

Apartado Kafka

1. Localizar el archivo que contiene la configuración del servidor de Zookeeper y levantar dicho servidor utilizando la configuración por defecto. ¿Qué puerto es el utilizado por defecto por Zookeeper?

El archivo es: /home/j/kafka_2.11-2.4.1/config/zookeeper.properties

El puerto utilizado por defecto es: 2181

```
In [42]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/zookeeper-server-start.sh /home/j/kafka_2.11-2.4.1/config/zooke
Process is interrupted.
```

2. Localizar el archivo que contiene la configuración de un broker y levantar dicho broker. ¿Qué puerto es el utilizado por defecto por los brokers?

El archivo es: /home/j/kafka_2.11-2.4.1/config/server.properties

El puerto utilizado por defecto es: 9092

```
In [33]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-server-start.sh /home/j/kafka_2.11-2.4.1/config/server.pr
Process is interrupted.
```

3. Crear un topic nuevo con el nombre "initial", con una partición y un factor de replicación igual a 1.

```
In [47]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --create --zookeeper localhost:2181 --topic ini
Created topic initial.
```

4. Describir el topic "inital" y comentar los resultados que se obtienen.

```
In [36]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --describe initial --bootstrap-server localhost
Topic: initial PartitionCount: 1 ReplicationFactor: 1 Configs: segment.bytes=10737418
24
Topic: initial Partition: 0 Leader: 0 Replicas: 0 Isr: 0
```

5. Arrancar un productor sobre el topic "initial"

```
In [37]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-producer.sh --broker-list localhost:9092 --topic
>
```

6. Arrancar un consumidor sobre el topic "initial" que consuma todos los mensajes desde el principio

```
sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic initial
--from-beginning
```

7. Generar algunos mensajes en el productor levantado en el ejercicio 5 y observar cómo se reciben en el consumidor levantado en el ejercicio 6.

Comentar la salida obtenida. Detener a continuación el productor y el consumidor.

En este caso, lo lanzo por consola de comandos para poder introducir mensajes.

- Introduzco las siguientes frases:

Esta frase pertenece a la práctica 3, ejercicio 6.

Es una práctica sobre Kafka.

- La salida que se obtiene es:

Esta frase pertenece a la práctica 3, ejercicio 6.

Es una práctica sobre Kafka.

- Detenemos el productor y consumidor matando los procesos de background.

8. Crear un topic nuevo con el nombre "testRep", con dos particiones y un factor de replicación igual a 2. ¿Qué sucede? ¿Cuál es la razón?

```
In [40]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --create --zookeeper localhost:2181 --topic testRep

Error while executing topic command : Replication factor: 2 larger than available brokers: 1.
[2020-12-17 14:34:21,576] ERROR org.apache.kafka.common.errors.InvalidReplicationFactorException: Replication factor: 2 larger than available brokers: 1.
(kafka.admin.TopicCommand$)
```

El resultado nos dice que no podemos un topic con un factor de replicación mayor al número de brokers disponibles.

9. Detener el broker levantado en el ejercicio 2

```
In [41]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-server-stop.sh /home/j/kafka_2.11-2.4.1/config/server.properties
```

10. Levantar tres brokers distintos: generar nuevos ficheros de configuración para cada uno de ellos indicando las modificaciones que han sido necesarias. Los identificadores de los brokers serán 0,1 y 2.

- Config del Broker 0
 - Llamamos al fichero server_0.properties:

Dejaré todo por defecto. Al identificador le llamaré:

Server Basics

The id of the broker. This must be set to a unique integer for each broker.

broker.id=0

listeners=PLAINTEXT://:9092

log.dirs=/tmp/kafka-logs/broker_0

```
In [44]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-server-start.sh /home/j/kafka_2.11-2.4.1/config/server_0.properties

Process is interrupted.
```

- Config del Broker 1
 - Llamamos al fichero server_1.properties

Dejaré todo por defecto. Al identificador le llamaré:

Server Basics

The id of the broker. This must be set to a unique integer for each broker.

broker.id=1

listeners=PLAINTEXT://:9093

log.dirs=/tmp/kafka-logs/broker_1

```
In [ ]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-server-start.sh /home/j/kafka_2.11-2.4.1/config/server_1.
```

- Config del Broker 2
 - Llamamos al fichero server_1.properties

Server Basics

The id of the broker. This must be set to a unique integer for each broker.

broker.id=2

listeners=PLAINTEXT://:9094

log.dirs=/tmp/kafka-logs/broker_2

```
In [ ]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-server-start.sh /home/j/kafka_2.11-2.4.1/config/server_3.
```

11. Describir el topic "initial" comentarlos resultados que se obtienen.

```
In [49]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --describe initial --bootstrap-server localhost
```

```
Topic: initial PartitionCount: 1 ReplicationFactor: 1 Configs: segment.bytes=10737418
24
Topic: initial Partition: 0 Leader: 2 Replicas: 2 Isr: 2
Topic: __consumer_offsets PartitionCount: 50 ReplicationFactor: 1 Configs: compre
ssion.type=producer, cleanup.policy=compact, segment.bytes=104857600
Topic: __consumer_offsets Partition: 0 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 1 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 2 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 3 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 4 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 5 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 6 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 7 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 8 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 9 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 10 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 11 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 12 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 13 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 14 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 15 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 16 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 17 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 18 Leader: 0 Replicas: 0 Isr: 0
Topic: __consumer_offsets Partition: 19 Leader: 0 Replicas: 0 Isr: 0
```

Topic: __consumer_offsets	Partition: 20	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 21	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 22	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 23	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 24	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 25	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 26	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 27	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 28	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 29	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 30	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 31	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 32	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 33	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 34	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 35	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 36	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 37	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 38	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 39	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 40	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 41	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 42	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 43	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 44	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 45	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 46	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 47	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 48	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 49	Leader: 0	Replicas: 0	Isr: 0

Como podemos observar, hay 50 particiones

12. Crear un topic nuevo con el nombre "testOrder1", con 1 particion y factor de replicación igual a 3

```
In [50]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --create --zookeeper localhost:2181 --topic testOrder1

Created topic testOrder1.
```

13. Crear un topic nuevo con el nombre "testOrder2", con 3 particiones y factor de replicación igual a 3.

```
In [51]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --create --zookeeper localhost:2181 --topic testOrder2

Created topic testOrder2.
```

14. Describir los topics "testOrder1" y "testOrder2" y comentar los resultados que se obtienen

```
In [52]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --describe testOrder1 --bootstrap-server localhost:9092

Topic: testOrder1      PartitionCount: 1      ReplicationFactor: 3      Configs: segment.bytes=1073741824
      Topic: testOrder1      Partition: 0      Leader: 1      Replicas: 1,2,0 Isr: 1,2,0
Topic: testOrder2      PartitionCount: 3      ReplicationFactor: 3      Configs: segment.bytes=1073741824
      Topic: testOrder2      Partition: 0      Leader: 1      Replicas: 1,0,2 Isr: 1,0,2
      Topic: testOrder2      Partition: 1      Leader: 2      Replicas: 2,1,0 Isr: 2,1,0
      Topic: testOrder2      Partition: 2      Leader: 0      Replicas: 0,2,1 Isr: 0,2,1
Topic: initial          PartitionCount: 1      ReplicationFactor: 1      Configs: segment.bytes=1073741824
      Topic: initial          Partition: 0      Leader: 2      Replicas: 2      Isr: 2
Topic: __consumer_offsets      PartitionCount: 50      ReplicationFactor: 1      Configs: compression.type=producer,cleanup.policy=compact,segment.bytes=104857600
      Topic: __consumer_offsets      Partition: 0      Leader: 0      Replicas: 0      Isr: 0
```

Topic: __consumer_offsets	Partition: 1	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 2	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 3	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 4	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 5	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 6	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 7	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 8	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 9	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 10	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 11	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 12	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 13	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 14	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 15	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 16	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 17	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 18	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 19	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 20	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 21	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 22	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 23	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 24	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 25	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 26	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 27	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 28	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 29	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 30	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 31	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 32	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 33	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 34	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 35	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 36	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 37	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 38	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 39	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 40	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 41	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 42	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 43	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 44	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 45	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 46	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 47	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 48	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 49	Leader: 0	Replicas: 0	Isr: 0

```
In [53]: %sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --describe testOrder2 --bootstrap-server localhost:9092
```

```
Topic: testOrder1      PartitionCount: 1      ReplicationFactor: 3      Configs: segment.bytes=1073741824
      Topic: testOrder1      Partition: 0      Leader: 1      Replicas: 1,2,0 Isr: 1,2,0
Topic: testOrder2      PartitionCount: 3      ReplicationFactor: 3      Configs: segment.bytes=1073741824
      Topic: testOrder2      Partition: 0      Leader: 1      Replicas: 1,0,2 Isr: 1,0,2
      Topic: testOrder2      Partition: 1      Leader: 2      Replicas: 2,1,0 Isr: 2,1,0
      Topic: testOrder2      Partition: 2      Leader: 0      Replicas: 0,2,1 Isr: 0,2,1
Topic: initial         PartitionCount: 1      ReplicationFactor: 1      Configs: segment.bytes=1073741824
      Topic: initial         Partition: 0      Leader: 2      Replicas: 2      Isr: 2
Topic: __consumer_offsets      PartitionCount: 50      ReplicationFactor: 1      Configs: compression.type=producer,cleanup.policy=compact,segment.bytes=104857600
      Topic: __consumer_offsets      Partition: 0      Leader: 0      Replicas: 0      Isr: 0
      Topic: __consumer_offsets      Partition: 1      Leader: 0      Replicas: 0      Isr: 0
      Topic: __consumer_offsets      Partition: 2      Leader: 0      Replicas: 0      Isr: 0
      Topic: __consumer_offsets      Partition: 3      Leader: 0      Replicas: 0      Isr: 0
      Topic: __consumer_offsets      Partition: 4      Leader: 0      Replicas: 0      Isr: 0
      Topic: __consumer_offsets      Partition: 5      Leader: 0      Replicas: 0      Isr: 0
```

Topic: __consumer_offsets	Partition: 6	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 7	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 8	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 9	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 10	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 11	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 12	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 13	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 14	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 15	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 16	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 17	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 18	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 19	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 20	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 21	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 22	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 23	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 24	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 25	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 26	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 27	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 28	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 29	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 30	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 31	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 32	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 33	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 34	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 35	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 36	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 37	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 38	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 39	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 40	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 41	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 42	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 43	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 44	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 45	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 46	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 47	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 48	Leader: 0	Replicas: 0	Isr: 0
Topic: __consumer_offsets	Partition: 49	Leader: 0	Replicas: 0	Isr: 0

Se puede observar como se han aplicado las configs que setteamos por línea de comandos en cuanto a particiones y factor de replicación:

```
Topic: testOrder1 PartitionCount: 1 ReplicationFactor: 3 Configs: segment.bytes=1073741824 Topic:
testOrder1 Partition: 0 Leader: 1 Replicas: 1,2,0 Isr: 1,2,0 Topic: testOrder2 PartitionCount: 3 ReplicationFactor:
3 Configs: segment.bytes=1073741824 Topic: testOrder2 Partition: 0 Leader: 1 Replicas: 1,0,2 Isr: 1,0,2 Topic:
testOrder2 Partition: 1 Leader: 2 Replicas: 2,1,0 Isr: 2,1,0 Topic: testOrder2 Partition: 2 Leader: 0 Replicas: 0,2,1
Isr: 0,2,1
```

15. Arrancar un productor sobre el topic "testOrder1" y un consumidor desde el inicio sobre el mismo topic. Introducir algunos mensajes y observar cómo se consumen. Detener el productor y el consumidor.

```
sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-producer.sh --broker-list localhost:9092 --topic testOrder1
```

```
sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic
testOrder1 --from-beginning
```

16. Arrancar un productor sobre el topic "testOrder2" y un consumidor desde el inicio sobre el mismo topic. Introducir algunos mensajes y observar cómo se consumen. Detener el productor y el consumidor.

```
sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic testOrder2 --from-beginning
```

```
sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --t
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
```

18. Arrancar un consumidor sobre el topic "testOrder2", sin que se consuma desde el principio, únicamente los valores que le lleguen desde el nuevo arranque. En otra consola, generar una secuencia de números de 1 al 30 (utilizar el comando seq) y enviársela mediante una tubería a un productor sobre el topic "testOrder2". Observar como se consume dicha secuencia en el consumidor.

```
In [ ]: sh /home/j/kafka_2.11-2.4.1/bin/kafka-console-consumer.sh --bootstrap-server localhost:9092 --t
1
2
3
4
5
6
7
```

[illegible]

19. ¿Cuáles son las diferencias entre lo mostrado en el consumidor en los dos ejercicios anteriores? ¿A qué se deben?

A ser sincero, no veo diferencias en las salidas. Se generan muy rápido. Puede que con este ejercicio se pretendiera ver como iban llegando los mensajes de forma asíncrona pero no he conseguido reproducir ese comportamiento. Es igual en ambos casos.

20. Obtener los últimos offsets de los mensajes del topic "testOrder1" y "testOrder2". ¿Qué se observa? (Utilizar el comando kafka-run-class con la opción kafka.tools.GetOffsetShell).

```
%sh
/home/j/kafka_2.11-2.4.1/bin/kafka-run-class.sh kafka.tools.GetOffsetShell --broker-list localhost:2181 --zookeeper
testOrder1:0:33031
```

```
%%sh
/home/j/kafka_2.11-2.4.1/bin/kafka-run-class.sh kafka.tools.GetOffsetShell --broker-list localhost:9092 --zookeeper
testOrder2:0:30
testOrder2:1:3030
testOrder2:2:3000
```

Podemos ver como testOrder2 está particionado en 3 mientras testOrder1 está particionado en 1

21. Detener de forma no planificada el broker con identificador 2 y describir testOrder2. ¿Cuáles son las diferencias con la descripción que obtuvimos en el ejercicio 14? ¿A qué se deben?

Broker 2 parado:

```
[2020-12-17 16:04:09,358] INFO [GroupMetadataManager brokerId=2] Removed 0 expired offsets in 0
[2020-12-17 16:14:09,358] INFO [GroupMetadataManager brokerId=2] Removed 0 expired offsets in 0
^Z
[1]+  Stopped                  sh /home/j/kafka_2.11-2.4.1/bin/kafka-server-start.sh /home/j/kat
```

Describiendo testOrder2:


```
In [58]: %%sh
sh /home/j/kafka_2.11-2.4.1/bin/kafka-topics.sh --describe testOrder2 --bootstrap-server localhost:9092
```

```
Topic: testOrder1      PartitionCount: 1      ReplicationFactor: 3      Configs: segment.bytes=1073741824
    Topic: testOrder1      Partition: 0      Leader: 1      Replicas: 1,2,0 Isr: 1,0
Topic: testOrder2      PartitionCount: 3      ReplicationFactor: 3      Configs: segment.bytes=1073741824
    Topic: testOrder2      Partition: 0      Leader: 1      Replicas: 1,0,2 Isr: 1,0
    Topic: testOrder2      Partition: 1      Leader: 1      Replicas: 2,1,0 Isr: 1,0
    Topic: testOrder2      Partition: 2      Leader: 0      Replicas: 0,2,1 Isr: 0,1
Topic: initial         PartitionCount: 1      ReplicationFactor: 1      Configs: segment.bytes=1073741824
    Topic: initial         Partition: 0      Leader: none      Replicas: 2      Isr: 2
Topic: __consumer_offsets PartitionCount: 50      ReplicationFactor: 1      Configs: compression.type=producer, cleanup.policy=compact, segment.bytes=104857600
    Topic: __consumer_offsets Partition: 0      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 1      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 2      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 3      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 4      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 5      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 6      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 7      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 8      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 9      Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 10     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 11     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 12     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 13     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 14     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 15     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 16     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 17     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 18     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 19     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 20     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 21     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 22     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 23     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 24     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 25     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 26     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 27     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 28     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 29     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 30     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 31     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 32     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 33     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 34     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 35     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 36     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 37     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 38     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 39     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 40     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 41     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 42     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 43     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 44     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 45     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 46     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 47     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 48     Leader: 0      Replicas: 0      Isr: 0
    Topic: __consumer_offsets Partition: 49     Leader: 0      Replicas: 0      Isr: 0
```

En el ejercicio 14 tenemos:

```
In [ ]: Topic: testOrder2      PartitionCount: 3      ReplicationFactor: 3      Configs: segment.bytes=1073741824
        Topic: testOrder2      Partition: 0      Leader: 1      Replicas: 1,0,2 Isr: 1,0,2
```

Topic: testOrder2	Partition: 1	Leader: 2	Replicas: 2,1,0	Isr: 2,1,0
Topic: testOrder2	Partition: 2	Leader: 0	Replicas: 0,2,1	Isr: 0,2,1

En este ejercicio, tenemos:

```
In [ ]: Topic: testOrder2      PartitionCount: 3      ReplicationFactor: 3      Configs: segment.bytes=
        Topic: testOrder2      Partition: 0      Leader: 1      Replicas: 1,0,2 Isr: 1,0
        Topic: testOrder2      Partition: 1      Leader: 1      Replicas: 2,1,0 Isr: 1,0
        Topic: testOrder2      Partition: 2      Leader: 0      Replicas: 0,2,1 Isr: 0,1
```

Vemos que ha desaparecido en el ISR (In-Sync-Repliocas) el "2", quedando solo "0,1"

Esto se debe a que la réplica del broker 2 no se encuentra disponible en la sincronización.