Kafka 101

A gentle introduction

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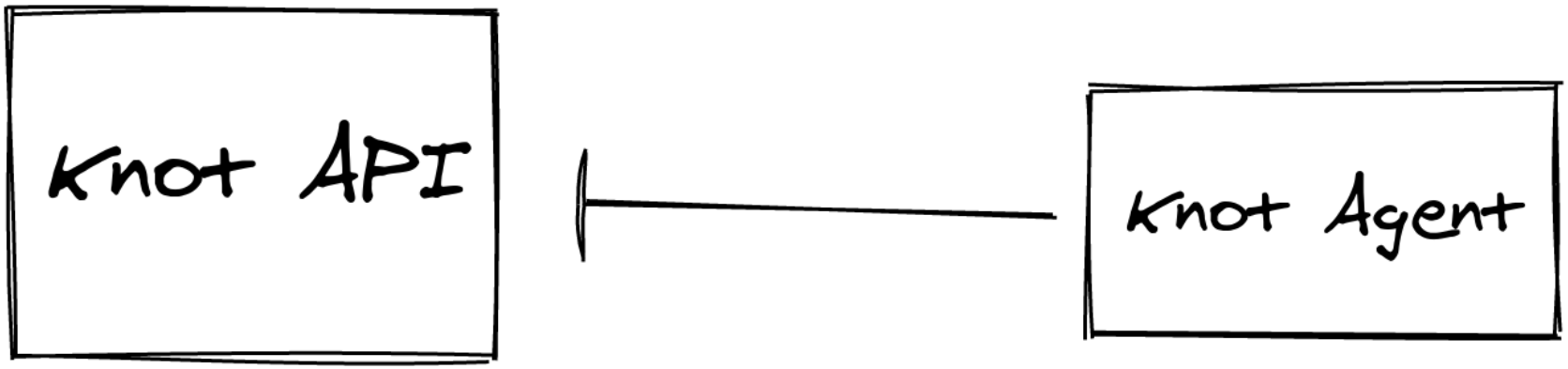
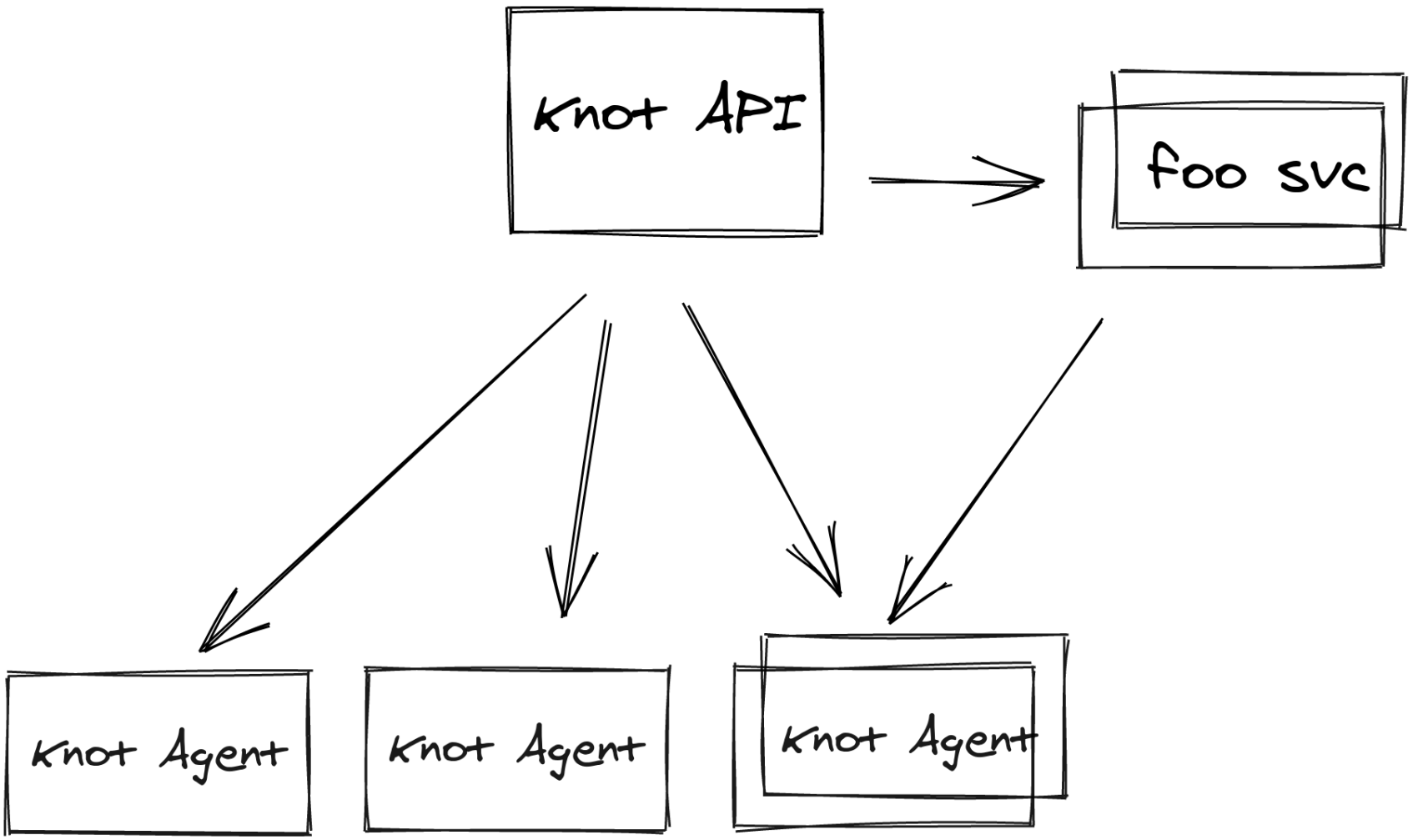
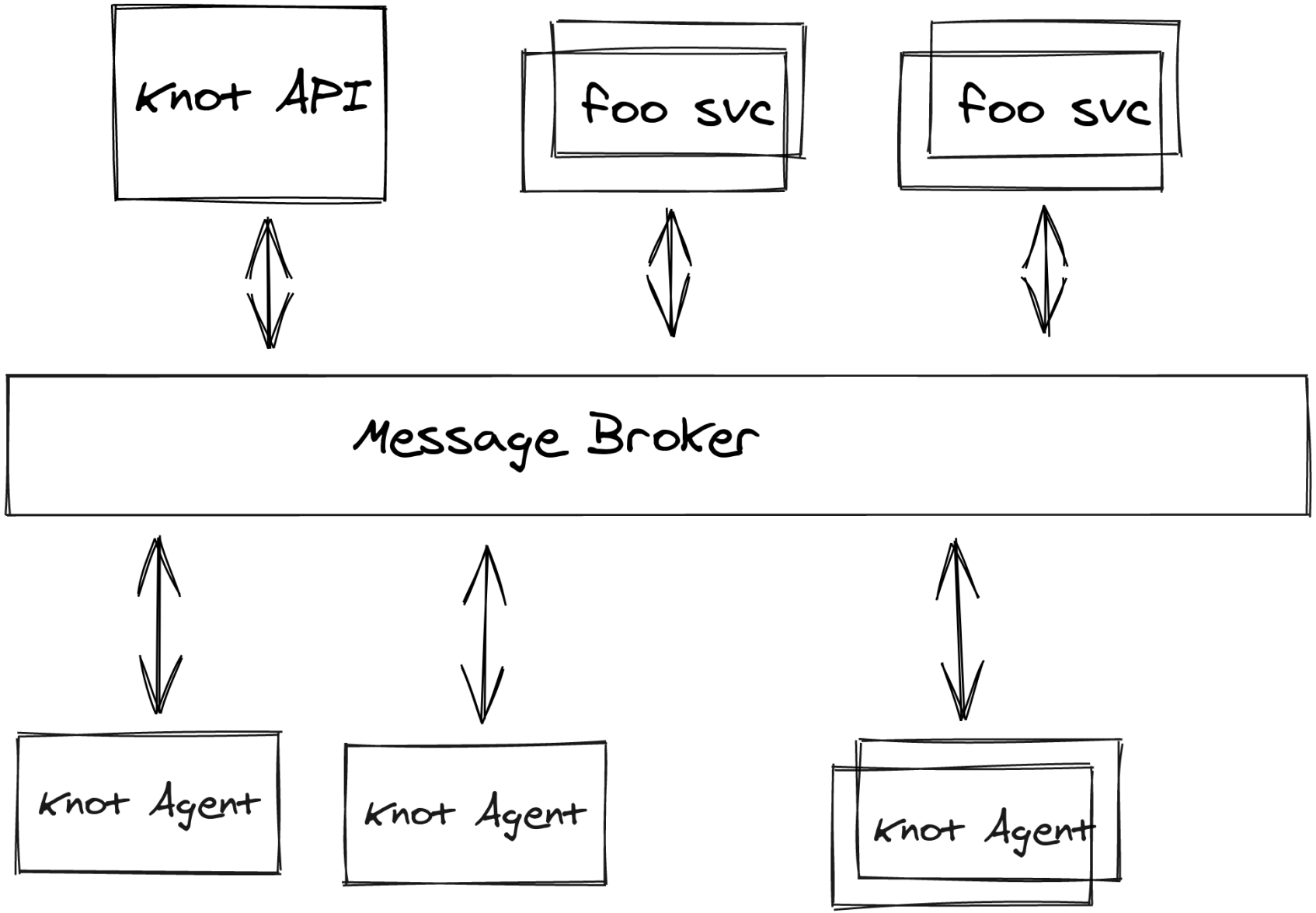
Why?




knot API
foo svc
knot Agent
knot Agent
knot Agent


Knot API
foo svc
foo svc
Message Broker
Knot Agent
Knot Agent
Knot Agent

Kafka vs RabbitMQ

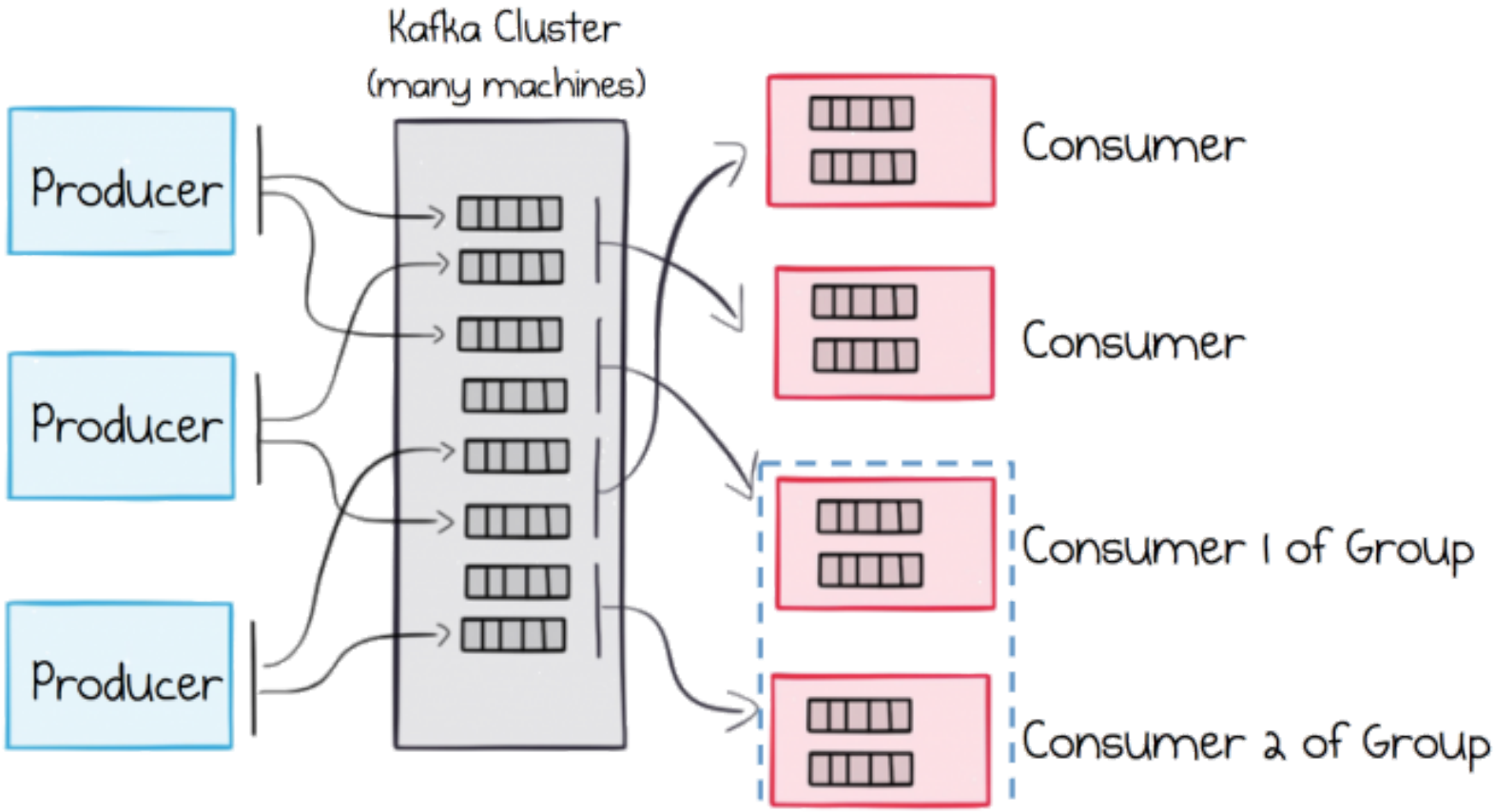
- Message ordering
- Message routing
- Message timing
- Message retention
- Fault handling
- Scaling
- Consumer complexity
  - RabbitMQ: smart-broker, dumb-consumer
  - Kafka: dump-broker, smart-consumer

When to use which

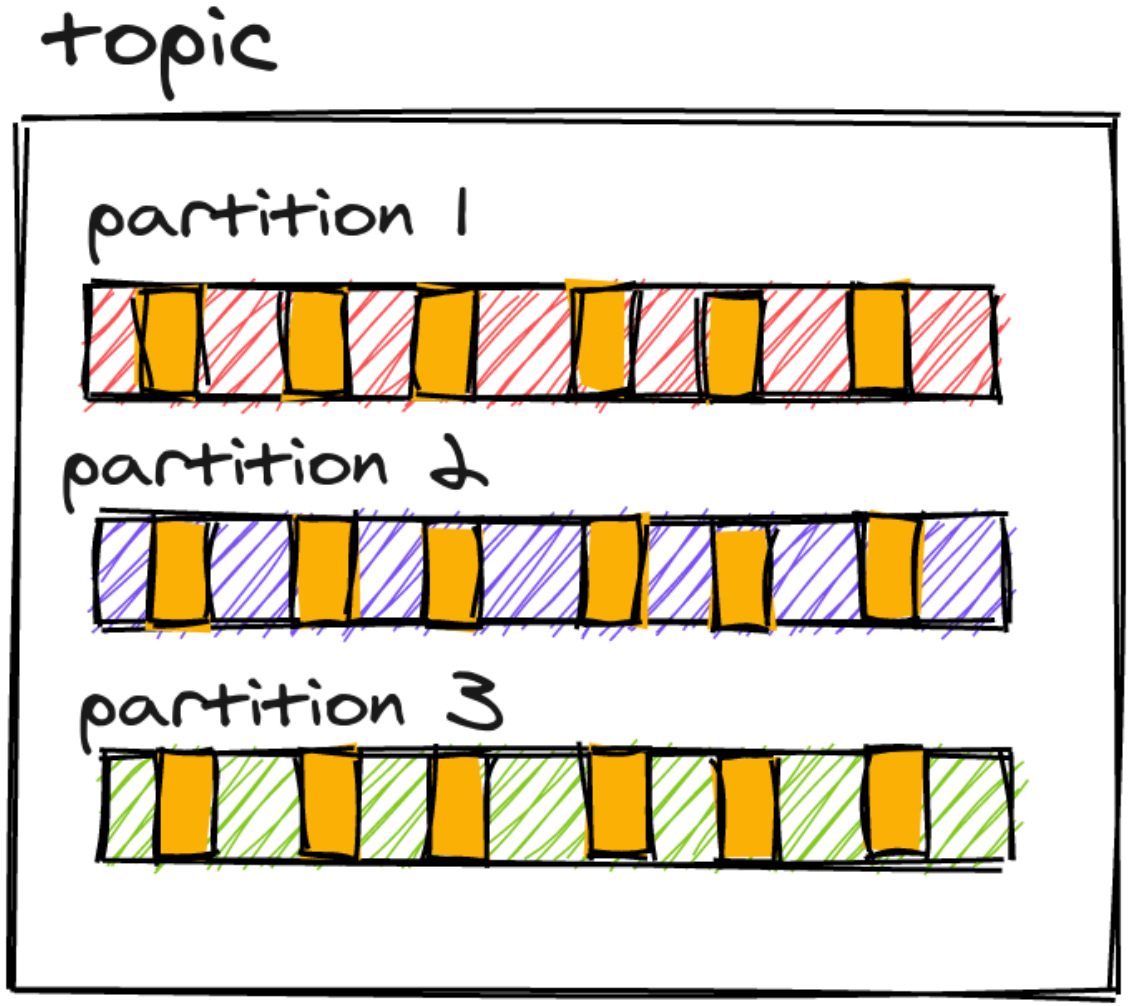
- RabbitMQ: Command
- Kafka: Event
  - Package tracking
  - Movie recommendation
  - Surge pricing

What?

Kafka Component - Bird View



confluent.io


topic
partition 1
partition 2
partition 3

Topic

- Replication
- Partition
- Offset
- Retention
- Immutable

How - Installation

YAML

```yaml
services:
    zookeeper:
        image: wurstmeister/zookeeper
    kafka1:
        image: wurstmeister/kafka:2.12-2.4.0
        ports:
            - "9092:9092"
        environment:
            KAFKA_ADVERTISED_HOST_NAME: 103.93.59.207
            KAFKA_ZOOKEEPER_CONNECT: zookeeper:2181
```

Creating topics

BASH

```
#!/usr/bin/env bash

# kafka-topics is alias to kafka-topics.sh --bootstrap-
server localhost:9092

kafka-topics --list
kafka-topics --create --topic bus-location # --
replication-factor 1 --partitions 2
kafka-topics --describe --topic bus-location
```

Producing messages

BASH

```
#!/usr/bin/env bash

# kafka-producer is alias to kafka-console-producer.sh --
bootstrap-server localhost:9092

kafka-producer --topic bus-location
```

Consuming messages

BASH

```
#!/usr/bin/env bash

# kafka-consumer is alias to kafka-console-consumer.sh --
bootstrap-server localhost:9092

kafka-consumer --topic bus-location # --from-beginning
```

Consumer

- Consumer Group
- Load balance
- Reliability

More

BASH

```
#!/usr/bin/env bash

kafka-topics --create --topic bus-fuel --partitions 2

kafka-consumer --topic bus-fuel --group traffic # twice
```

Python

PYTHON

```python
from kafka import KafkaProducer
from kafka import KafkaConsumer

# Producer
producer =
KafkaProducer(bootstrap_servers="localhost:9092")

for count in range(100):
    producer.send("bus-location", count)

# Consumer
consumer = KafkaConsumer("bus-location")

for msg in consumer:
    print(msg)
```

> *Paths are made by walking.*
>
> *— Franz Kafka*

Thank You!

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