Lab 9: Kafka MirrorMaker

Welcome to the session 9 lab. The work for this lab is done in `~/kafka-training/labs/lab9` . In this lab, you are going to set up Kafka MirrorMaker.

Find the latest version of this lab [here](#).

Kafka MirrorMaker

Mirroring is replication between clusters. It is called mirroring to not confuse with it with replication. Mirroring is just a consumer/producer pair in two clusters. Mirroring is done my MirrorMaker.

Mirroring gets used for disaster recovery. If a datacenter or region goes down, a hot standby cluster can be used. Conversely, Kafka cluster replication is used for normal fault-tolerance. You could keep a replica cluster in another datacenter or AWS region for disaster recovery. You can also use mirroring for increased throughput for reads. Mirroring could allow you to scale Kafka consumers and take pressure off a critical Kafka cluster that is used for microservices operational messaging.

Lab Objectives

- Show running MirrorMaker to mirror a Kafka Cluster to another Kafka Cluster.
- Show how topics can be configured differently per Cluster
- Demonstrate how to run MirrorMaker
- Demonstrate how to configure MirrorMakers Consumer
- Demonstrate how to configure MirrorMakers Producer

Use the slides as a guide for this lab.

Create scripts to start up three clusters

Each script will start one ZooKeeper and one broker. Each broker will run in its own cluster.

ACTION EDIT bin/start-1st-cluster.sh and follow instructions in file

ACTION EDIT bin/start-2nd-cluster.sh and follow instructions in file

ACTION EDIT bin/start-3rd-cluster.sh and follow instructions in file

Modify ZooKeeper to run on its own ports

Each ZooKeeper instance runs on its own port and is independent of the others.

ACTION - EDIT bin/zookeeper-0.properties and follow instructions in file

ACTION - EDIT bin/zookeeper-1.properties and follow instructions in file

ACTION - EDIT bin/zookeeper-2.properties and follow instructions in file

Modify Broker config to point to different ZooKeepers

Also setup different partition sizes and disable auto create for cluster 0.

ACTION - **EDIT config/server-0.properties and follow instructions in file**

ACTION - **EDIT config/server-1.properties and follow instructions in file**

ACTION - **EDIT config/server-2.properties and follow instructions in file**

Create Two Mirror Maker Config Files for Consumers

ACTION - **EDIT config/mm-consumer-1st.properties and follow instructions in file**

ACTION - **EDIT config/mm-consumer-2nd.properties and follow instructions in file**

Create Two Mirror Maker Config Files for Producers

ACTION - **EDIT config/mm-producer-2nd.properties and follow instructions in file**

ACTION - **EDIT config/mm-producer-3rd.properties and follow instructions in file**

Create Two MirrorMaker Start Scripts

ACTION - **EDIT bin/start-mirror-maker-1st-to-2nd.sh and follow instructions in file**

ACTION - **EDIT bin/start-mirror-maker-2nd-to-3rd.sh and follow instructions in file**

Run it

ACTION - **START - Start up first cluster: bin/start-1st-cluster.sh**

ACTION - **START - In a new terminal, Start up 2nd cluster: bin/start-2nd-cluster.sh**

ACTION - **START - In a new terminal, Start up 3rd cluster: bin/start-3rd-cluster.sh**

ACTION - **WAIT - Wait 30 seconds**

ACTION - CREATE - Create Topic: bin/create-topic.sh

ACTION - START - In a new terminal, start up MirrorMaker for 1st to 2nd mirroring - bin/start-mirror-maker-1st-to-2nd.sh

ACTION - START - In a new terminal, start up Mirror Maker for 2nd to 3rd mirroring - bin/start-mirror-maker-2nd-to-3rd.sh

ACTION - RUN - Run ConsumerMain1stCluster in IDE

ACTION - RUN - Run ConsumerMain2ndCluster in IDE

ACTION - RUN - Run ConsumerMain3rdCluster in IDE

ACTION - RUN - Run StockPriceProducer in IDE

ACTION - WAIT - After 30 Seconds stop StockPriceProducer

ACTION - WAIT - Wait 30 seconds and ensure consumers have same stock prices

Expected results

You should be able to send records from the producer to the broker and this data get replicated to the other servers. The consumers should have the same stock prices in their console.