

ASSIGNMENT 22.1

Task 1:

Create a kafka topic named KeyLessTopic.

Inside KeyLessTopic insert following data:

```
{"name":"John", "exp":16}
{"name":"Finn", "exp":20}
{"name":"Cylin", "exp":18}
{"name":"Mark", "exp":2}
{"name":"Akshay", "exp":14}
```

Task 2:

Create a console consumer that reads KeyLessTopic from beginning

Task 3:

Create a kafka topic named KeyedTopic. Inside KeyedTopic insert following data:

The part before comma(,) should be treated as key and after comma(,) should be treated as value

```
{"name":"John"},{"exp":16}
{"name":"Finn"},{"exp":20}
{"name":"Cylin"},{"exp":18}
{"name":"Mark"},{"exp":2}
{"name":"Akshay"},{"exp":14}
```

Task 4:

Create a console consumer that reads KeyedTopic from beginning

The key and value should be separated by '-'

SOLUTION

First we start the zookeeper for Kafka cluster management

```
sacadgild.mmisra ~]$ $KAFKA_HOME/bin/zookeeper-server-start.sh
$KAFKA_HOME/config/zookeeper.properties
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
```

Then we start Kafka broker with default properties

```
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-server-start.sh
$KAFKA_HOME/config/server.properties
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
```

```
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
[2018-09-24 12:59:46,844] INFO starting (kafka.server.KafkaServer)
[2018-09-24 12:59:46,863] INFO [ThrottledRequestReaper-Fetch], Starting
(kafka.server.ClientQuotaManager$ThrottledRequestReaper)
[2018-09-24 12:59:46,864] INFO [ThrottledRequestReaper-Produce], Starting
(kafka.server.ClientQuotaManager$ThrottledRequestReaper)
[2018-09-24 12:59:46,869] INFO Connecting to zookeeper on localhost:2181
(kafka.server.KafkaServer)
[2018-09-24 12:59:46,901] INFO Starting ZkClient event thread.
(org.I0Itec.zkclient.ZkEventThread)
[2018-09-24 12:59:46,930] INFO Waiting for keeper state SyncConnected
(org.I0Itec.zkclient.ZkClient)
[2018-09-24 12:59:46,953] INFO zookeeper state changed (SyncConnected)
(org.I0Itec.zkclient.ZkClient)
[2018-09-24 12:59:47,159] INFO Cluster ID = a74empLVTNkc3F8et25P2g
(kafka.server.KafkaServer)
[2018-09-24 12:59:47,407] INFO Loading logs. (kafka.log.LogManager)
[2018-09-24 12:59:47,478] INFO Completed load of log __consumer_offsets-32 with 1 log
segments and log end offset 0 in 37 ms (kafka.log.Log)
[2018-09-24 12:59:47,489] INFO Completed load of log __consumer_offsets-34 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
[2018-09-24 12:59:47,494] INFO Completed load of log __consumer_offsets-11 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
[2018-09-24 12:59:47,500] INFO Completed load of log __consumer_offsets-25 with 1 log
segments and log end offset 0 in 2 ms (kafka.log.Log)
[2018-09-24 12:59:47,506] INFO Completed load of log __consumer_offsets-46 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
[2018-09-24 12:59:47,511] INFO Completed load of log __consumer_offsets-13 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
[2018-09-24 12:59:47,519] INFO Completed load of log __consumer_offsets-35 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
[2018-09-24 12:59:47,526] INFO Completed load of log __consumer_offsets-31 with 1 log
segments and log end offset 0 in 2 ms (kafka.log.Log)
[2018-09-24 12:59:47,532] INFO Completed load of log __consumer_offsets-41 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
[2018-09-24 12:59:47,538] INFO Completed load of log __consumer_offsets-24 with 1 log
segments and log end offset 0 in 1 ms (kafka.log.Log)
```

We copy the messages to be sent into a file called `kafka_messages.txt` so that we can send all together

```
[acadgild.mmisra ~]$ cat kafka_messages.txt
{"name":"John"}, {"exp":16}
{"name":"Finn"}, {"exp":20}
{"name":"Cylin"}, {"exp":18}
{"name":"Mark"}, {"exp":2}
{"name":"Akshay"}, {"exp":14}
```

Task#1 - Creating a topic called KeyLessTopic

```
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-topics.sh --create --topic KeyLessTopic --
zookeeper localhost:2181 --partitions 1 --replication-factor 1
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
```

```
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
Created topic "KeyLessTopic".
[acadgild.mmisra ~]$
```

Now we can list kafka topics to verify that our topic has been created

```
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-topics.sh --list --zookeeper localhost:2181
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
KeyLessTopic
__consumer_offsets
```

Now we create a producer to publish the messages on the KeyLessTopic and use our file kafka_messages.txt to provide the messages

```
[acadgild.mmisra ~]$
[acadgild.mmisra ~]$
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-console-producer.sh --broker-list
localhost:9092 --topic KeyLessTopic < kafka_messages.txt
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
[acadgild.mmisra ~]$
```

Task#2 Now we create a console consumer for the same topic to receive the messages from beginning. Since we are not using Keys in this case, print.key option is set to false. We see that all messages from producer are delivered to consumer

```
[acadgild.mmisra ~]$
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-console-consumer.sh --topic KeyLessTopic --
from-beginning --zookeeper localhost:2181 --property print.key=false
Using the ConsoleConsumer with old consumer is deprecated and will be removed in a
future major release. Consider using the new consumer by passing [bootstrap-server]
instead of [zookeeper].
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
```

SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
 SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
 ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
 logging only errors to the console. Set system property
 'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
 internal initialization logging.
 {"name":"John"}, {"exp":16}
 {"name":"Finn"}, {"exp":20}
 {"name":"Cylin"}, {"exp":18}
 {"name":"Mark"}, {"exp":2}
 {"name":"Akshay"}, {"exp":14}

Task#3 We create a new topic called KeyedTopic to publish the messages as key value pair

```
[acadgild.mmisra ~]$
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-topics.sh --create --topic KeyedTopic --
zookeeper localhost:2181 --partitions 1 --replication-factor 1
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple\_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
Created topic "KeyedTopic".
```

Now we can list kafka topics to verify that our topic has been created

```
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-topics.sh --list --zookeeper localhost:2181
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-
0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple\_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
KeyLessTopic
KeyedTopic
__consumer_offsets
```

Now we create a producer to publish the messages on the KeyedTopic and use our file kafka_messages.txt to provide the messages. We also provide extra options to the command to send messages as key/value pair and to use “,” as the separator between key and value

```
[acadgild.mmisra ~]$
[acadgild.mmisra ~]$
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-console-producer.sh \
> --broker-list localhost:9092 \
> --topic KeyedTopic \
> --property "parse.key=true" \
> --property "key.separator=," \
> < kafka_messages.txt
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
```

```
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
[acadgild.mmisra ~]$
```

Task#4 We create a console consumer for the “KeyedTopic” to receive the messages from beginning. Since are expecting to receive messages in the form of Key/Value pair, we provide extra options to the command to print the key and the values and use key.separator as “-”

```
[acadgild.mmisra ~]$ $KAFKA_HOME/bin/kafka-console-consumer.sh --topic KeyedTopic --
from-beginning \
> --zookeeper localhost:2181 --property print.key=true --property "parse.key=true" \
> --property "key.separator=-"
Using the ConsoleConsumer with old consumer is deprecated and will be removed in a
future major release. Consider using the new consumer by passing [bootstrap-server]
instead of [zookeeper].
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [file:/home/acadgild/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/acadgild/install/kafka/kafka_2.12-0.10.1.1/libs/slf4j-log4j12-1.7.21.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
ERROR StatusLogger No log4j2 configuration file found. Using default configuration:
logging only errors to the console. Set system property
'org.apache.logging.log4j.simplelog.StatusLogger.level' to TRACE to show Log4j2
internal initialization logging.
{"name":"John"}-{"exp":16}
{"name":"Finn"}-{"exp":20}
{"name":"Cylin"}-{"exp":18}
{"name":"Mark"}-{"exp":2}
{"name":"Akshay"}-{"exp":14}
```

Conclusion: we see that keys and values are separated and printed using “-” as the separator.