

## Submission for Task D

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Github Repo: [https://github.com/pangpuncake/CS3219\\_OTOT\\_D](https://github.com/pangpuncake/CS3219_OTOT_D)

## D

Please refer to the README.md for more the commands or the screenshots provided.

### Setup cluster

```
OTOT-D $ docker compose up -d
[+] Running 7/7
  :: Network otot-d_default Created
  :: Container zookeeper-3 Started
  :: Container zookeeper-1 Started
  :: Container zookeeper-2 Started
  :: Container kafka-2 Started
  :: Container kafka-1 Started
  :: Container kafka-3 Started
```

### Create topic

```
OTOT-D $ docker exec kafka-1 kafka-topics --bootstrap-server kafka-1:9092 --create --replication-factor 2 --partitions 2 --topic test
Created topic test.
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
OTOT-D $
```

### Describe topic

```
OTOT-D $ docker exec kafka-1 kafka-topics --bootstrap-server kafka-1:9092 --describe --topic test
Topic: test      TopicId: zqc_E98_RFienHY8n4v9Pg PartitionCount: 2      ReplicationFactor: 2      Configs:
Topic: test      Partition: 0      Leader: 2      Replicas: 2,1      Isr: 2,1
Topic: test      Partition: 1      Leader: 3      Replicas: 3,2      Isr: 3,2
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
OTOT-D $
```

### Write (left) / Read (right) topic

```
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
OTOT-D $ docker exec -ti kafka-1 /bin/kafka-console-producer --bootstrap-server kafka-1:9092 --topic test
>hello
>world
^C

(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
OTOT-D $ docker exec -ti kafka-1 /bin/kafka-console-consumer --bootstrap-server kafka-1:9092 --topic test --from-beginning
hello
world
^C
```

## Kill Leader

```
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
● OTOT-D $ docker exec kafka-1 kafka-topics --bootstrap-server kafka-1:9092 --describe --topic test
Topic: test      TopicId: zqc_E98_RFienHY8n4v9Pg PartitionCount: 2      ReplicationFactor: 2   Configs:
Topic: test      Partition: 0      Leader: 2      Replicas: 2,1  Isr: 2,1
Topic: test      Partition: 1      Leader: 3      Replicas: 3,2  Isr: 3,2
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
● OTOT-D $ docker stop kafka-2
kafka-2
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
● OTOT-D $ docker exec kafka-1 kafka-topics --bootstrap-server kafka-1:9092 --describe --topic test
Topic: test      TopicId: zqc_E98_RFienHY8n4v9Pg PartitionCount: 2      ReplicationFactor: 2   Configs:
Topic: test      Partition: 0      Leader: 1      Replicas: 2,1  Isr: 1
Topic: test      Partition: 1      Leader: 3      Replicas: 3,2  Isr: 3
(base) waikye@Pangs-MBP:~/OneDrive - National University of Singapore/Y4S1/CS3219/Assignment/OTOT-D
○ OTOT-D $
```

Partition 0 - leader kafka-2 killed, kafka-1 took over.

## Write from kafka-1

```
⊗ OTOT-D $ docker exec -ti kafka-1 /bin/kafka-console-producer --bootstrap-server kafka-1:90
92 --topic test
>hello1
>world1
```

## Write from kafka-3

```
○ OTOT-D $ docker exec -ti kafka-3 /bin/kafka-console-producer --bootstrap-server kafka-3:90
92 --topic test
>hello2
>world2
>
```

The topic still contains all the messages despite the leader being deleted due to the replication done on the other kafka instances.

```
○ OTOT-D $ docker exec -ti kafka-3 /bin/kafka-console-consumer --bootstrap-server kafka-3:
9092 --topic test --from-beginning
hello
world
hello1
world1
hello2
world2
█
```