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**Github Repo Links:**

<https://github.com/CodingCookieRookie/CS3219_TASKD>

**Successful implementation of Pub-Sub messaging system using Apache Kafka**

1) git clone https://github.com/CodingCookieRookie/CS3219\_TASKD.git

[2) In the “kafka” folder, START THE KAFKA ENVIRONMENT](https://kafka.apache.org/quickstart#quickstart_startserver)

*NOTE: Your local environment must have Java 8+ installed.*

$ bin/zookeeper-server-start.sh config/zookeeper.properties

3) CREATE A TOPIC TO STORE YOUR EVENTS

$ bin/kafka-topics.sh --create --topic quickstart-events --partitions 1 --replication-factor 1 --bootstrap-server localhost:9092

4) WRITE EVENTS TO TOPIC

$ bin/kafka-console-producer.sh --topic quickstart-events --bootstrap-server localhost:9092

5) READ THE EVENTS

$ bin/kafka-console-consumer.sh --topic quickstart-events --from-beginning --bootstrap-server localhost:9092

Text

Description automatically generated

**Successful management of the failure of the master node in the cluster, i.e. another node takes over as master node**

**Diagram

Description automatically generated**

1. Start 3 brokers by running

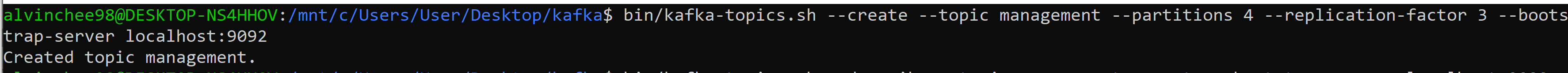
**bin/kafka-server-start.sh config/server.properties**

**bin/kafka-server-start.sh config/server-1.properties**

**bin/kafka-server-start.sh config/server-2.properties**

1. Create a topic

**bin/kafka-topics.sh --create --topic test-topic-replicated --partitions 3 --replication-factor 3 --bootstrap-server localhost:9092**



1. Describe topic partitions and their corresponding leaders

**bin/kafka-topics.sh --describe --topic test-topic-replicated --bootstrap-server localhost:9092**

Text

Description automatically generated with medium confidence

**As we can see, partition 2’s leader is broker 0**

1. Now we shall kill off broker 0 by using control + c

Text

Description automatically generated

1. Describe topic again. As we can see, partition 2’s leader has been changed to broker 2

A picture containing graphical user interface

Description automatically generated

1. Now we try doing the pub-sub service with consumer and producer and test if it works

**bin/kafka-console-producer.sh --topic test-topic-replicated –-broker-list --bootstrap-server localhost:9092**

**bin/kafka-console-producer.sh --topic test-topic-replicated –-broker-list --bootstrap-server localhost:9092**

A screenshot of a computer

Description automatically generated

1. After killing broker 0, the pub-sub service still works after broker 2 replaces broker 0 as the leader