Objectives

After completing this lab, you will be able to:

- **Download Kafka binaries**
- **Configure the Kafka server to use the KRaft mode**
- **Start the Kafka message broker service**
- **Create a topic**
- **Start a producer**
- **Start a consumer**

Exercise : Configure KRaft and start server

theia@theiadocker-rajendraabro:/home/project$ wget
https://downloads.apache.org/kafka/3.8.0/kafka_2.13-3.8.0.tgz

Wget is linux cmd to download using http or https links.

Tar cmd is used to unzip tar compressed file.

theia@theiadocker-rajendraabro:/home/project$ tar -xzf kafka_2.13-3.8.0.tgz

The cd .. is used to go parent directory. Cd "path or filename" cmd is enter directory.

Navigate to the kafka_2.13-3.8.0 directory.

theia@theiadocker-rajendraabro:/home/project$ cd kafka_2.13-3.8.0

Generate a cluster UUID that will uniquely identify the Kafka cluster
A universally unique identifier (UUID)
theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3
.8.0$ KAFKA_CLUSTER_ID="$(bin/kafka-storage.sh random-uuid)"

KRaft requires the log directories to be configured. Run the following command to configure the log directories passing the cluster ID.

theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3
.8.0$ bin/kafka-storage.sh format -t $KAFKA_CLUSTER_ID -c config/kraft/server.properties

Exception in thread "main" java.lang.RuntimeException: Invalid cluster.id in:
/tmp/kraft-combined-logs/meta.properties. Expected WUhz-TeRSMKIe0ugfHC5DA, but read
94KIYy5uRx2UoALUAw0siA

at
org.apache.kafka.metadata.properties.MetaPropertiesEnsemble.verify(MetaPropertiesEnsemble.java:509)
at kafka.tools.StorageTool$.formatCommand(StorageTool.scala:531)
at kafka.tools.StorageTool$.runFormatCommand(StorageTool.scala:140)
at kafka.tools.StorageTool$.execute(StorageTool.scala:80)
at kafka.tools.StorageTool$.main(StorageTool.scala:53)
at kafka.tools.StorageTool.main(StorageTool.scala)
Now that KRaft is configured, you can start the Kafka server by running $bin/kafka-server-start.sh config/kraft/server.properties

Exercise 3: Create a topic and start producer.

To create a topic named news

theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3.8.0$ bin/kafka-topics.sh --create --topic news --bootstrap-server localhost:9092
Output: Created topic news.

You need a producer to send messages to Kafka. Run the command below to start a producer.
bin/kafka-console-producer.sh --bootstrap-server localhost:9092 --topic news

theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3.8.0$
bin/kafka-console-producer.sh --bootstrap-server localhost:9092 --topic news

>WARNING: A Java agent has been loaded dynamically (/tmp/javaagent-loader-1.3.71.jar)
WARNING: If a serviceability tool is in use, please run with -XX:+EnableDynamicAgentLoading to hide this warning
WARNING: If a serviceability tool is not in use, please run with -Djdk.instrument.traceUsage for more information
WARNING: Dynamic loading of agents will be disallowed by default in a future release

After the producer starts, and you get the '>' prompt, type any text message and press enter.

>Good morning
Good day
Enjoy the Kafka lab>>
>

Exercise 4: Start Consumer

new terminal
theia@theiadocker-rajendraabro:/home/project$ cd kafka_2.13-3.8.0

Run the command below to listen to the messages in the topic news.

theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3.8.0$
bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic news
--from-beginning
>Good morning
Good day
Enjoy the Kafka lab>

see all the messages you sent from the producer appear here.

Exercise 5: Explore Kafka directories

theia@theiadocker-rajendraabro:/home/project$ cd kafka_2.13-3.8.0

the root directory of the server using ls cmd.
ls is cmd to show all files

theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3
.8.0$ ls
LICENSE bin libs logs
NOTICE config licenses site-docs

Notice there is a tmp directory. The kraft-combine-logs inside the tmp directory contains all the logs. To check the logs generated for the topic news run the following command:

theia@theiadocker-rajendraabro:/home/project/kafka_2.13-3.8.0$ ls
/tmp/kraft-combined-logs/news-0
00000000000000000000.index leader-epoch-checkpoint
00000000000000000000.log partition.metadata
00000000000000000000.timeindex