R·I·T

Name: _____

Date: _____

PROF 741

Lab: Kafka using Hortonworks Platform

Introduction

Kafka Lab is the Lab for the course PROF741. Apache Kafka is known for many things, including the ability to process over one million messages per second. The ease of decoupling components makes it appealing to developers as well. In this hands-on lab you will build a custom Kafka cluster in Hortonworks and then you create list topics and transfer in real time. A topic consists of many partitions of messages and is the fundamental unit used in Kafka. Then you create a producer and consumer to check the messages inside the topic in real time.

Lab Goals

1. To be familiar with Kafka Cluster.
2. Using the Kafka cluster to process messages.

Lab Summary

1. Open Virtual Box
2. Start Hortonworks platform
3. Start Kafka services through Ambari portal
4. Create- List topics
5. Transfer messages with producers and consumers

Activity 1 – Open a Virtual Box

Activity 2 – Start Hortonworks 2.6.5 platform

Activity 3 – Open a browser and write http://localhost:8080 to enter to Ambari portal

User name :maria_dev

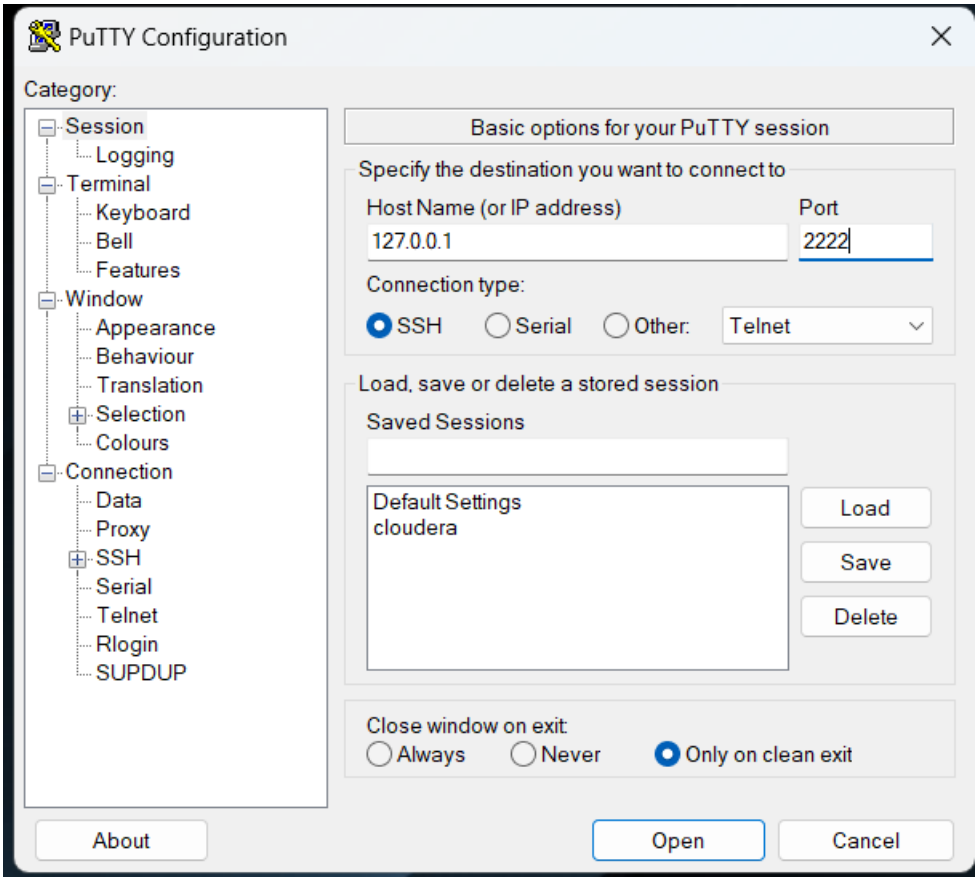
pwd: maria_dev

Then you enter in Ambari portal with all services.

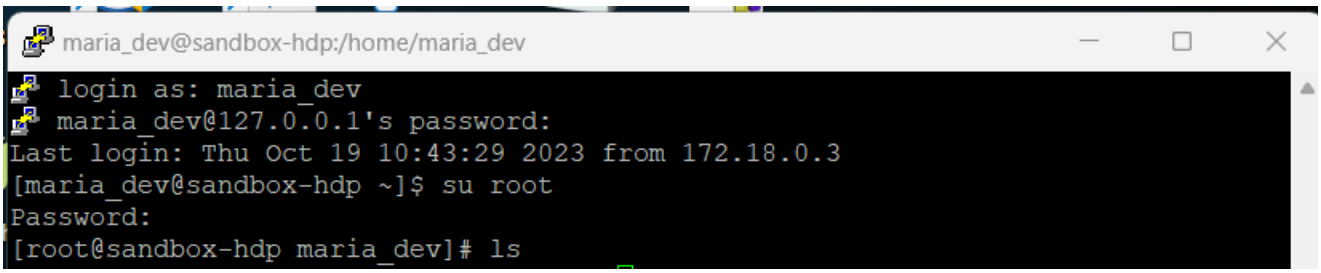
Select Kafka and then tab Service Actions you select Restart all. You need to wait some time in order to start all the services.

Activity 4 – Open Putty application for SSH connection for Producer

(Install Putty software and then run the application)



Press Open and it will open a new window



Enter login as: maria_dev

Pwd: maria_dev

And for full admin privileges we enter su root and insert the password Hadoop.

Then the system will request to change a new password. For example, you can select a new password such as:
quicktechie

Then we write the following command:

[root@sandbox-hdp maria_dev]# cd /usr/hdp/current/kafka-broker

```
[maria_dev@sandbox-hdp ~]$ cd /usr/hdp/current/kafka-broker/
[maria_dev@sandbox-hdp kafka-broker]$ ls
bin  conf  config  doc  examples  libs  LICENSE  logs  NOTICE  pids
```

[root@sandbox-hdp maria_dev]# cd bin

Activity 5: Use this command to create KAFKA topic (SELECT as topic PROF741 or any other different name)

```
[root@sandbox-hdp bin]# ./kafka-topics.sh --create --zookeeper sandbox-hdp.hortonworks.com:2181
 --replication-factor 1 --partitions 1 -topic PROF741
```

Use this command to create a topic named PROF741. You can repeat the same command and insert new topics.

Then you can run these topics to list them.

```
[root@sandbox-hdp bin]# ./kafka-topics.sh --list --zookeeper sandbox-hdp.hortonw
orks.com:2181
ATLAS_ENTITIES
ATLAS_HOOK
PROF741
Welcome
WelcometoPROF741course
__consumer_offsets
```

(Note: ATLAS_ENTITIES and ATLAS_HOOK are metadata files produced automatically from the HDP platform)

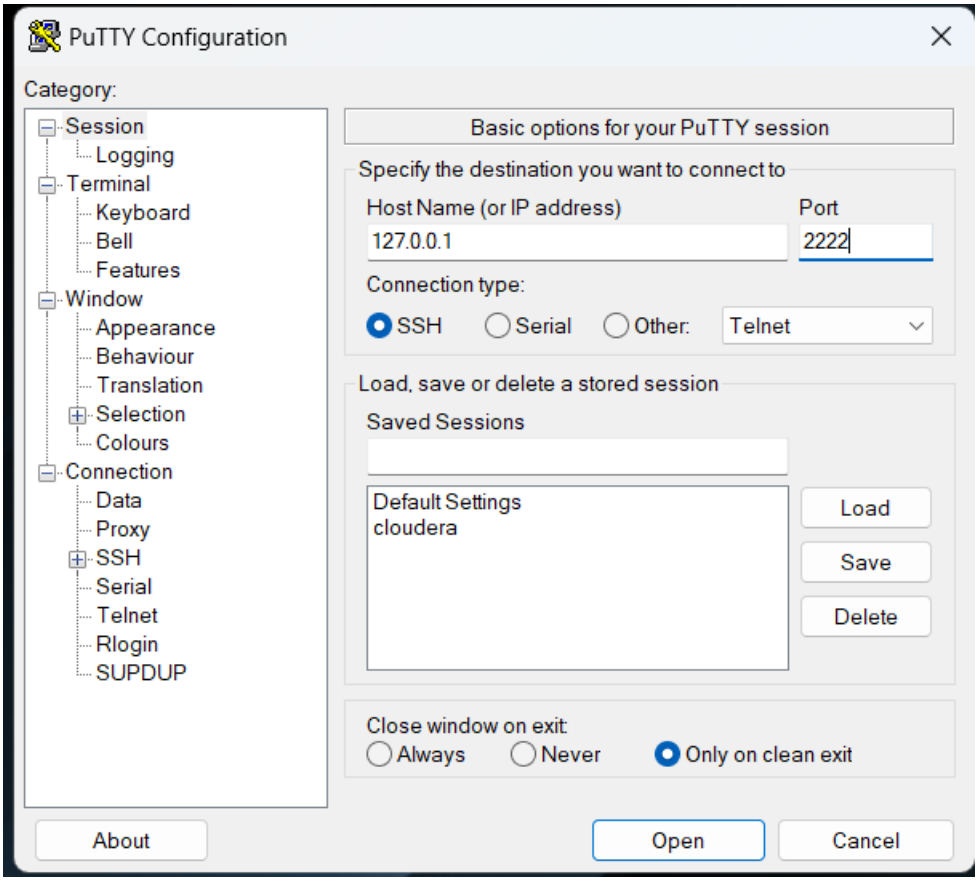
Activity 6: Now I called kafka.producer.sh to create messages in the specific topic that I have created earlier.

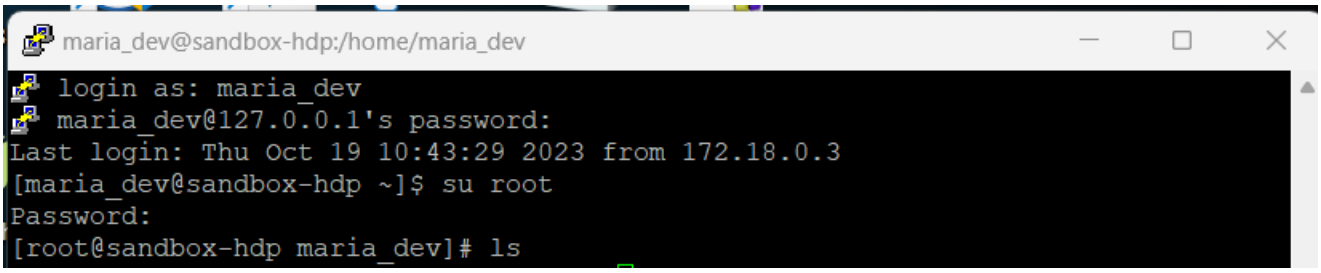
```
[root@sandbox-hdp bin]# ./kafka-console-producer.sh --broker-list sandbox-hdp.ho
rtonworks.com:6667 --topic PROF741
>Finally I finish my course
>Kafka cluster is working perfectly
>
```

We leave the terminal open related to producer

PART 2: Consumer Side

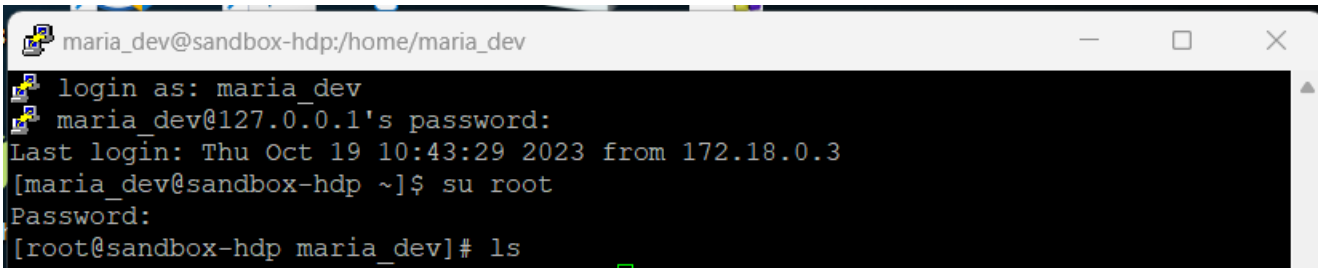
Activity 7 – Open a new putty session for the Consumer





The same steps as the previous activities

Press Open and it will open a new window



Enter login as: maria_dev
Pwd: maria_dev

For the full admin privileges we type su root and insert the password that you created.

Then we write the following command:

[root@sandbox-hdp maria_dev]# cd /usr/hdp/current/kafka-broker

[root@sandbox-hdp maria_dev]# cd bin

ACTIVITY 8: Use the following command to create a consumer that retrieves messages from the topic: PROF741

```
[root@sandbox-hdp bin]# ./kafka-console-consumer.sh --zookeeper localhost:2181 -
-topic PROF741 --from-beginning
```

After running this command, you see exactly the messages that write in producer side.

ACTIVITY 9: Validating the real time streaming

Keep open the two terminals (producer and consumer)

Then you can write a message on the producer's first screen and receive the message on the consumer's screen.

Practice Lab:

1) Create one topic- Your name
2) Create messages for the topic- For Spring 2024 we have PROF741 course
3) List messages for the topic
4) Produce messages
5) Consume messages
6) Validate real time message exchange

Present all the results with screenshots.



END OF THE LAB