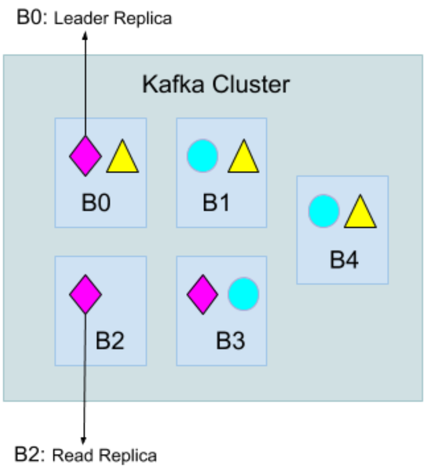
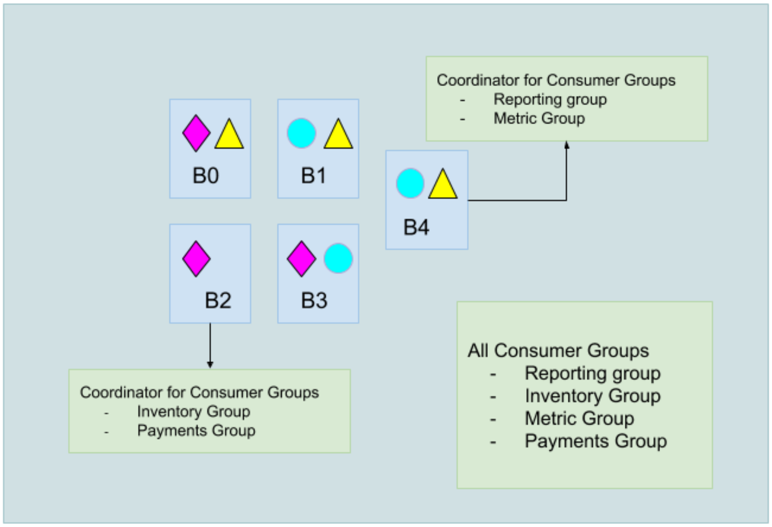
Introduction to Consumer API

Terminology

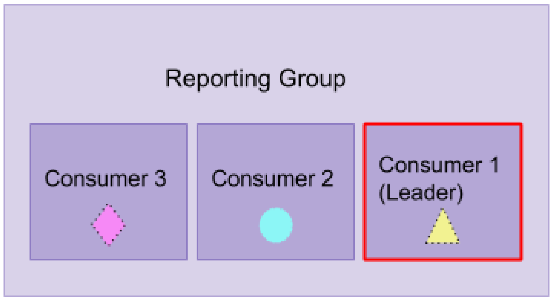
Leader replica/ Read replica



Coordinator



Group leader



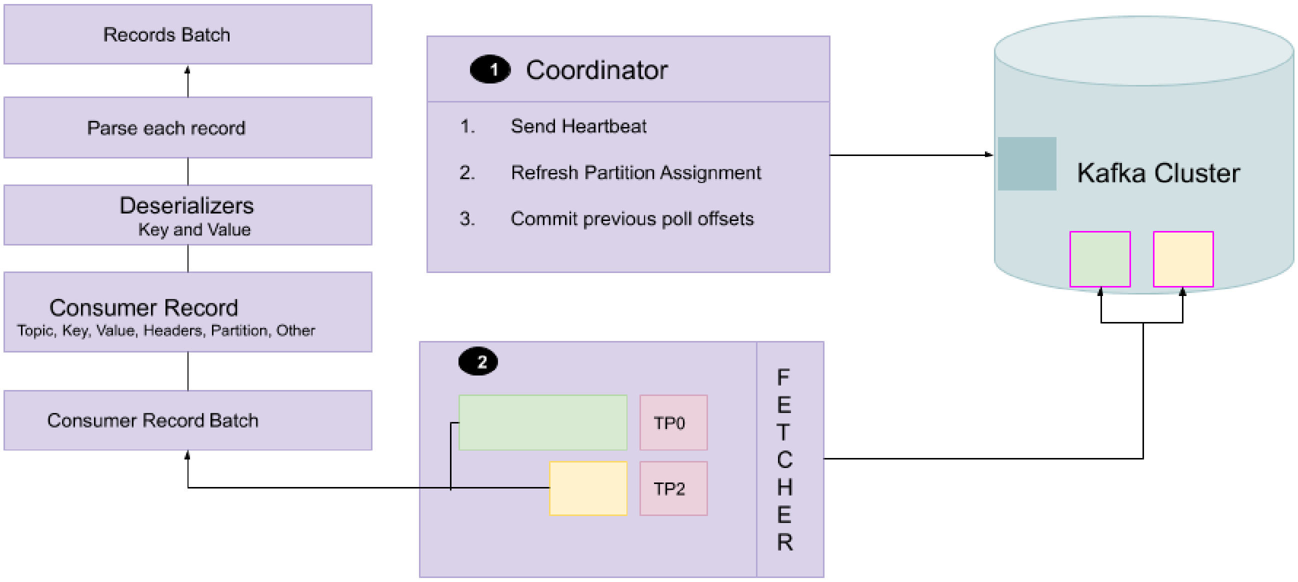
Partitions

Leader replica/ Read replica: One of the replica brokers for partition is marked as Leader replica. Similarly for the Read replica.

Coordinator: One of the brokers is elected as the coordinator for a subset of the consumer groups

Group leader: One of the consumers in a consumer group is marked as Leader of the group.

Consumer API



Consumer Record

Payload to be produced

Deserializers

Converts raw byte stream into key and value

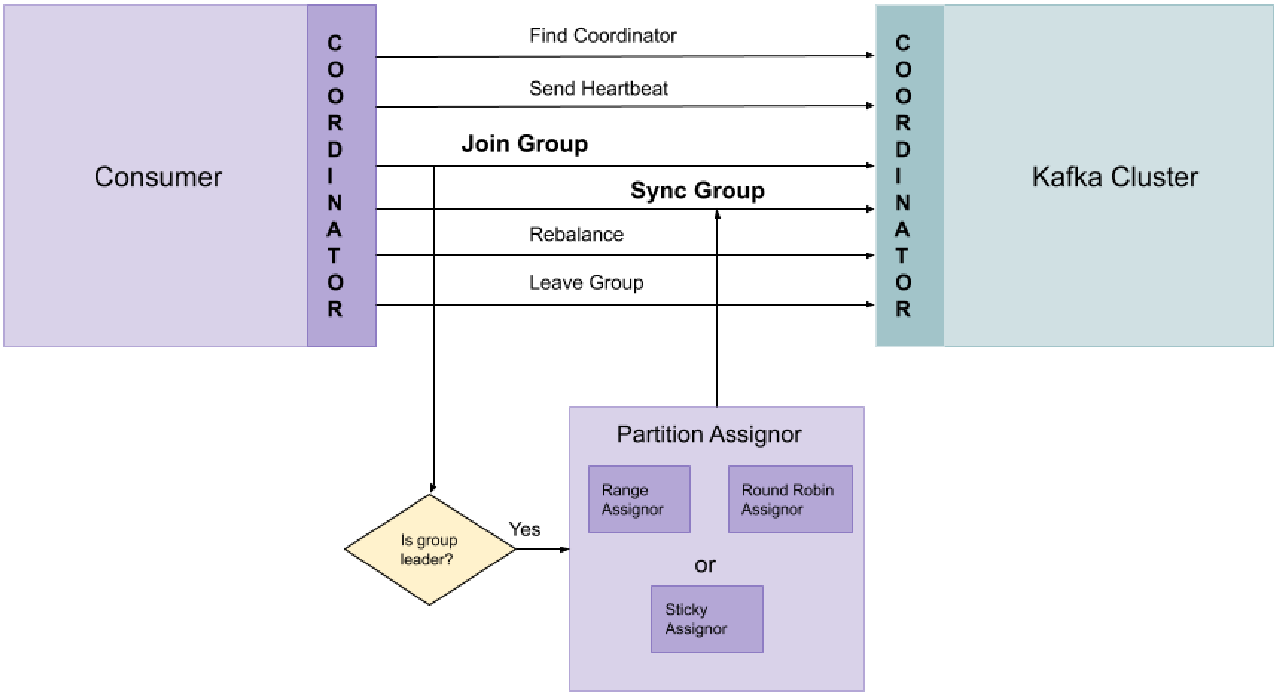
Coordinator

Continuously poll Kafka side Coordinator for metadata updates

Fetcher

Fetch data from partition’s Leader replica / Read replica.

Coordinator in detail



Responsibilities

- Find Coordinator
- Send Heartbeat
- Join Group
- Sync Group
- Rebalance
- Leave Group

Partition Assignor

When a consumer joins a group as a leader, it generates the partition assignments. Using one of the partition assignor strategy

Exercise

Read about KafkaConsumer class in detail

- https://kafka.apache.org/0100/javadoc/index.html?org/apache/kafka/clients/consumer/KafkaConsumer.html

Read about partition assignor strategies

- Range Assignor
- Round Robin Assignor
- Sticky Assignor

Read about below classes

- KafkaConsumer
- ConsumerRecord
- Fetcher
- ConsumerCoordinator

Hands-On

Set up the below project

https://github.com/swathi-kurella/kafka-workshop-series.git
Prerequisites:
Language: Java
Build: Gradle

Create a sample topic

```
bin/kafka-topics.sh --create --topic kafka-workshop-eg --partitions 3 --bootstrap-server
localhost:9092 --replication-factor 1
```

Run the sample Consumer

Start SampleProducer class and provide desired messages to be produced in the input console

Start console producer to produce messages

```
bin/kafka-console-producer.sh --topic kafka-workshop-eg --broker-list localhost:9092
```

Observe console consumer console to view messages