**Content:**

* Group Co-ordinator
* Group Leader
* What happens when a consumer joins a consumer group?
  + FindCoordinator
  + JoinGroup
  + SendGroup
  + Heartbeat
* For Consumer group rebalancing two entities are important:

1. Group Co-ordinator
2. Group Leader
3. **Group Co-ordinator:**

**Brokers** in kafka cluster are assigned as **group co-ordinator** for **subset** of a consumer groups.

Suppose we have a set of 10 **consumer groups,** and we divided them among **3 brokers** into subsets of **3-3-4** consumer groups. The broker which is assigned to the consumer groups is responsible to manage/maintain this list of consumers. And this broker is called as Group Co-ordinator.

Group co-ordinator **initiates** a **rebalance process** call.

Group co-ordinator **communicates** the **new assignment** of partition to all the consumers.

**Note:**

**Until the rebalance is not finished, the consumers within the consumer group(whose rebalance is in progress) will be blocked for any reads of message.**

1. **Group Leader:**

**First consumer** to join a consumer group is called group leader of that consumer group.

Group leader has the list of active members (consumers) in that consumer group.

Group leader **executes** **Rebalance** process.

Group leader **sends** the new strategy of partition to group **co-ordinator.**

* **What happens when a consumer joins consumer group?**

When a consumer starts it sends a **FindCoordinator** request to obtain the group co-ordinator which is responsible for its group.

Then, the consumer initiates the rebalance protocol by sending a **JoinGroup** request.

Now, **all members** of that consumer group will send **SendGroup** request to group co-ordinator to get the new assignment of partition to all the consumers.

Each consumer periodically sends a heartbeat request to **group co-ordinator** to keep its session alive.