
Lab: Creating and Managing Kafka Topics

Exercising the Kafka CLI

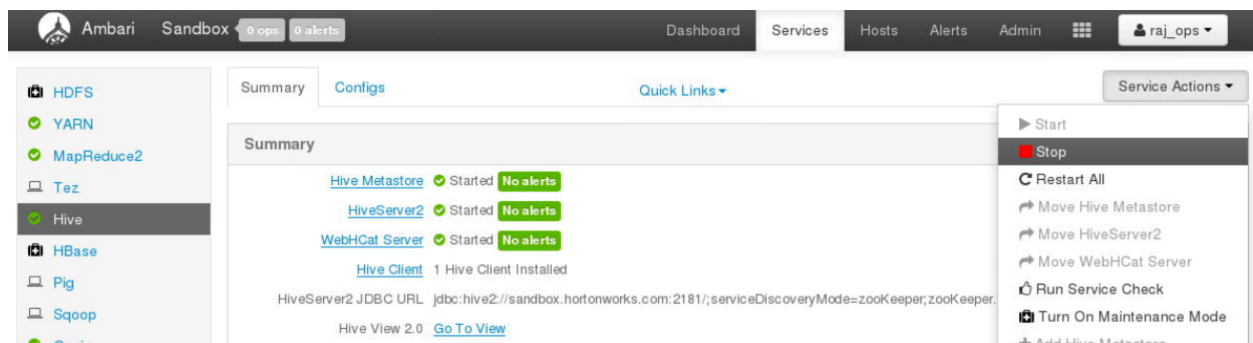
About this Lab

Objective:	Use the Kafka scripts to perform common operations related to Kafka topics
File locations:	n/a
Successful outcome:	Have gained familiarity with common Kafka script operations
Before you begin	n/a
Related lesson:	Kafka Architecture

Start the Kafka Broker

Within the remote desktop, launch the Firefox browser and go to `http://127.0.0.1:8081` and login as user `raj_ops` with password `raj_ops` to **stop the Hive, Oozie, Flume, Spark2 and Zeppelin Notebook services** and **start Kafka, Storm and HBase**.

HINT: Click on the service name on the left-nav and then select Stop or Start appropriately from the Service Actions pull-down menu



You should see successful reporting of five services being stopped and three being started.

Operations	Start Time	Duration	Show: All (10)
✓ Start HBase	Today 17:10	68.25 secs	<div><div></div></div> 100% ▶
✓ Start Storm	Today 17:10	13.64 secs	<div><div></div></div> 100% ▶
✓ Start Kafka	Today 17:10	3.23 secs	<div><div></div></div> 100% ▶
✓ Stop Zeppelin Notebook	Today 17:09	15.27 secs	<div><div></div></div> 100% ▶
✓ Stop Spark2	Today 17:08	1.76 secs	<div><div></div></div> 100% ▶
✓ Stop Flume	Today 17:06	686 ms	<div><div></div></div> 100% ▶
✓ Stop Oozie	Today 17:06	6.73 secs	<div><div></div></div> 100% ▶
✓ Stop Hive	Today 17:06	32.26 secs	<div><div></div></div> 100% ▶

Switch to the Appropriate User

The cluster being used is the publicly available HDP Sandbox and this lab will be completed as user `maria_dev`. Ensure you are logged into the sandbox as this user. The following steps assume you started a new Terminal.

```
[root@ip-172-30-0-164 ~]# ssh -p 2222 root@127.0.0.1
root@127.0.0.1's password:
Last login: Thu Jun  1 20:58:25 2017 from 172.17.0.1
[root@sandbox ~]# su - maria_dev
[maria_dev@sandbox ~]$ pwd
/home/maria_dev
[maria_dev@sandbox ~]$
```

Create a Topic

Create a new Kafka topic.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-topics.sh --
create --zookeeper sandbox.hortonworks.com:2181 --replication-factor 1 --
partitions 1 --topic mariaTopic
Created topic "mariaTopic".
[maria_dev@sandbox ~]$
```

List All Topics

List all existing Kafka topics.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-topics.sh --
list --zookeeper sandbox.hortonworks.com:2181
ATLAS_HOOK
mariaTopic
[maria_dev@sandbox ~]$
```

Add Data to a Topic

Leverage the console testing harness to produce data to the topic you just created.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-console-
producer.sh --broker-list sandbox.hortonworks.com:6667 --topic mariaTopic
Just type some data and then hit the <enter> key
to create another line (aka message) into the topic
Here is a third line. Once done, you can just hit
CTL-C on an empty line to quit the harness
^C[maria_dev@sandbox ~]$
```

Read Data from a Topic

Use the console testing harness to consume data from a topic. Hit CTL-C to stop the script.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-console-
consumer.sh --bootstrap-server sandbox.hortonworks.com:6667 --topic
mariaTopic --from-beginning
Just type some data and then hit the <enter> key
to create another line (aka message) into the topic
Here is a third line. Once done, you can just hit
CTL-C on an empty line to quit the harness
^CProcessed a total of 4 messages
[maria_dev@sandbox ~]$
```

Perform Alterations on a Topic

The `--alter` switch on the `kafka-configs.sh` script can allow you to change configurations for individual topics. One use case would be to empty out messages from a topic. There is no such command in Kafka, but messages are guaranteed to be around for a configurable amount of time. Change the retention period to a single second, verify the setting was changed and then see if the messages are removed.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-configs.sh --
zookeeper sandbox.hortonworks.com:2181 --alter --entity-type topics --entity-
name mariaTopic --add-config retention.ms=1000
Updated config for entity: topic 'mariaTopic'.
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-configs.sh --
zookeeper sandbox.hortonworks.com:2181 --describe --entity-type topics --
entity-name mariaTopic
Configs for topic 'mariaTopic' are retention.ms=1000
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-console-
consumer.sh --bootstrap-server sandbox.hortonworks.com:6667 --topic
mariaTopic --from-beginning
Just type some data and then hit the <enter> key
to create another line (aka message) into the topic
Here is a third line. Once done, you can just hit
CTL-C on an empty line to quit the harness
^CProcessed a total of 4 messages
[maria_dev@sandbox ~]$ date
Fri Jun  2 19:47:31 UTC 2017
[maria_dev@sandbox ~]$
```

Note above that the older messages were not removed right away. Also, note below that they were still present a few minutes later. To simulate a real-world scenario of messages continually coming in, add a few more messages from the console producer and then verify that the old messages were removed as well as the new ones just added.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-console-
producer.sh --broker-list sandbox.hortonworks.com:6667 --topic mariaTopic
add a few records which will
likely help the expired messages
be deleted (along with these since it is
set to only keep things around for 1 sec!!)
^C[maria_dev@sandbox ~]$
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-console-
consumer.sh --bootstrap-server sandbox.hortonworks.com:6667 --topic
mariaTopic --from-beginning
^CProcessed a total of 0 messages
[maria_dev@sandbox ~]$
```

Delete a Topic

Use the CLI tools to remove an existing topic.

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-topics.sh --
zookeeper sandbox.hortonworks.com:2181 --delete -topic mariaTopic
Topic mariaTopic is marked for deletion.
Note: This will have no impact if delete.topic.enable is not set to true.
```

```
[maria_dev@sandbox ~]$ /usr/hdp/current/kafka-broker/bin/kafka-topics.sh --  
list --zookeeper sandbox.hortonworks.com:2181  
ATLAS_H00K  
__consumer_offsets  
lestertester  
mariaTopic - marked for deletion  
[maria_dev@sandbox ~]$
```

Summary

You should now be able to perform basic Kafka operations via the provided CLI tools.