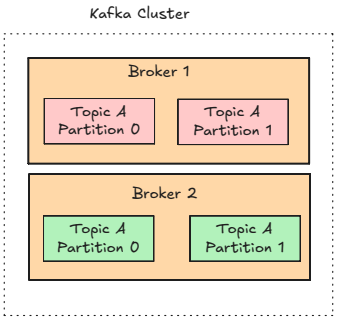
Cluster and brokers

Note:

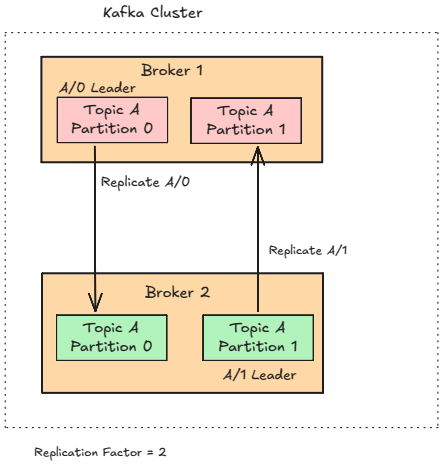
- Kafka is designed to be a distributed system
- Scales horizontally by adding more nodes



What are clusters and brokers?

- A cluster is a group of brokers working together
- The cluster acts a single system to the client
- A broker is an instance of the Kafka server. It's a node in the system

Replication & Leaders



Replication Factor = 2

Replication

- Kafka keeps copies of partitions across brokers (replicas)
- It ensures durability and fault tolerance
- If one broker fails, data still exists elsewhere

Leaders & Followers

- Each partition has one leader replica (handles reads & writes)
- One or more follower replicas (synch data from the leader
- When a leader fails, one of the followers is promoted to leader automatically

Replication Factor

- The replication factor is the number of copies per partition
- In our case, RF = 2 (1 leader + 1 follower)