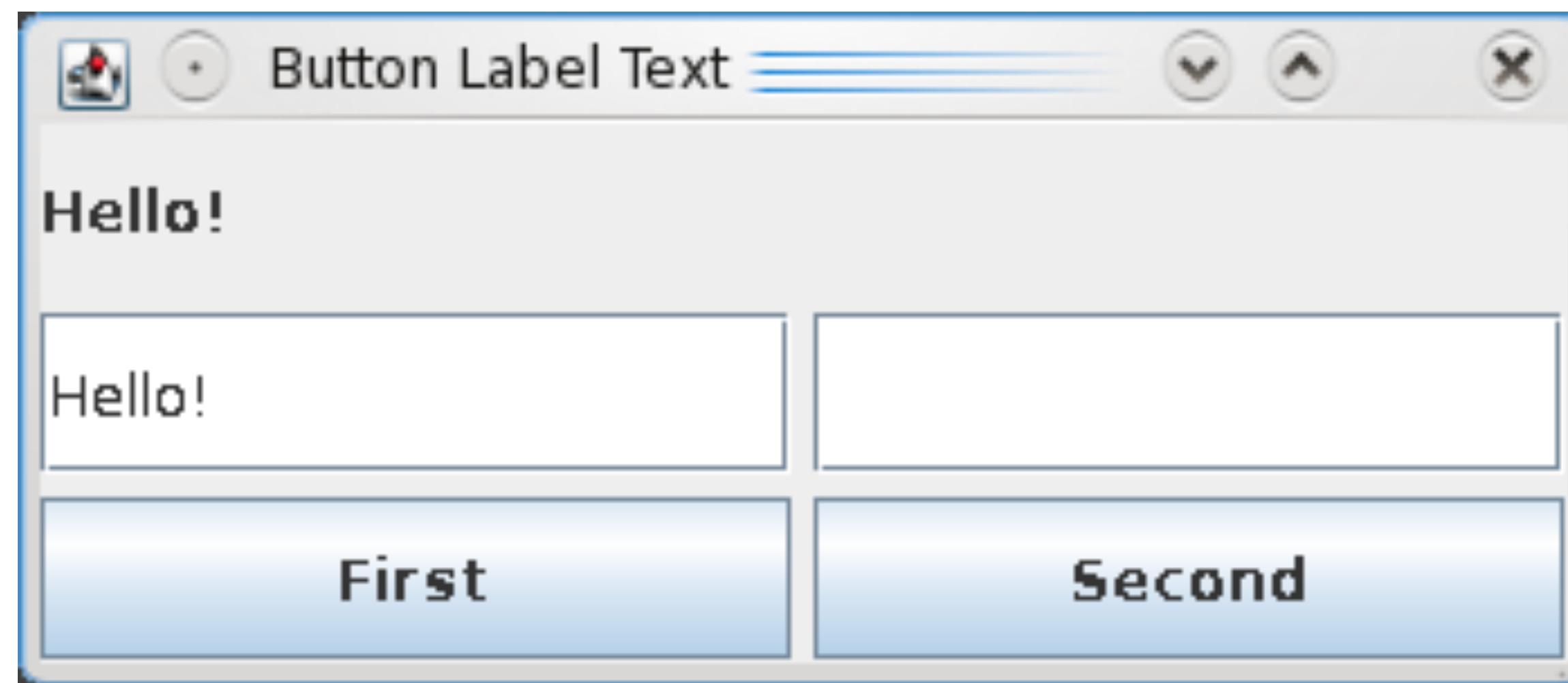
План

- Событийно ориентированные системы
- Архитектура Kafka
- Экосистема Kafka
- Тестирование Kafka приложений

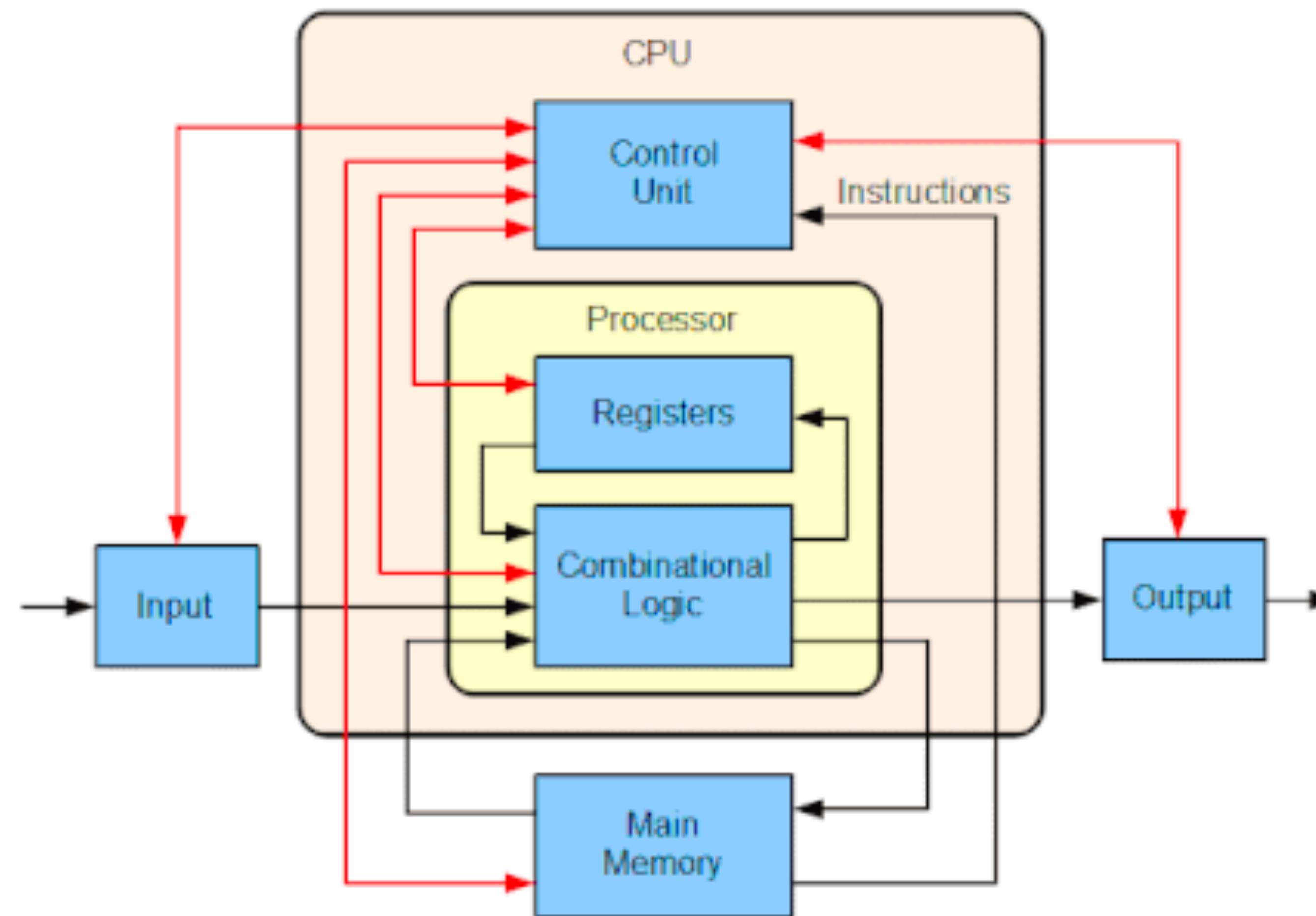
Событийно ориентированные системы

- Парадигма программирования
- Реализация паттерна publisher/subscriber
- Основой является события
- Захват, обмен, обработка, сохранение событий

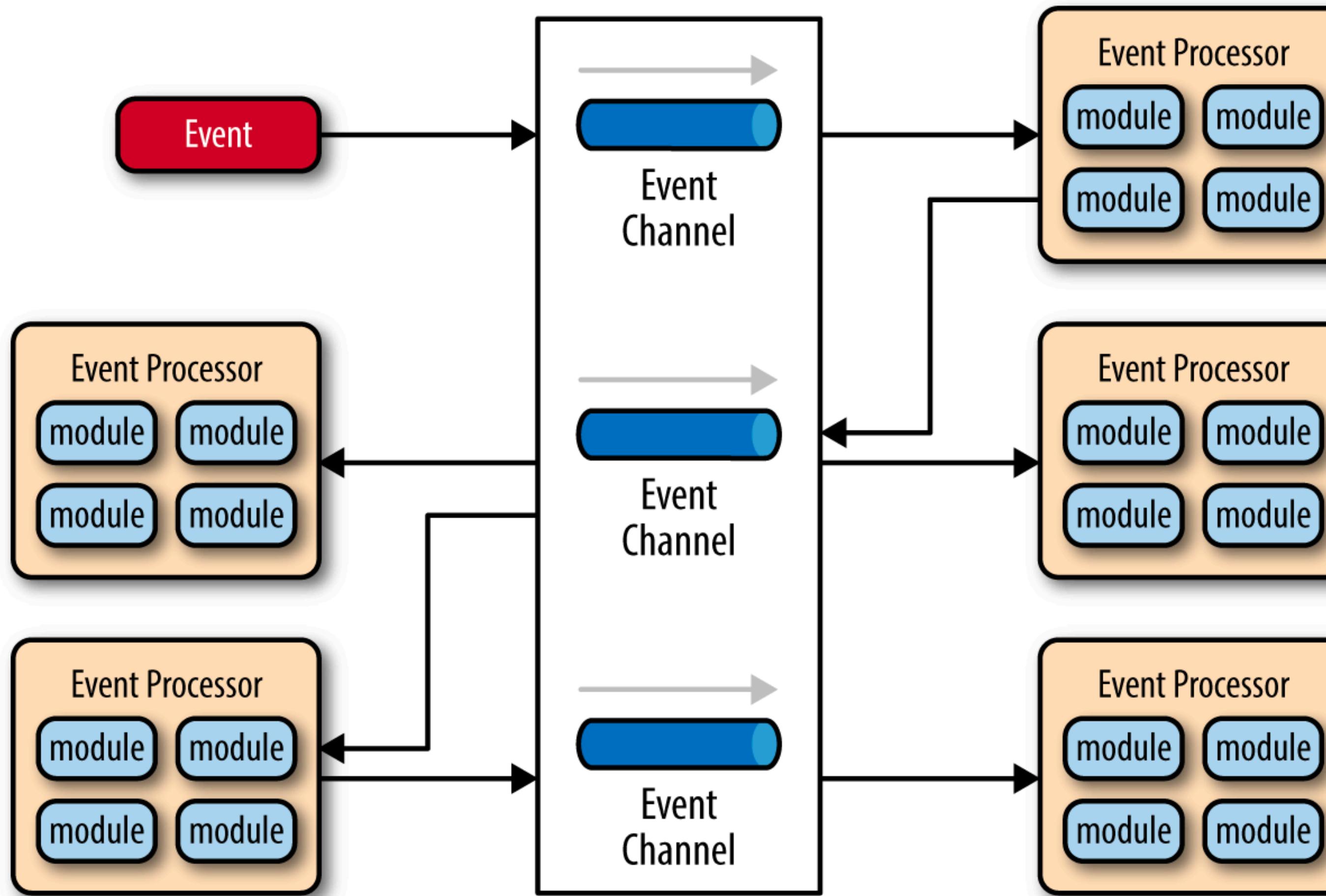
Событийно ориентированные системы



Событийно ориентированные системы



Событийно ориентированные системы



Событийно ориентированные системы

Примеры использования

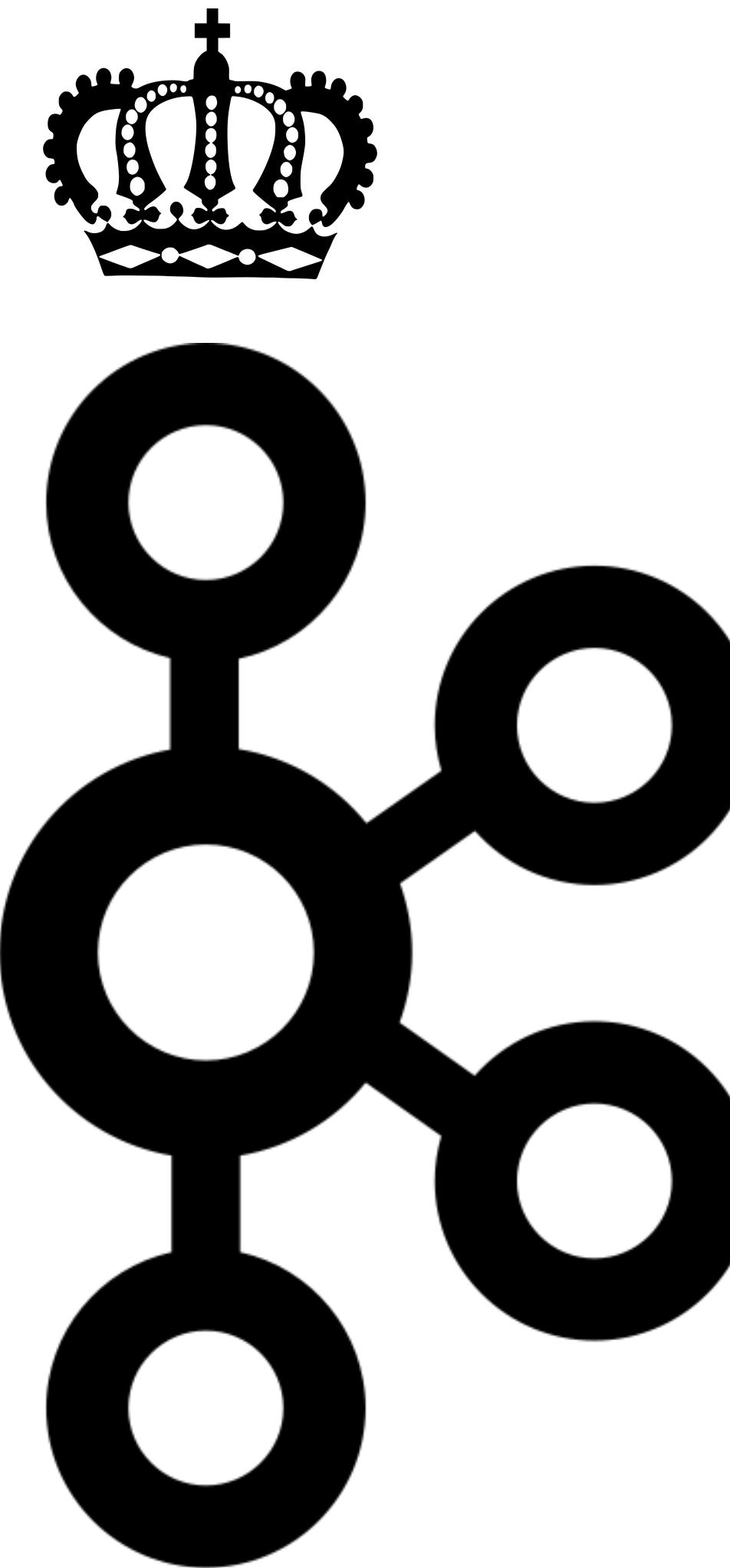
- Обмен сообщениями
- Метрики/Логирование
- Конвейерная обработка
- Источник событий/Хранение данных

Событийно ориентированный подход

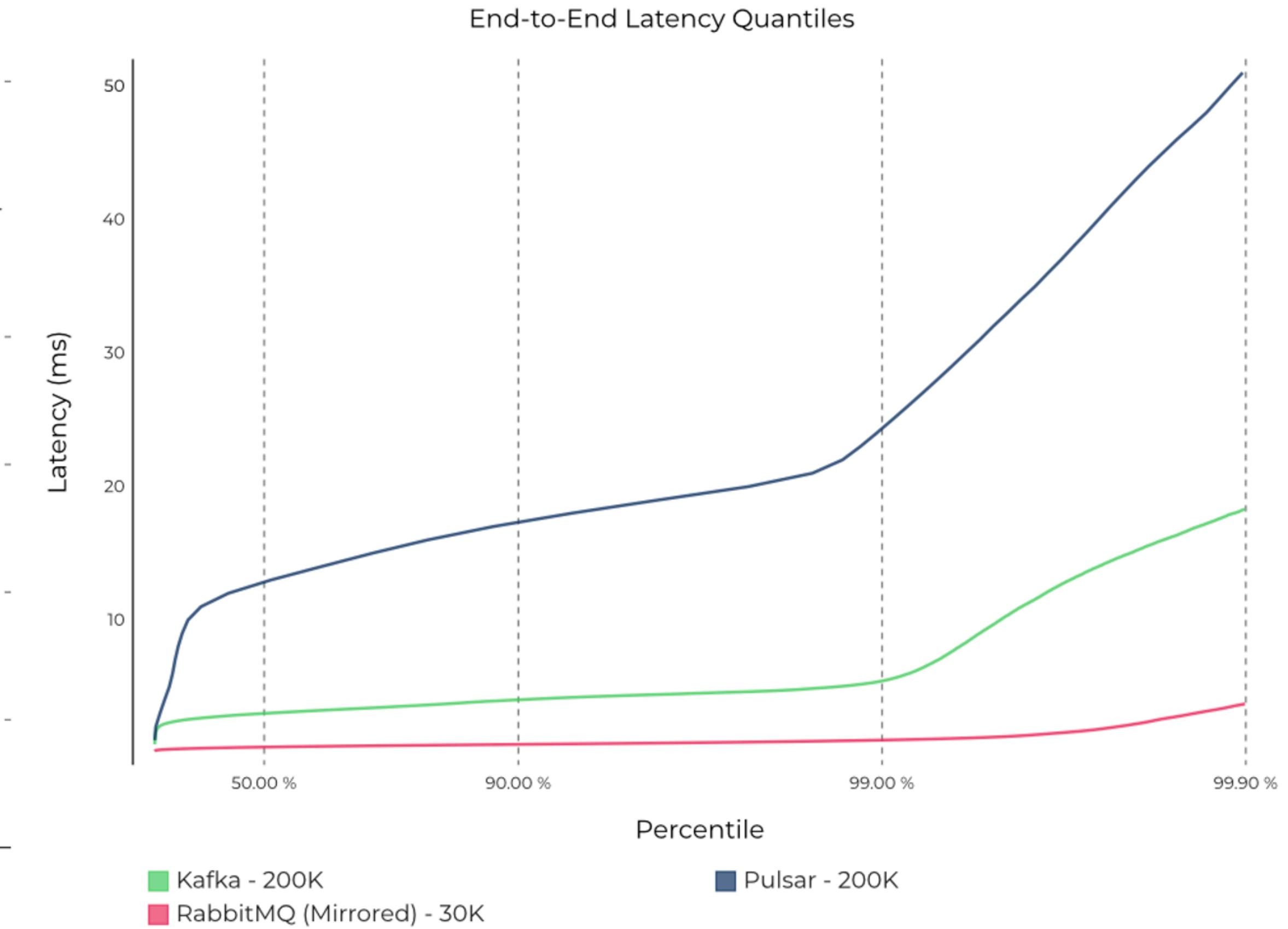
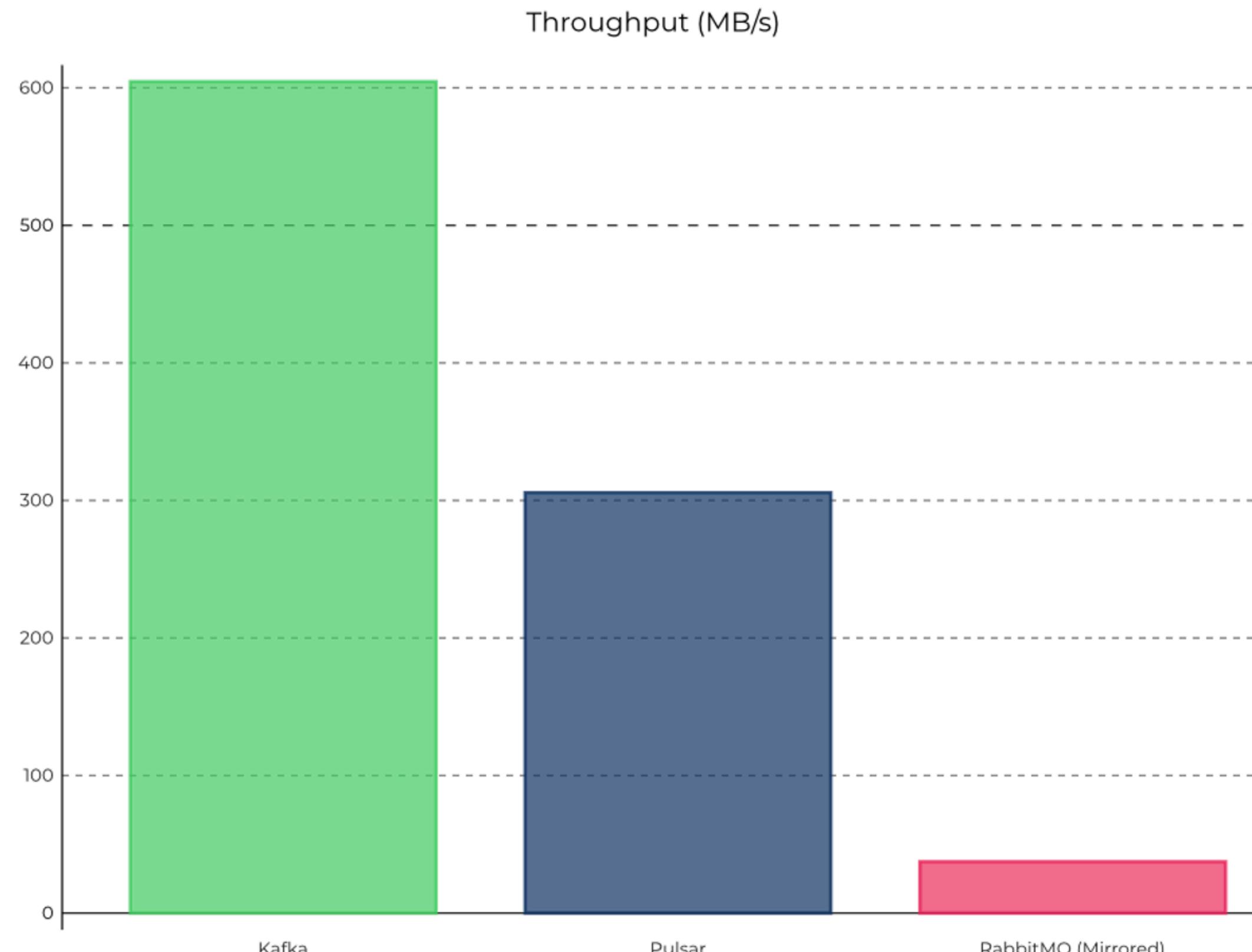
Преимущества

- Слабая связь между компонентами
- Неблокирующие запросы
- Масштабирование
- Отказоустойчивость

Примеры брокеров сообщений



Примеры брокеров сообщений



https://www.confluent.io/blog/kafka-fastest-messaging-system/?mkt_tok=eyJPljoiWVRNMIpXWTFNekI4TkRnNSIsInQiOiJQRUVRRGorZUhIVEV4K09ic0xwWEk1ejNjN0IGd0JnM21LNkEwR3pQU3dySWJIU2s1aGdmdEZOcENTeG5RS

Примеры брокеров сообщений

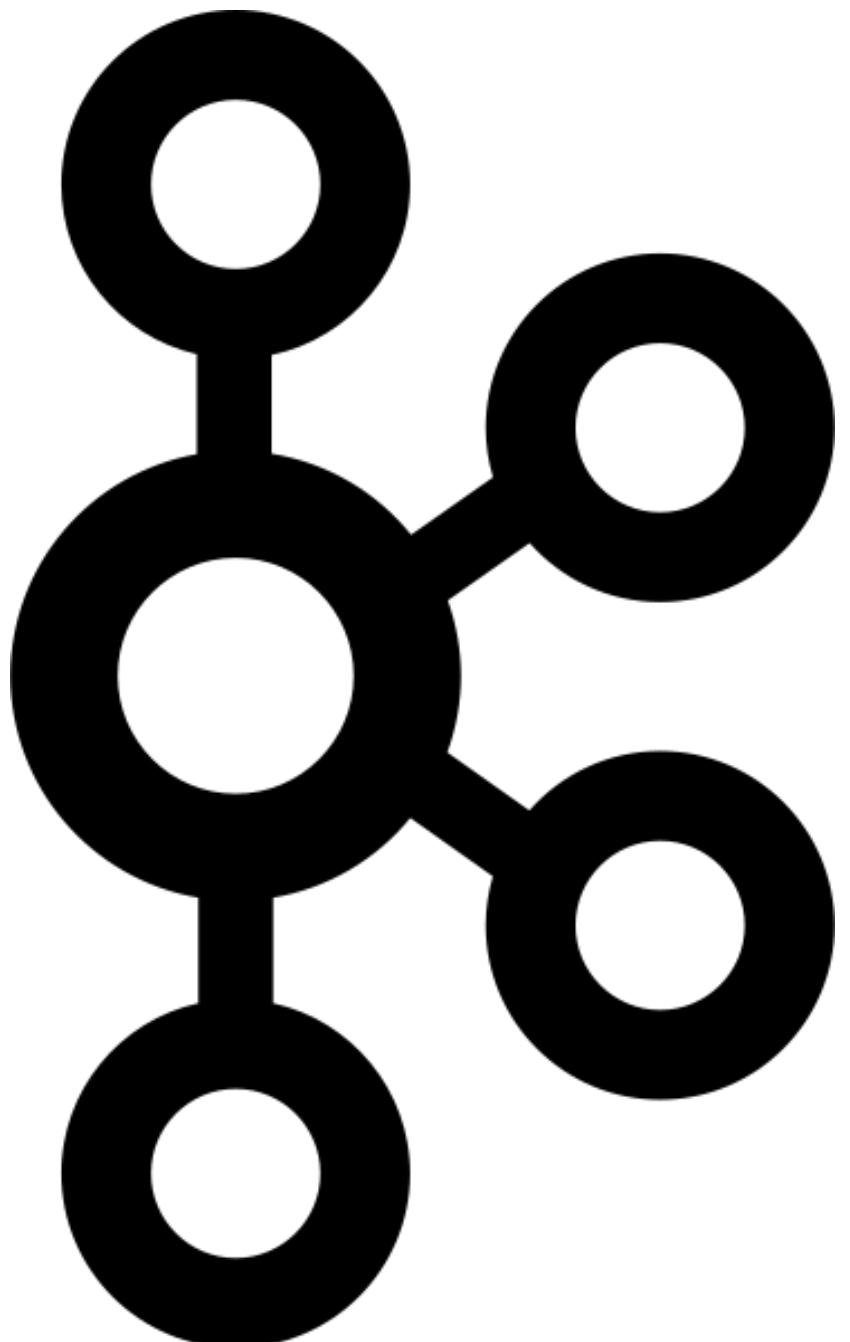
	Kafka	Pulsar	RabbitMQ (Mirrored)
Peak Throughput (MB/s)	605 MB/s	305 MB/s	38 MB/s
p99 Latency (ms)	5 ms (200 MB/s load)	25 ms (200 MB/s load)	1 ms* (reduced 30 MB/s load)

https://www.confluent.io/blog/kafka-fastest-messaging-system/?mkt_tok=eyJPljoiWVRNMIpXWTFNekI4TkRnNSIsInQiOiJQRUVRRGorZUhIVEV4K09ic0xwWEk1ejNjN0IGd0JnM21LNkEwR3pQU3dySWJIU2s1aGdmdEZOcENTeG5RS

Kafka

Какие задачи мы решали?

- Выстраивание коммуникации для большого количества компонентов
- Поддержка высокой нагрузки
- Нотификация сторонних систем
- Упорядоченная обработка
- Исключение возможности потери данных



Популярность Kafka

NETFLIX

uber

LinkedIn

Bloomberg

Kafka

- Распределённый брокер сообщений
- Open source
- Написан на Java и Scala
- Первый релиз был в 2014 году
- Актуальная версия 2.5.0



Kafka

Confluent Platform

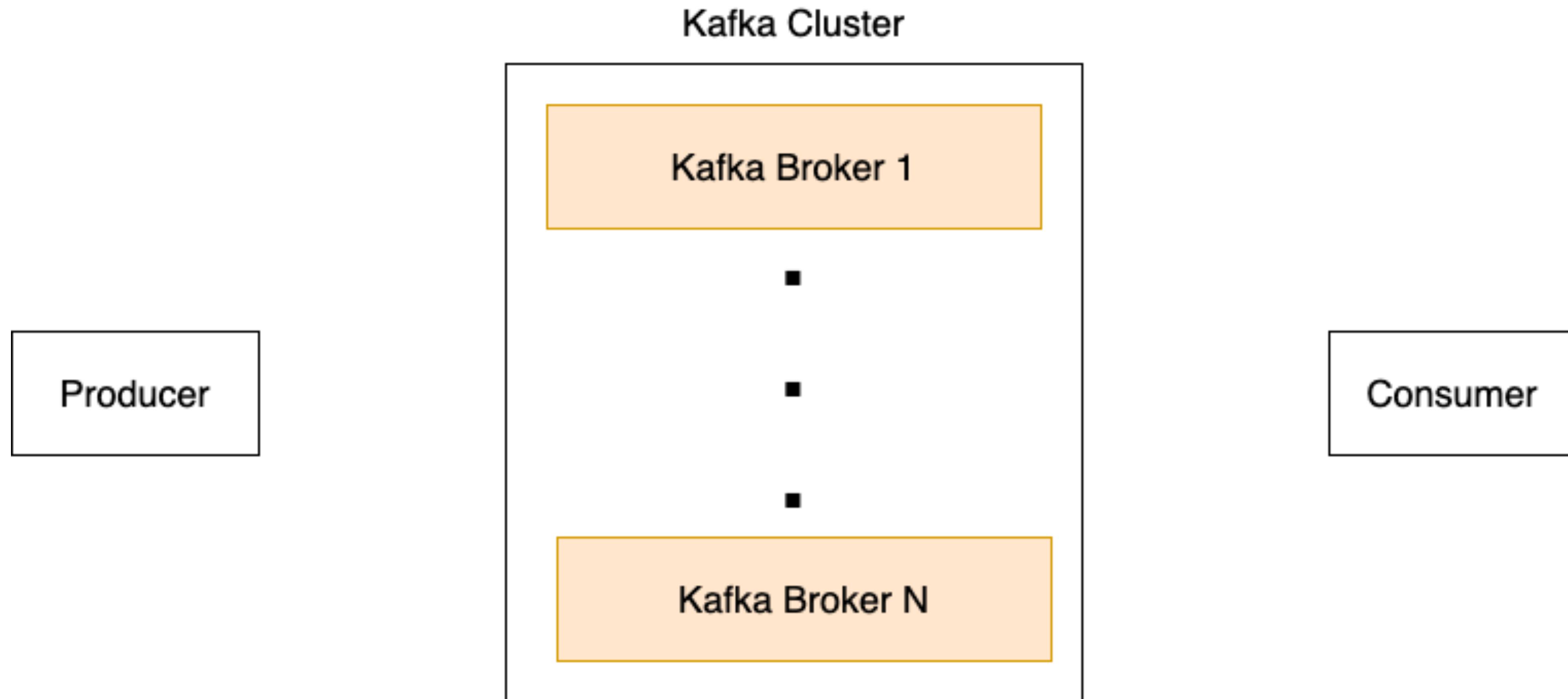


Apache Kafka	Confluent Community
Clients	Rest proxy
Streams	Schema Registry
Admin	KSQL
Connect	Confluence Connectors

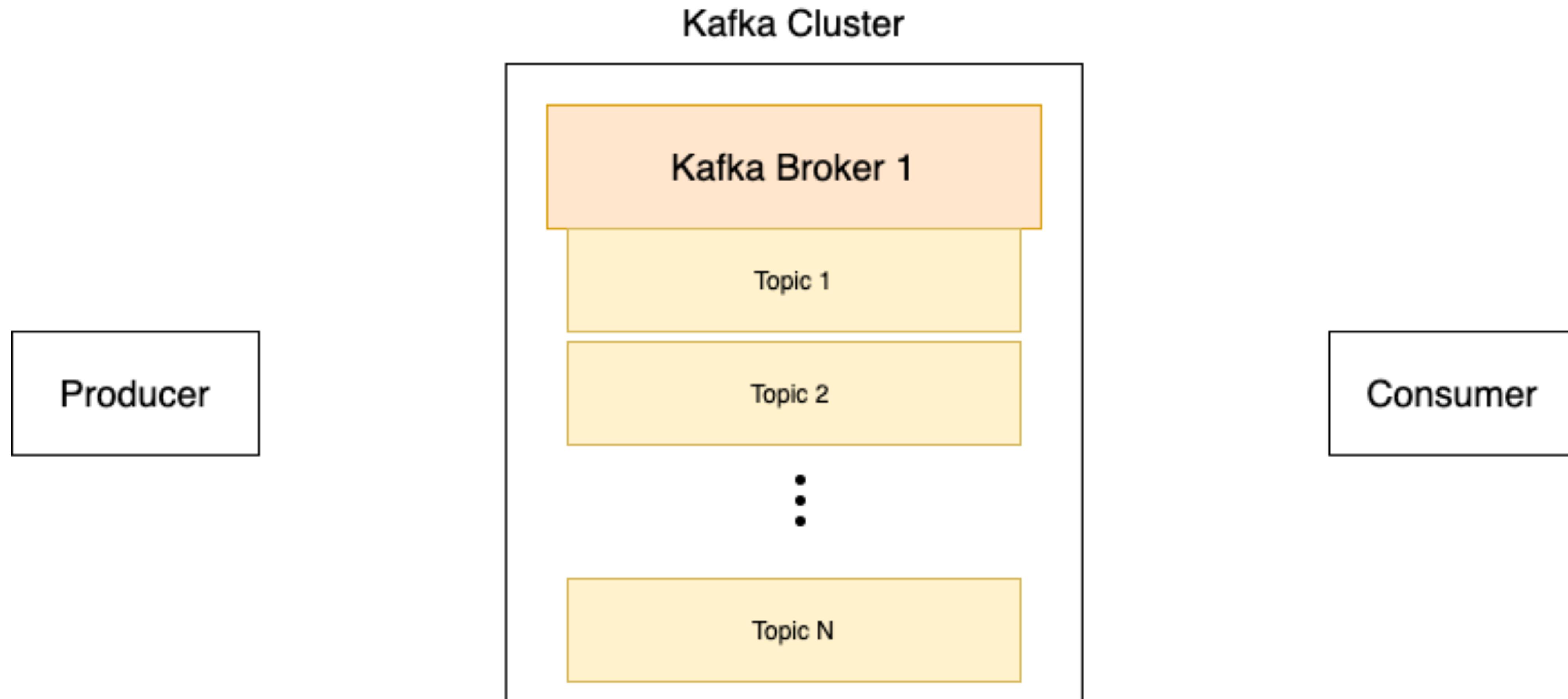
Архитектура Kafka



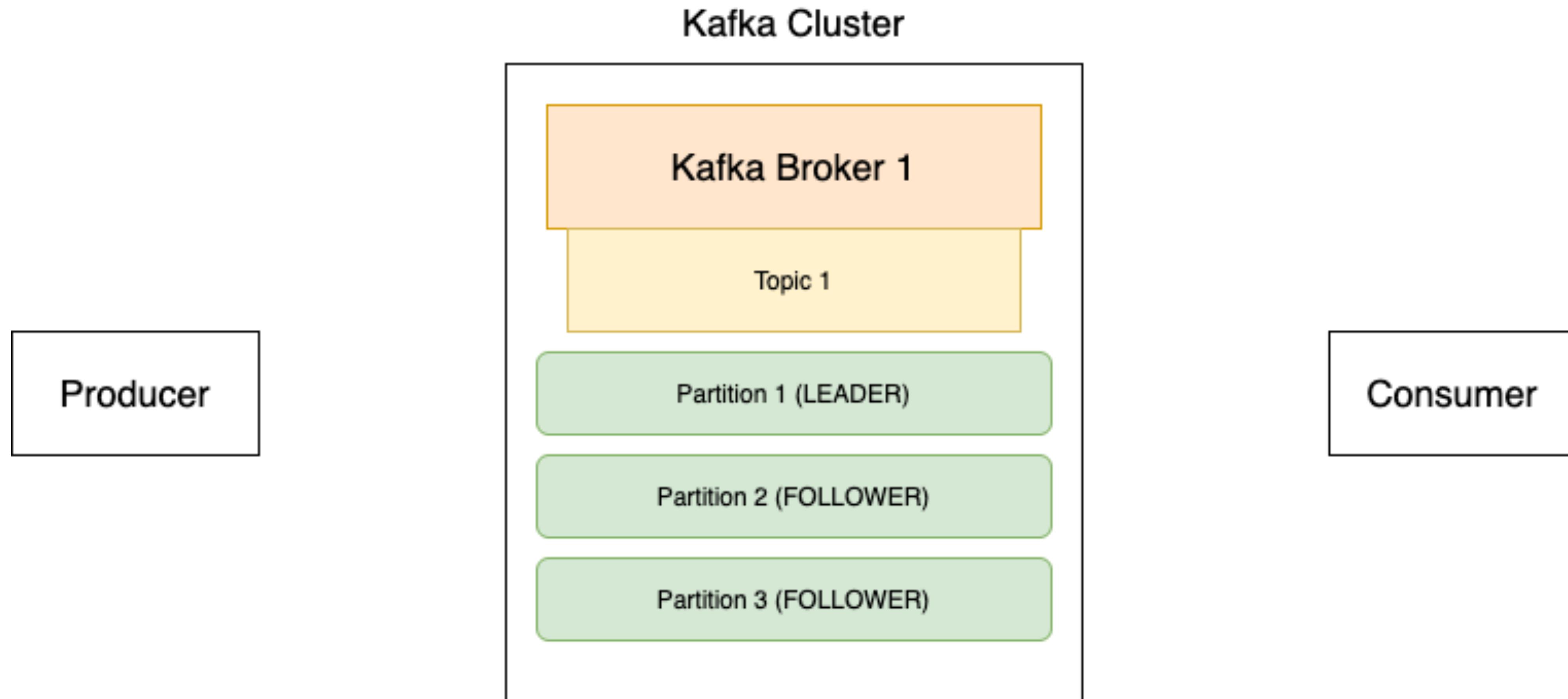
Архитектура Kafka



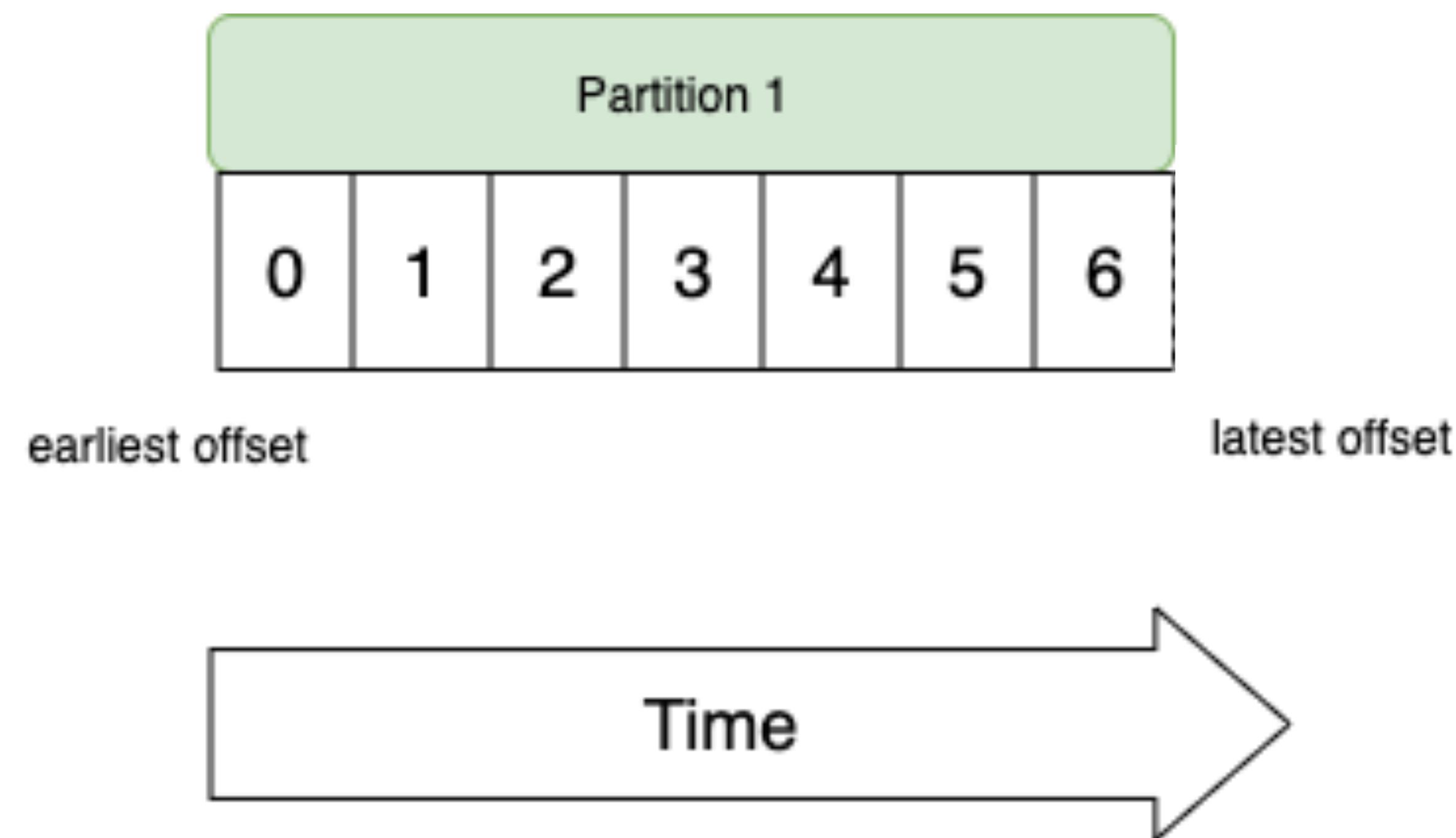
Архитектура Kafka



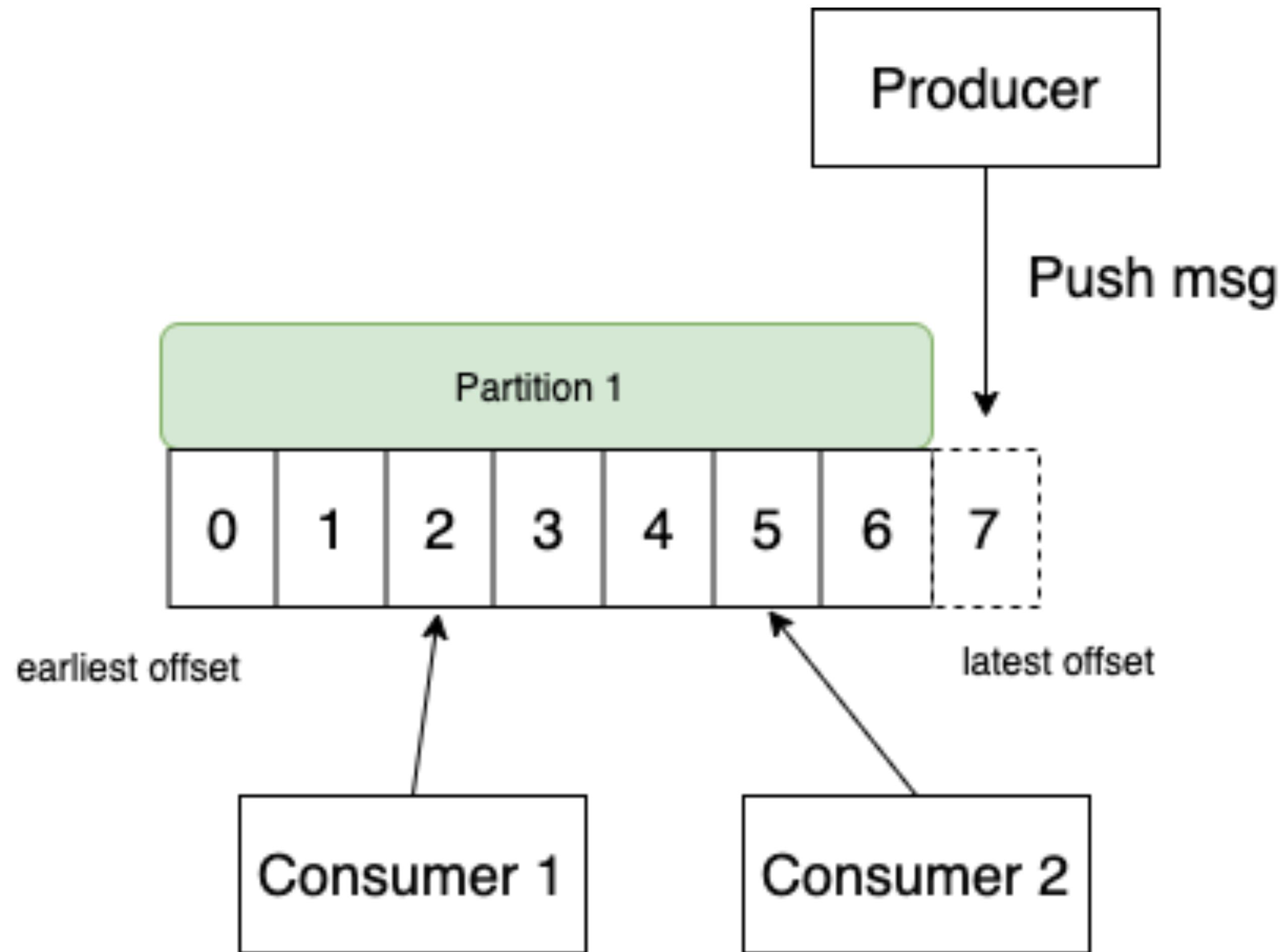
Архитектура Kafka



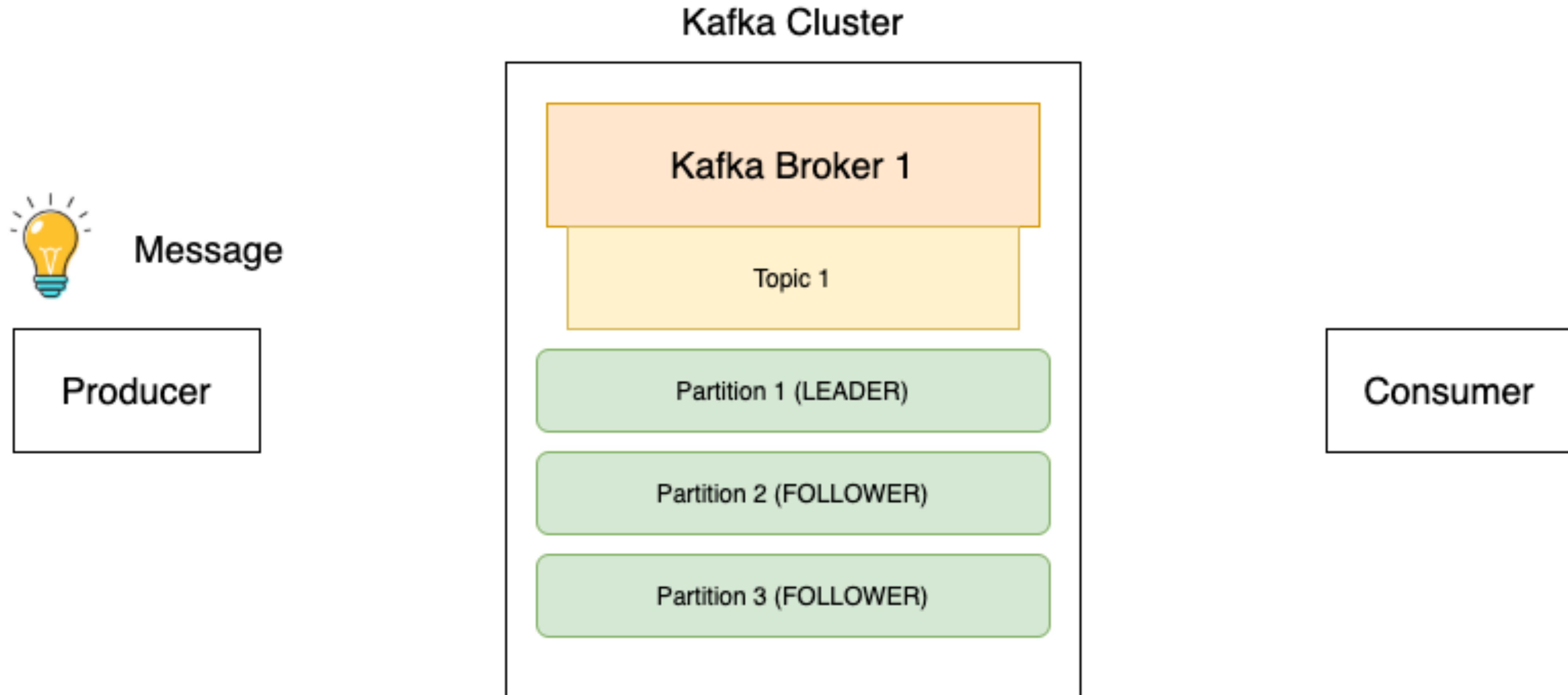
Архитектура Kafka



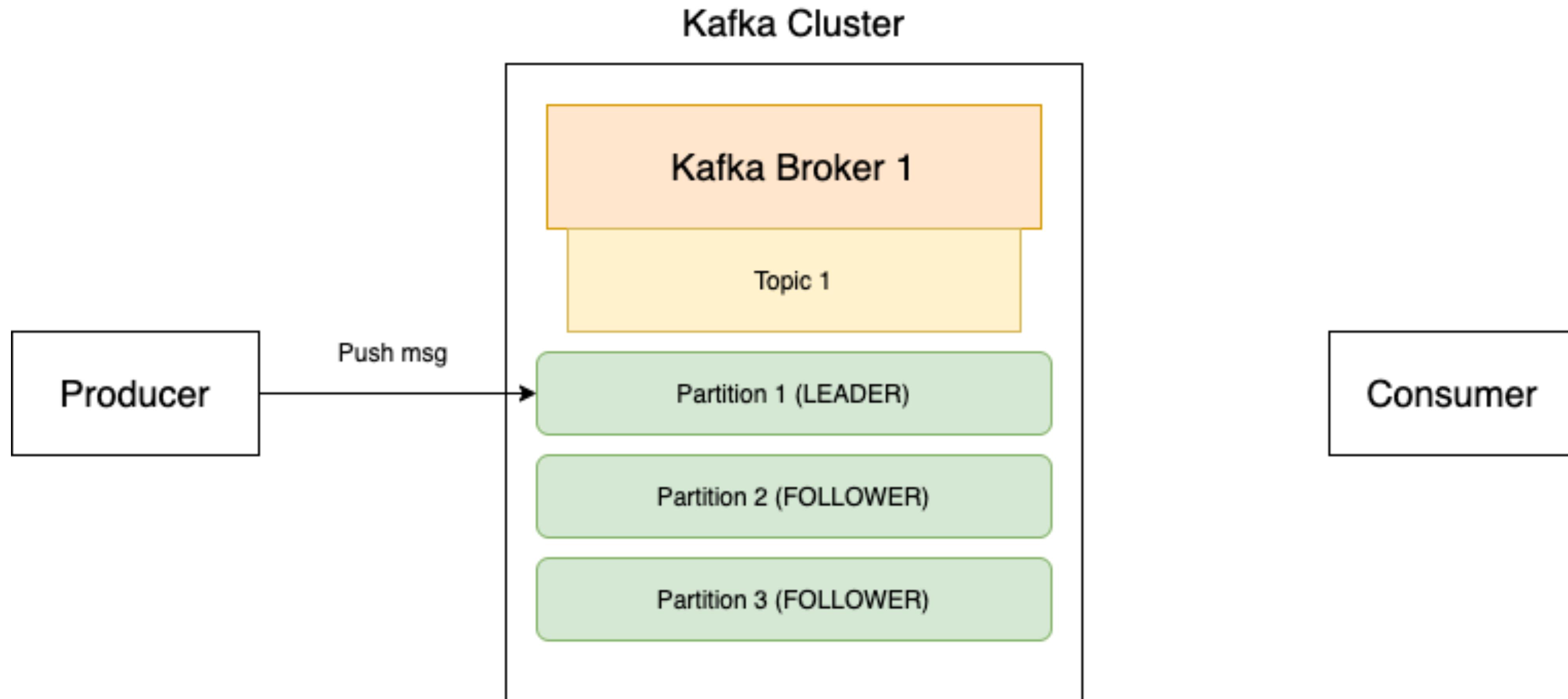
Архитектура Kafka



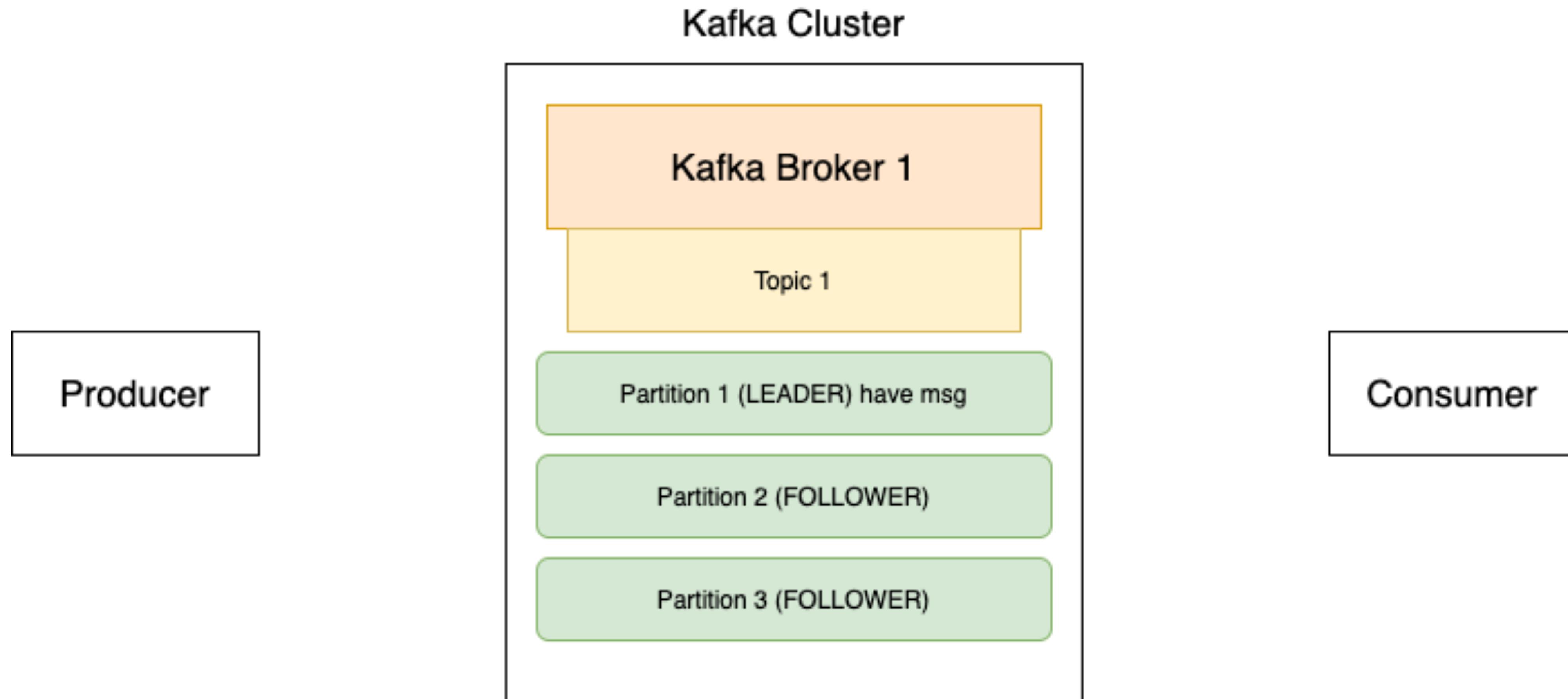
Архитектура Kafka



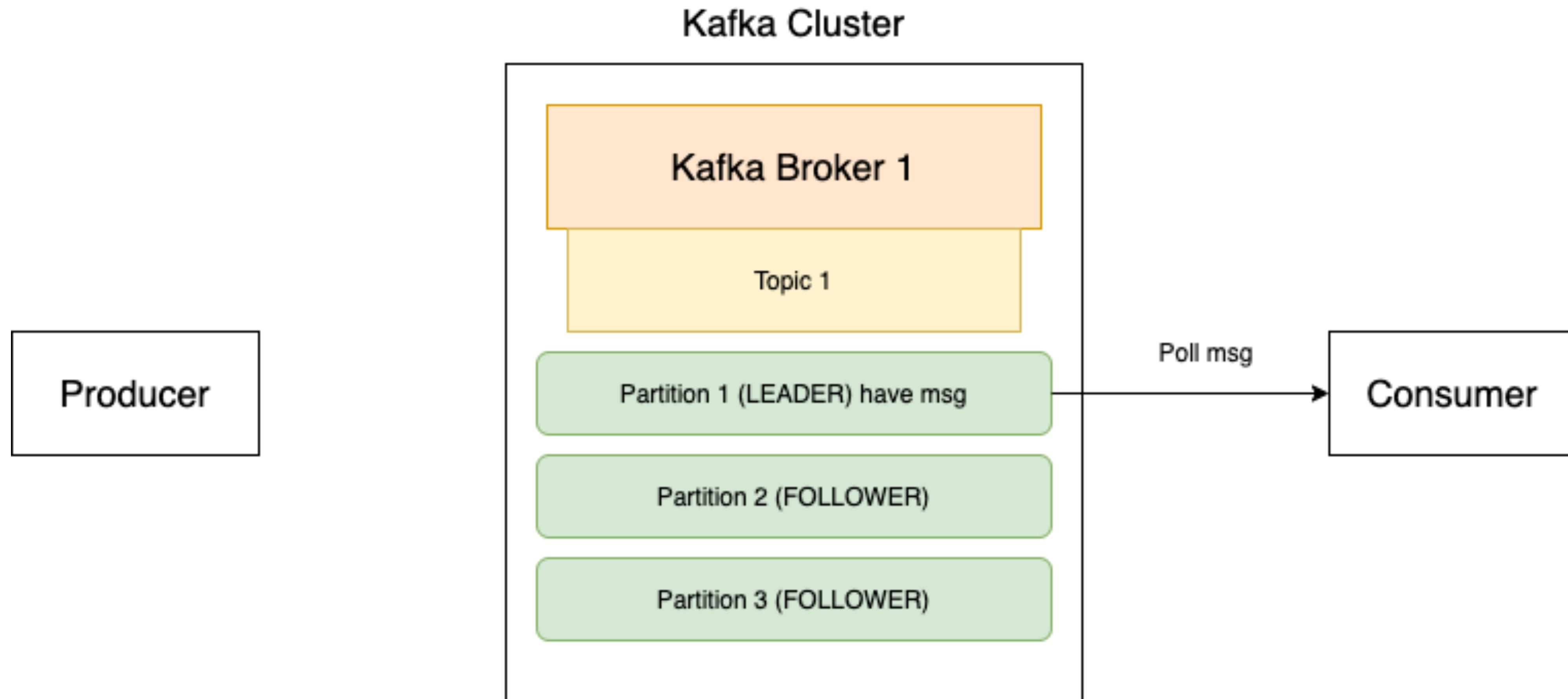
Архитектура Kafka



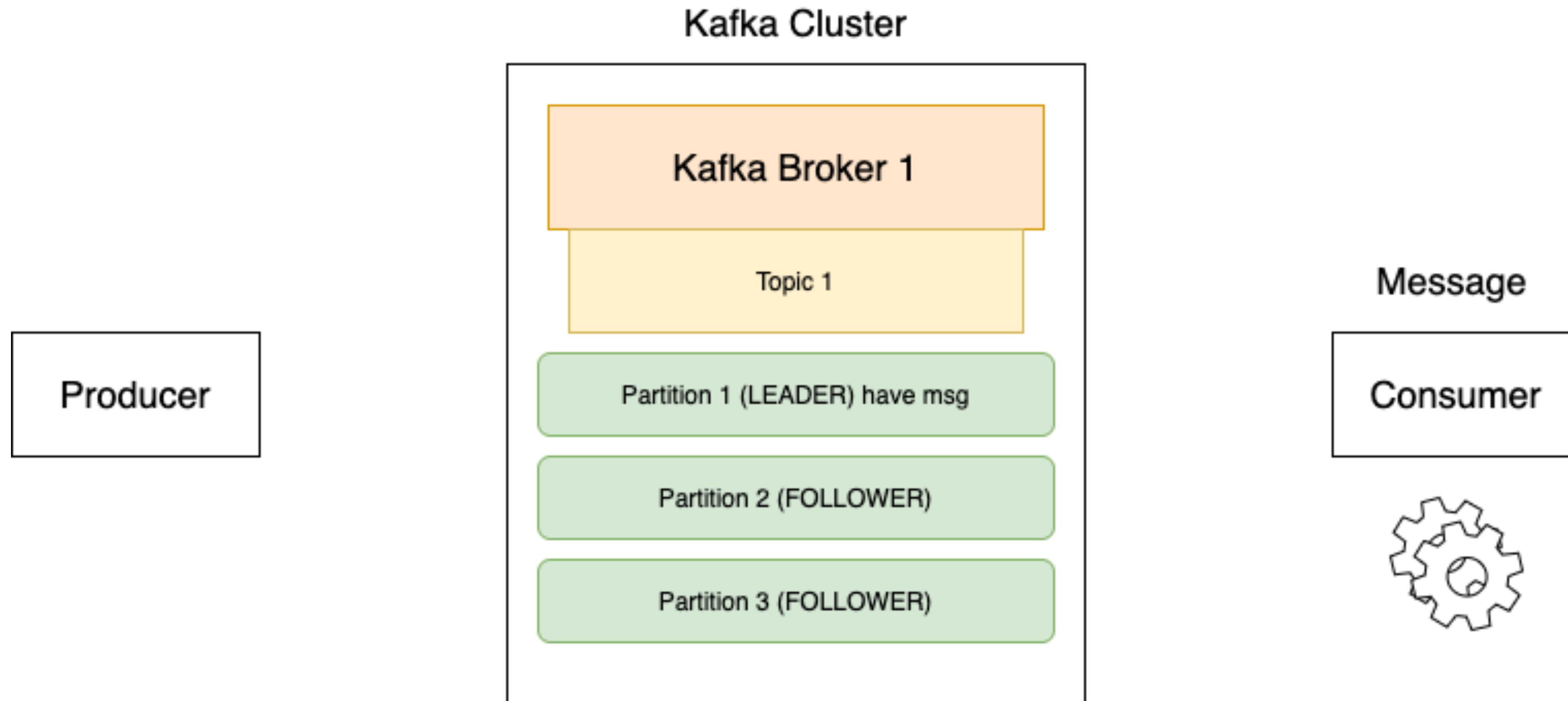
Архитектура Kafka



Архитектура Kafka



Архитектура Kafka



Архитектура Kafka



Предложения по улучшению KAFKA (KIP)

Confluence Spaces

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Apache Kafka

Pages Blog SPACE SHORTCUTS Retrospectives CHILD PAGES Index Kafka Improvement Proposals drafts KIP-1 - Remove support of requ... KIP-2 - Refactor brokers to allo... 624 more child pages

Adopted KIPs

Please insert new rows in **sorted order** (descending by KIP number).

	KIP (please keep this sorted by KIP number)	Release
1	KIP-626: Rename StreamsConfig config variable name	2.7.0
2	KIP-613: Add end-to-end latency metrics to Streams	2.6.0 (partially implemented), remainder 2.7.0 (WIP)
3	KIP-612: Ability to Limit Connection Creation Rate on Brokers	2.7.0 (WIP)
4	KIP-610: Error Reporting in Sink Connectors	2.6.0
5	KIP-608: Expose Kafka Metrics in Authorizer	2.7.0 (WIP)
6	KIP-606: Add Metadata Context to MetricsReporter	2.6.0
7	KIP-605: Expand Connect Worker Internal Topic Settings	2.6.0
8	KIP-604: Remove ZooKeeper Flags from the Administrative Tools	one part in 2.6.0, most parts scheduled for 3.0
9	KIP-602: Change default value for client.dns.lookup	2.6.0
10	KIP-599: Throttle Create Topic, Create Partition and Delete Topic Operations	2.7.0 (WIP)
11	KIP-597: MirrorMaker2 internal topics Formatters	2.7.0 (WIP)
12	KIP-594: Expose output topic names from TopologyTestDriver	2.6.0
13	KIP-593: Implement New Leader Election Logic and Mutation Protocols to The Controller	2.7.0 (WIP)

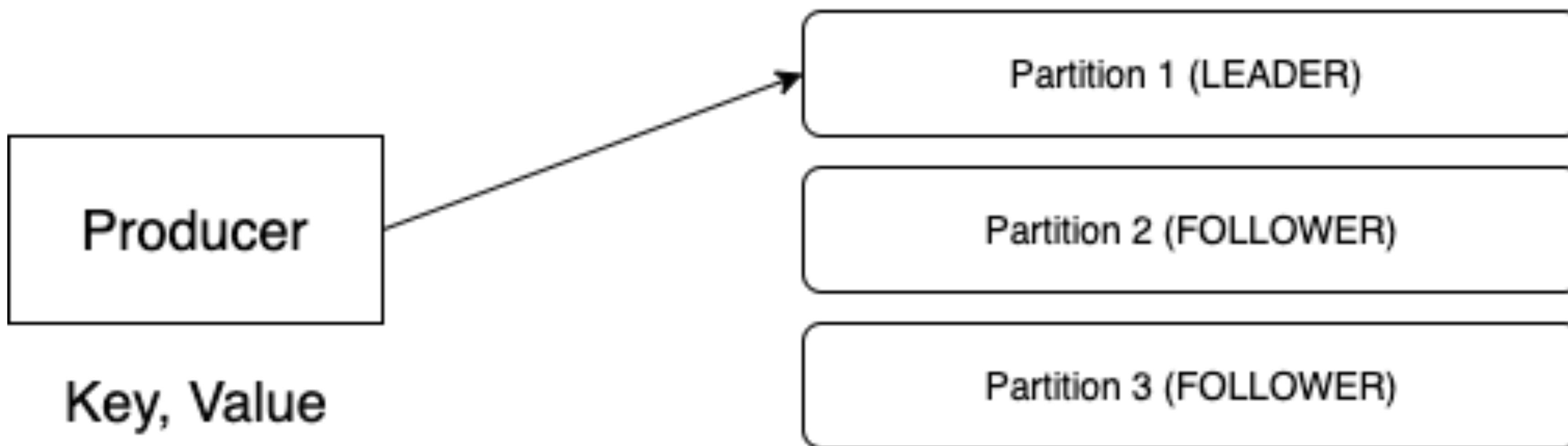
Space tools https://cwiki.apache.org/confluence/display/KAFKA/Kafka+Improvement+Proposals#app-switcher

Семантики доставки сообщений

- **at-most-once** - сообщение может быть доставлено 0 или 1 раз
- **at-least-once** - сообщение может быть доставлено 1 и более раз
- **exactly-once** - гарантированна доставка сообщения строго один раз

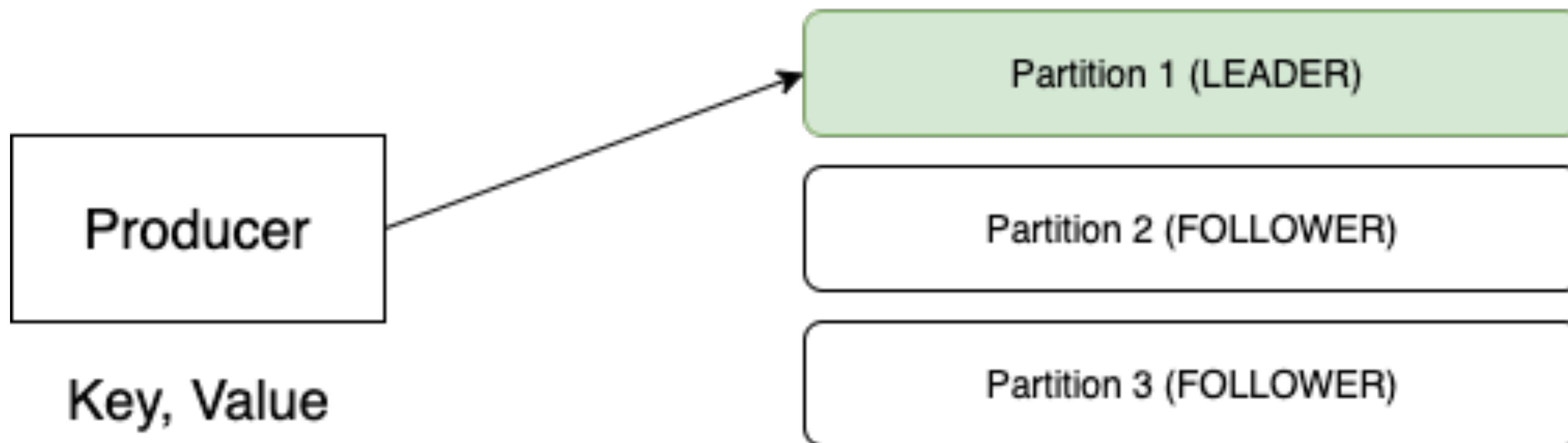
Producer

acks = 0



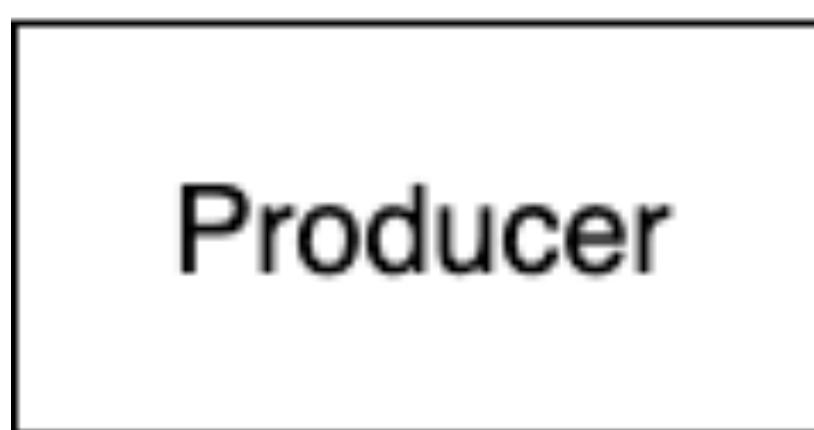
Producer

acks = 1



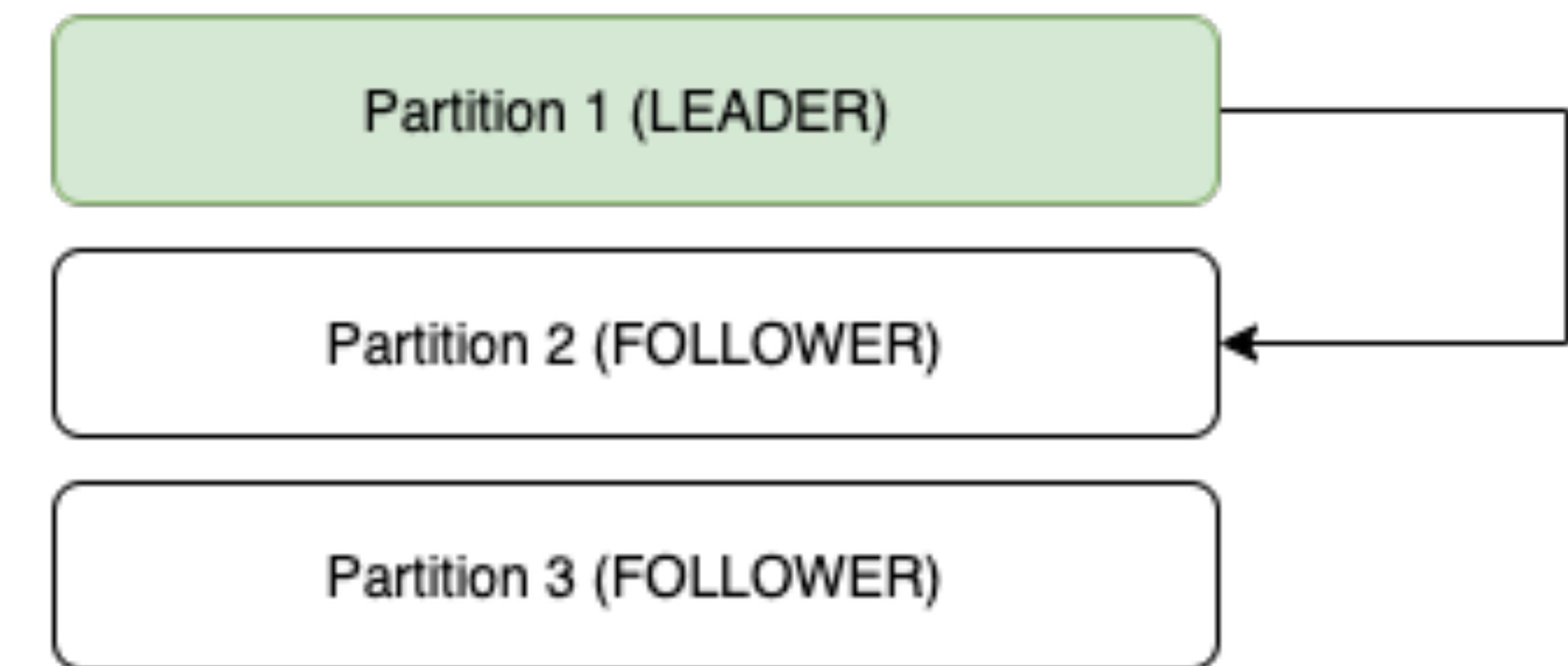
Producer

acks = 1

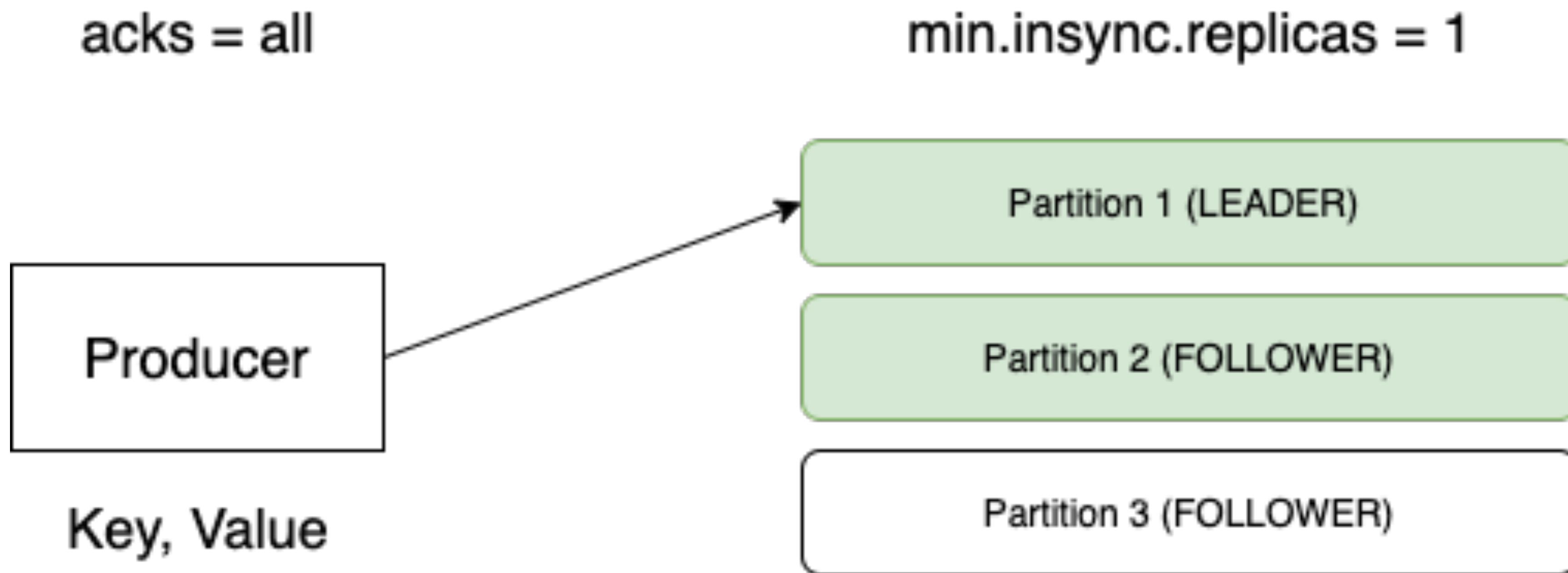


Key, Value

min.insync.replicas = 1

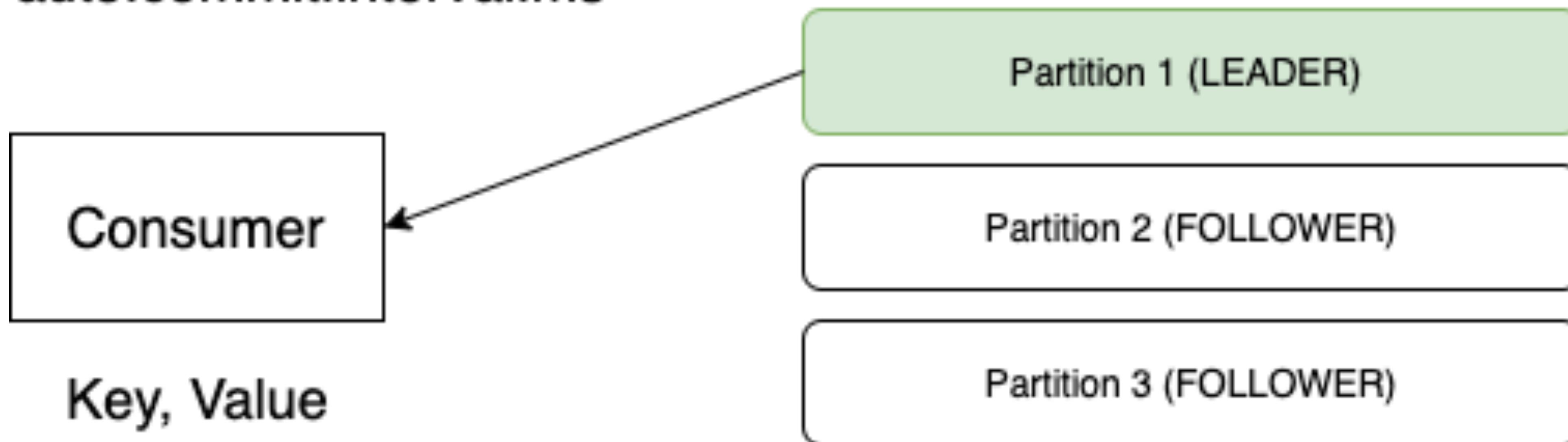


Producer



Consumer

`enable.auto.commit=true`
`auto.commit.interval.ms`



Consumer

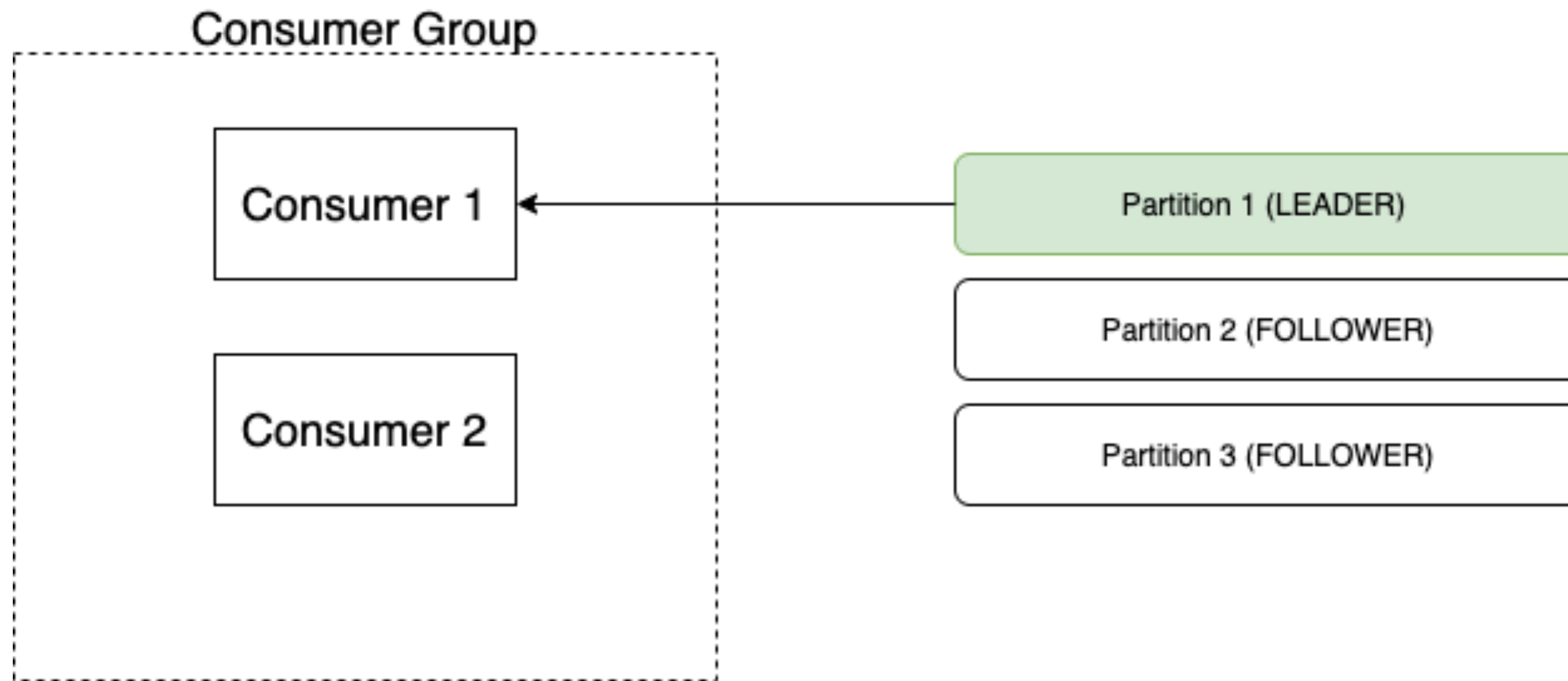
`enable.auto.commit=false`
`auto.commit.interval.ms`



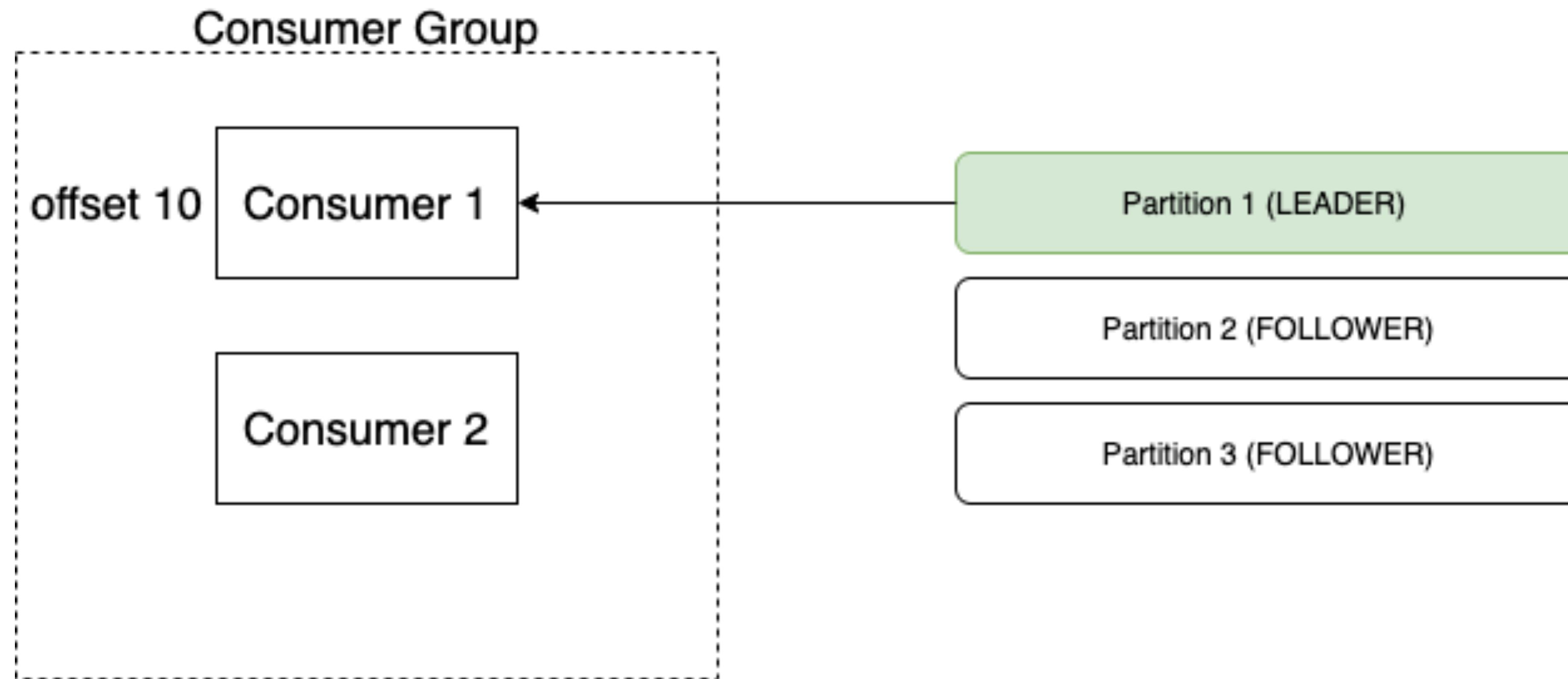
Key, Value

`ProcessorContext.commit`

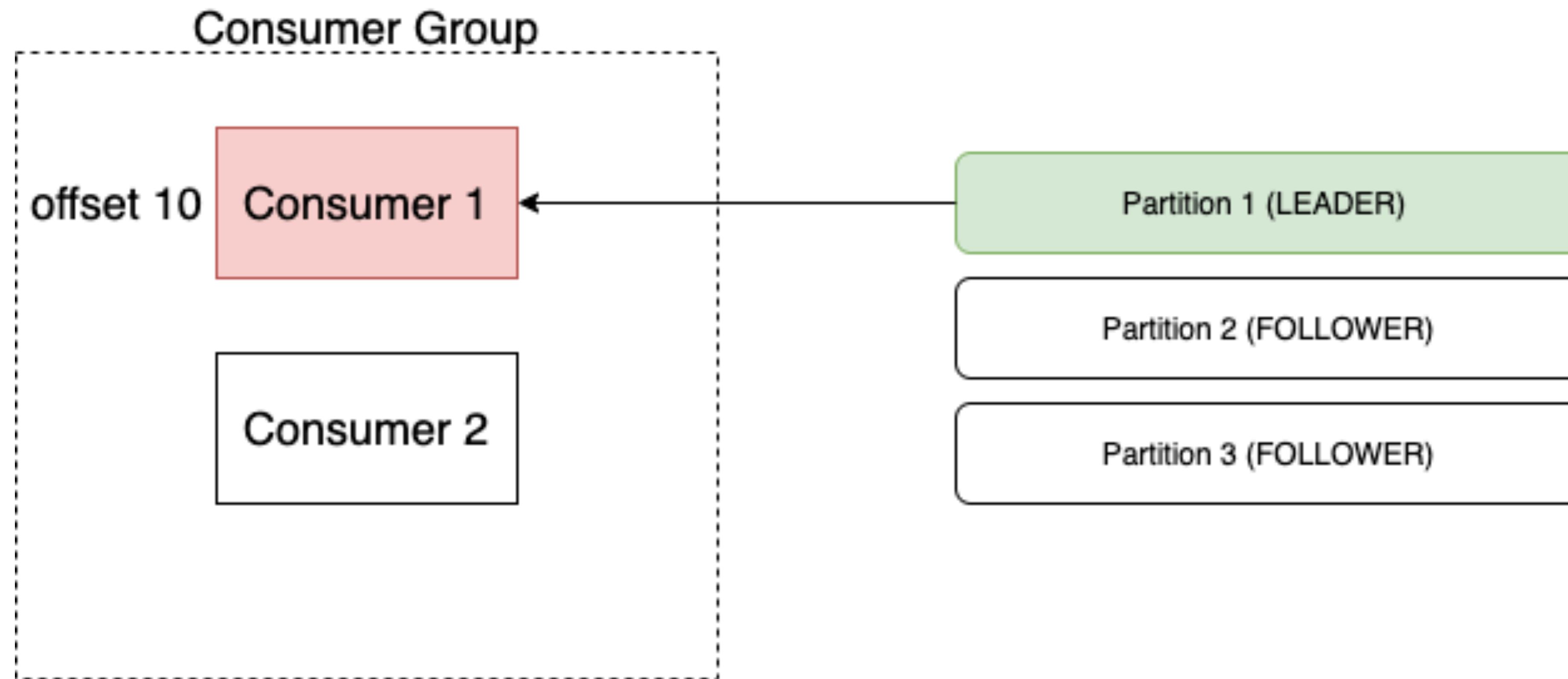
Consumer



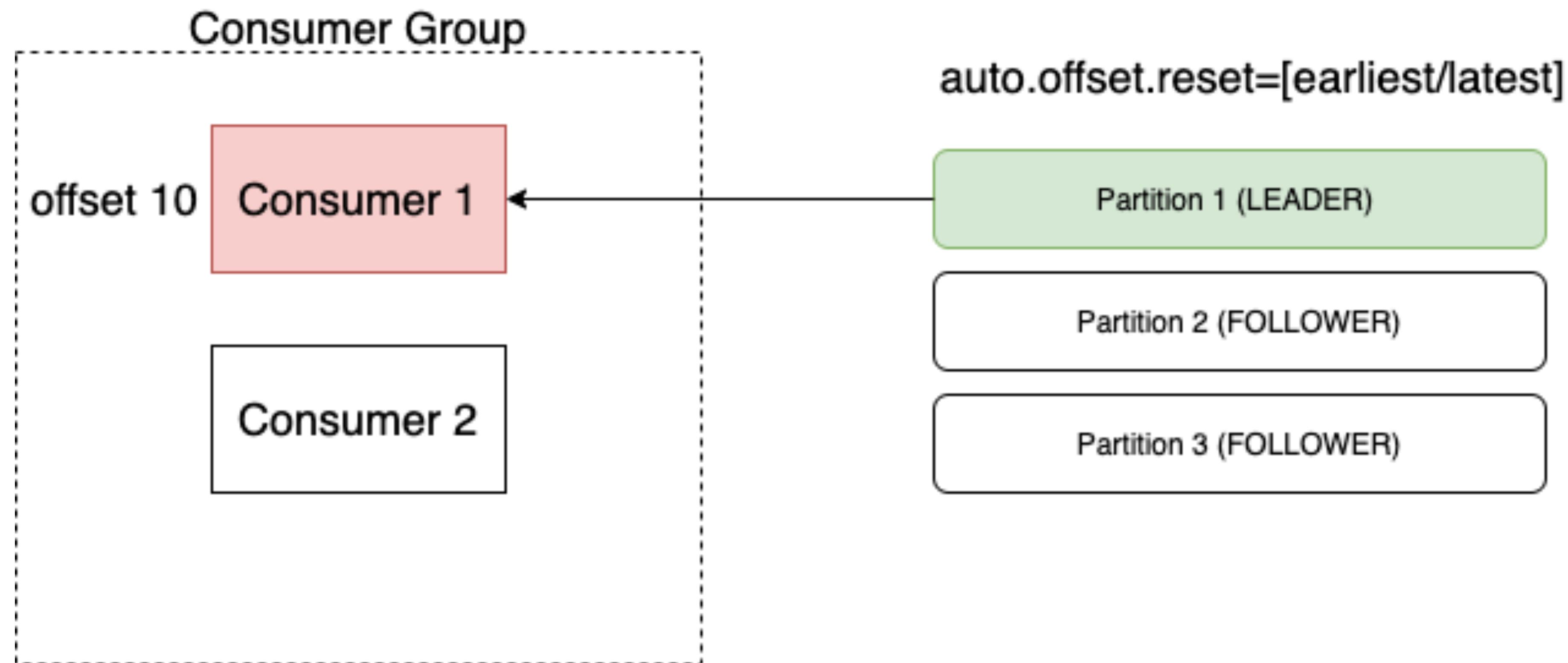
Consumer



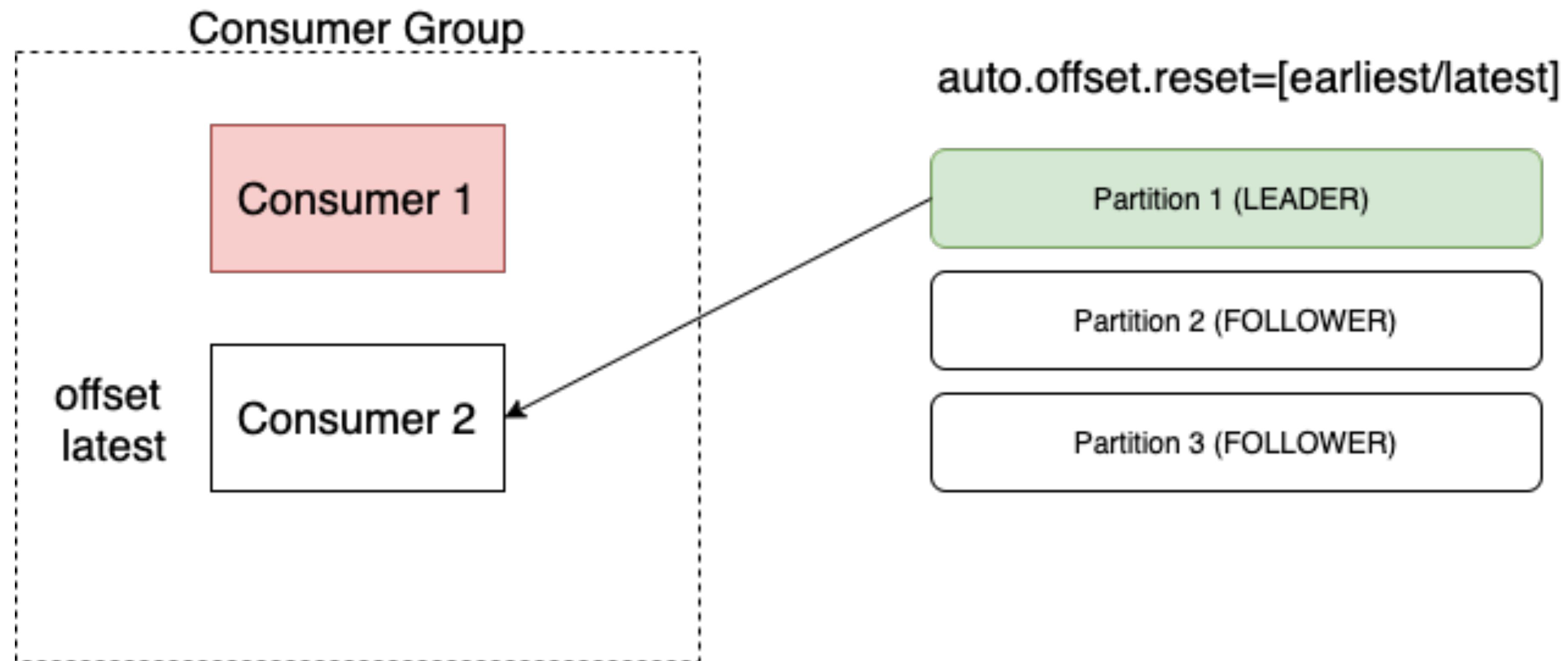
Consumer



Consumer



Consumer



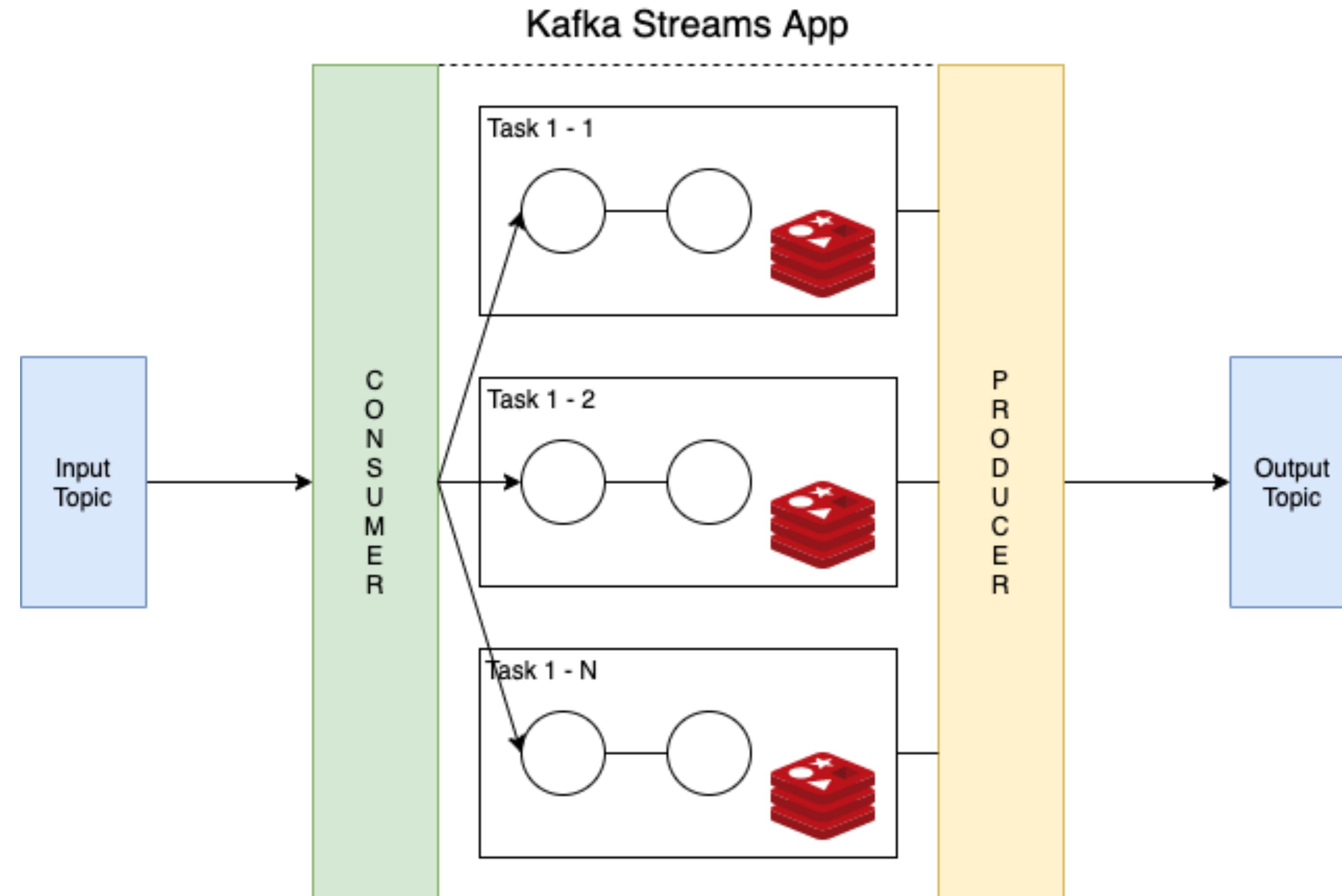
Экосистема Kafka

Kafka Streams

- Построение потоковой обработки с помощью DSL
- Потоковая обработка происходит за пределами Kafka Cluster
- InMemory хранилище
- Мониторинг
- Контейнеризация

Экосистема Kafka

Kafka Streams



All you need is Kafka

Kafka это не только для Java



Тестирование приложений с kafka

- Test topology driver - unit test
- Embedded Kafka - integration test
- Test containers - end-to-end test

<https://kafkasummit.io/>

The screenshot shows the Kafka Summit 2020 website interface. At the top, there's a navigation bar with links for HOME, LEARN, INTERACT, EXPLORE, and RESOURCES, along with icons for user profile, search, and refresh.

The main content area features a banner with the text "Like minded Individuals and Sessions of Interest". Below this, a message says "Thanks Grigoriy! Based on your responses, we think you might enjoy these People and Sessions". A "Rebuild your network" button is also present.

LIKE MINDED INDIVIDUALS

These attendees share similar interests as you. Get to know them by shooting them a message or having a video call!

- Harsh Wardhan Agarwal**
Confluent, Inc
Software Engineer
 Chat
- Emre Ahmetbeyoglu**
Inavitas
Software Technical Lead
 Chat
- Kyle Aungst**
Omada Health
Senior Software Engineer
 Chat
- Elena Badarau**
TiVo
Software Developer
 Chat

SESSIONS OF INTEREST

- Distributed Data Storage & Streaming for Real-time Decisioning Using Kafka, Spark and Aerospike**
Monday August 24
11:30 AM US/Pacific - 12:30 PM US/Pacific
Architect, Architecture, Connectors, Core Kafka, Financial Services, Intermediate, Retail, Stream Processing, Use Cases
- Streaming Data Between Kafka and Couchbase, How and Why**
Monday August 24
1:30 PM US/Pacific - 2:30 PM US/Pacific
Architecture, Connectors, Developer, Event-Driven Systems, Financial Services, Government, Integration, Intermediate, Retail, Stream Processing
- Kafka Lag Monitoring For Human Beings**
Tuesday August 25
8:00 AM US/Pacific - 8:00 AM US/Pacific

Grigoriy Skobelev

Grigoriy Skobelev

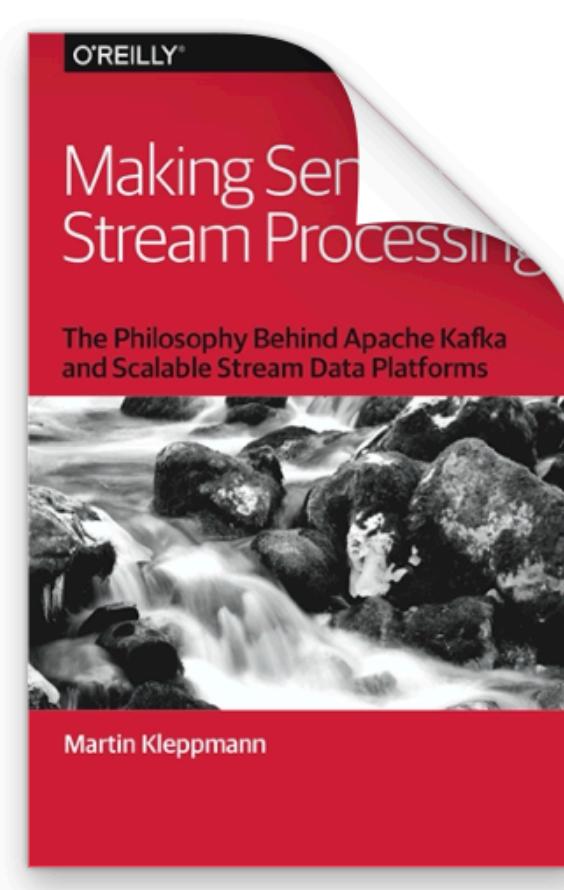
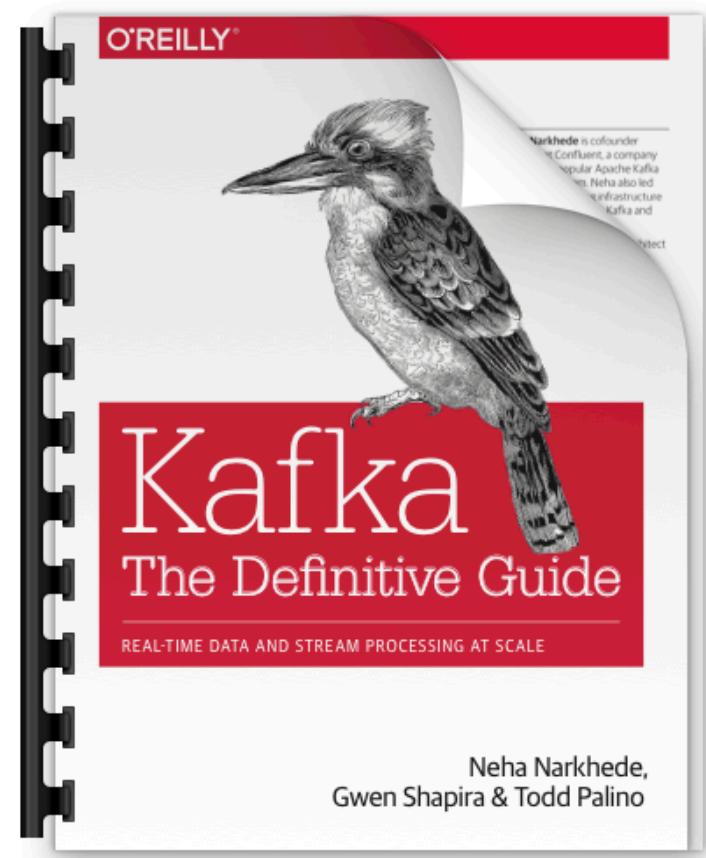
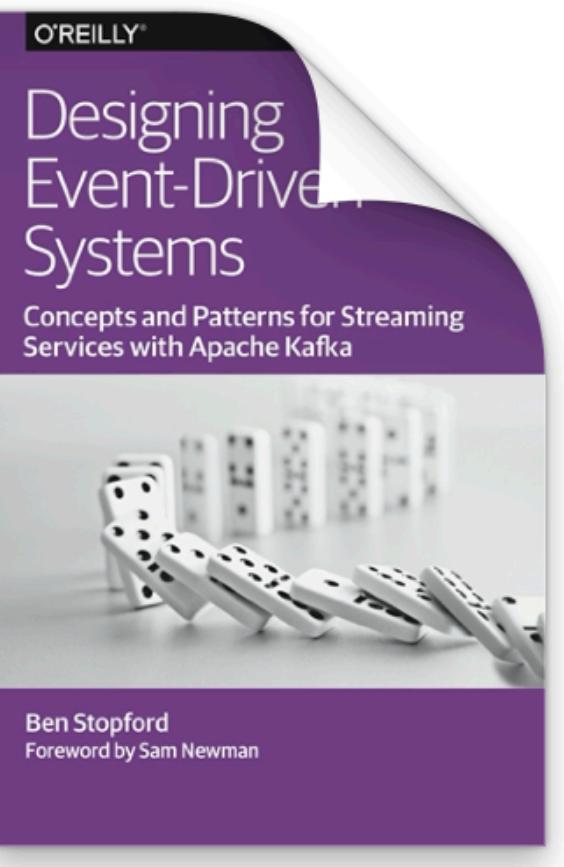
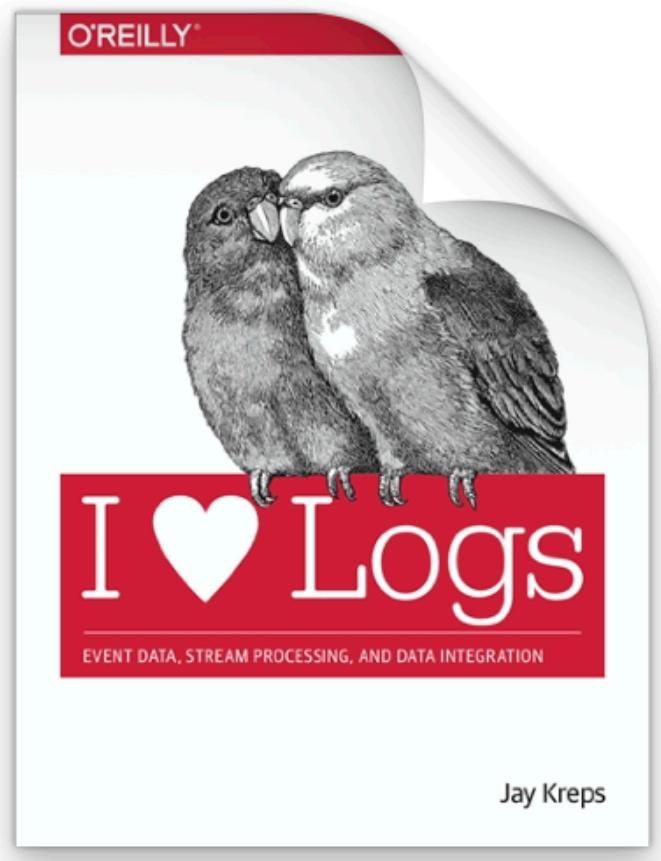
Edit Profile
System Check
Earn Prizes

MY MESSAGES

Attendees 0

Have you heard about the free training on 8/19? Join our FREE ApacheKafka Fundamentals course with live Q&A starting at 8am PDT.
about 14 hours ago

<https://www.confluent.io/apache-kafka-stream-processing-book-bundle/>



<https://t.me/Gskoba>

gskobelevff@gmail.com

<https://github.com/GSkoba/devParty2020>



Grisha Skobelev

@Gskoba

