Scenario 10

Problem statement

The client is able to produce to the international_orders topic but receives an error while producing and consuming from domestic_orders using the following commands -

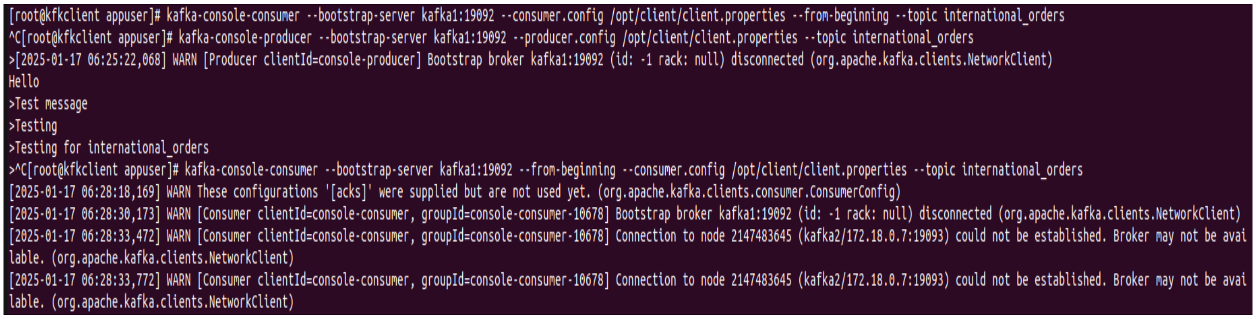
→ kafka-console-producer --bootstrap-server kafka1:19092 --producer.config /opt/client/client.properties --topic <topic>

→ kafka-console-consumer --bootstrap-server kafka1:19092 --consumer.config /opt/client/client.properties --from-beginning --topic <topic>

1. Produce and consume from the topic ”international_orders”

→kafka-console-producer --bootstrap-server kafka1:19092 --producer.config /opt/client/client.properties --topic international_orders

→ kafka-console-consumer --bootstrap-server kafka1:19092 --consumer.config /opt/client/client.properties --from-beginning --topic international_orders



```
[root@kfkclient appuser]# kafka-console-consumer --bootstrap-server kafka1:19092 --consumer.config /opt/client/client.properties --from-beginning --topic international_orders
^C[root@kfkclient appuser]# kafka-console-producer --bootstrap-server kafka1:19092 --producer.config /opt/client/client.properties --topic international_orders
>[2025-01-17 06:25:22,068] WARN [Producer clientId=console-producer] Bootstrap broker kafka1:19092 (id: -1 rack: null) disconnected (org.apache.kafka.clients.NetworkClient)
Hello
>Test message
>Testing
>Testing for international_orders
>^C[root@kfkclient appuser]# kafka-console-consumer --bootstrap-server kafka1:19092 --from-beginning --consumer.config /opt/client/client.properties --topic international_orders
[2025-01-17 06:28:18,169] WARN These configurations '[acks]' were supplied but are not used yet. (org.apache.kafka.clients.consumer.ConsumerConfig)
[2025-01-17 06:28:30,173] WARN [Consumer clientId=console-consumer, groupId=console-consumer-10678] Bootstrap broker kafka1:19092 (id: -1 rack: null) disconnected (org.apache.kafka.clients.NetworkClient)
[2025-01-17 06:28:33,472] WARN [Consumer clientId=console-consumer, groupId=console-consumer-10678] Connection to node 2147483645 (kafka2/172.18.0.7:19093) could not be established. Broker may not be avai
lable. (org.apache.kafka.clients.NetworkClient)
[2025-01-17 06:28:33,772] WARN [Consumer clientId=console-consumer, groupId=console-consumer-10678] Connection to node 2147483645 (kafka2/172.18.0.7:19093) could not be established. Broker may not be avai
lable. (org.apache.kafka.clients.NetworkClient)
```

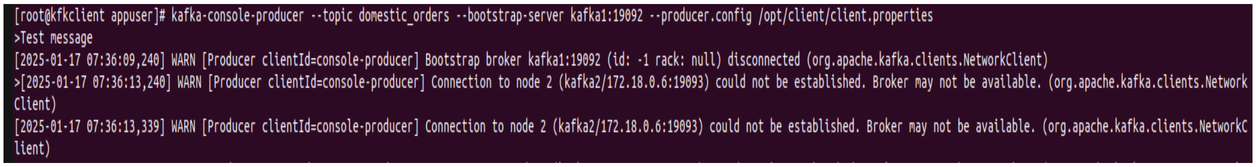
Observation

When trying to produce or consume from the topic ”international_orders” it is possible to produce and consume but with a warning message saying that ‘acks’ were supplied but were not used and connection to node 2 could not be established. This suggests that we need to check the topic description.

2. Produce or consume from the topic “domestic_orders”

→kafka-console-producer --bootstrap-server kafka1:19092 --producer.config /opt/client/client.properties --topic domestic_orders

→ kafka-console-consumer --bootstrap-server kafka1:19092 --consumer.config /opt/client/client.properties --from-beginning --topic domestic_orders



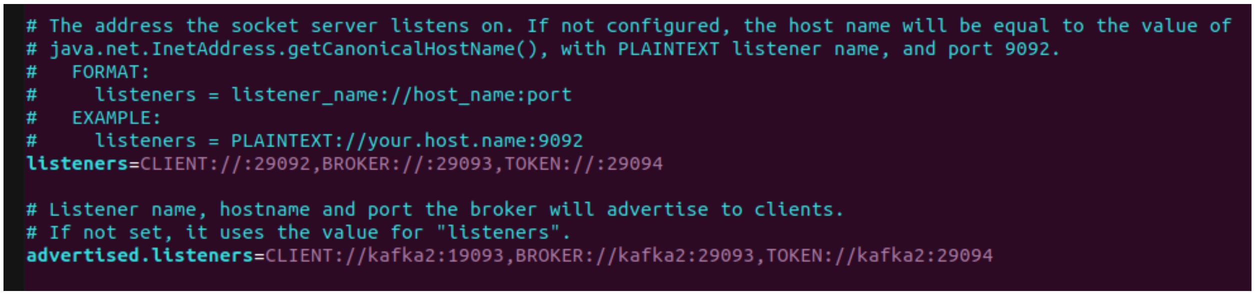
```
[root@kfkclient appuser]# kafka-console-producer --topic domestic_orders --bootstrap-server kafka1:19092 --producer.config /opt/client/client.properties
>Test message
[2025-01-17 07:36:09,240] WARN [Producer clientId=console-producer] Bootstrap broker kafka1:19092 (id: -1 rack: null) disconnected (org.apache.kafka.clients.NetworkClient)
>[2025-01-17 07:36:13,240] WARN [Producer clientId=console-producer] Connection to node 2 (kafka2/172.18.0.6:19093) could not be established. Broker may not be available. (org.apache.kafka.clients.Network
Client)
[2025-01-17 07:36:13,339] WARN [Producer clientId=console-producer] Connection to node 2 (kafka2/172.18.0.6:19093) could not be established. Broker may not be available. (org.apache.kafka.clients.NetworkC
lient)
```

Observation

When trying to produce or consume from the topic ”domestic_orders” it is not possible and throws an error saying connection to node 2 (kafka2/172.18.0.6:19093)could not be established. Broker may not be available.

Root cause analysis

When client requests were made it was communicating using the wrong configuration of ports (port 19093 instead of port 29092). The port mappings are done in server.properties file of their respective broker. Hence, in broker 2’s server.properties file, it is in fact observed that the client is trying to communicate on port 19093 but it is actually configured to listen to port 29092.



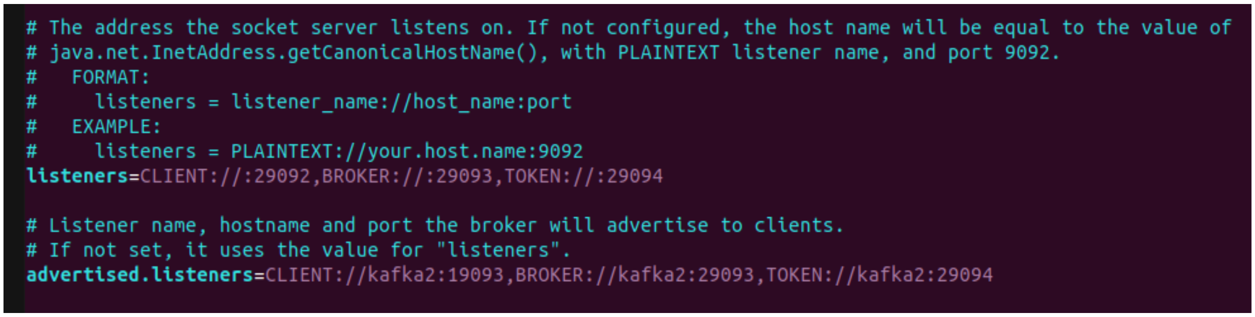
```
# The address the socket server listens on. If not configured, the host name will be equal to the value of
# java.net.InetAddress.getCanonicalHostName(), with PLAINTEXT listener name, and port 9092.
#   FORMAT:
#     listeners = listener_name://host_name:port
#   EXAMPLE:
#     listeners = PLAINTEXT://your.host.name:9092
listeners=CLIENT://:29092,BROKER://:29093,TOKEN://:29094

# Listener name, hostname and port the broker will advertise to clients.
# If not set, it uses the value for "listeners".
advertised.listeners=CLIENT://kafka2:19093,BROKER://kafka2:29093,TOKEN://kafka2:29094
```

Solution to debug the issue

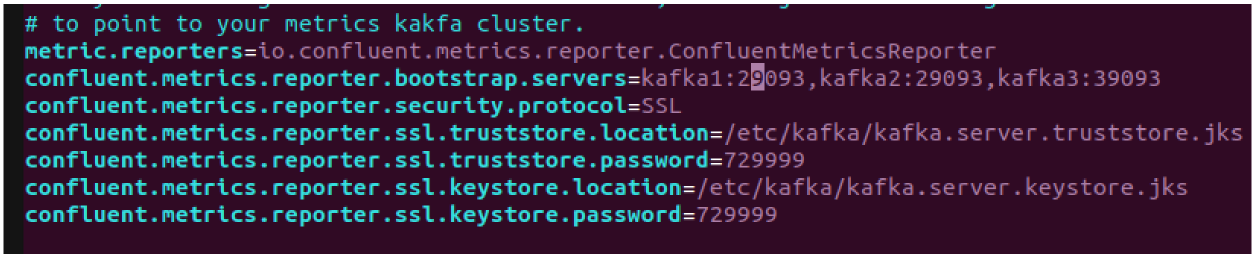
1. Change the port address

In kafka2’s server.properties, change the port number from CLIENT://19093 to CLIENT://29092



```
# The address the socket server listens on. If not configured, the host name will be equal to the value of
# java.net.InetAddress.getCanonicalHostName(), with PLAINTEXT listener name, and port 9092.
#   FORMAT:
#     listeners = listener_name://host_name:port
#   EXAMPLE:
#     listeners = PLAINTEXT://your.host.name:9092
listeners=CLIENT://:29092,BROKER://:29093,TOKEN://:29094

# Listener name, hostname and port the broker will advertise to clients.
# If not set, it uses the value for "listeners".
advertised.listeners=CLIENT://kafka2:19093,BROKER://kafka2:29093,TOKEN://kafka2:29094
```



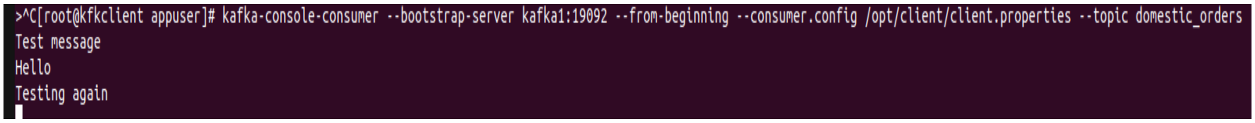
```
# to point to your metrics kakfa cluster.
metric.reporters=io.confluent.metrics.reporter.ConfluentMetricsReporter
confluent.metrics.reporter.bootstrap.servers=kafka1:29093,kafka2:29093,kafka3:39093
confluent.metrics.reporter.security.protocol=SSL
confluent.metrics.reporter.ssl.truststore.location=/etc/kafka/kafka.server.truststore.jks
confluent.metrics.reporter.ssl.truststore.password=729999
confluent.metrics.reporter.ssl.keystore.location=/etc/kafka/kafka.server.keystore.jks
confluent.metrics.reporter.ssl.keystore.password=729999
```

2. Test the configuration changes by producing and consuming test messages into the topic “domestic_orders”

→ docker compose restart kafka2

→kafka-console-producer --bootstrap-server kafka1:19092 --producer.config /opt/client/client.properties --topic domestic_orders

→ kafka-console-consumer --bootstrap-server kafka1:19092 --consumer.config /opt/client/client.properties --from-beginning --topic domestic_orders



```
>^C[root@kfkclient appuser]# kafka-console-consumer --bootstrap-server kafka1:19092 --from-beginning --consumer.config /opt/client/client.properties --topic domestic_orders
Test message
Hello
Testing again
```

Observation

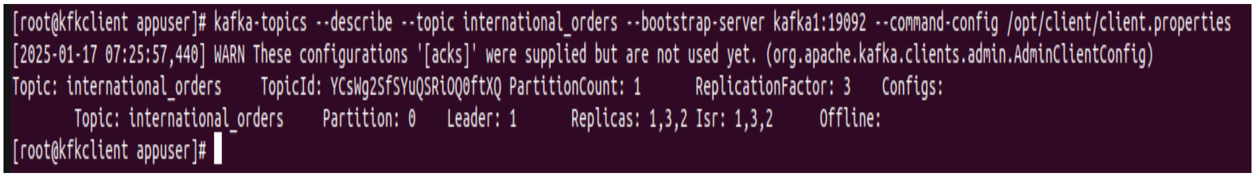
Successfully able to produce and consume message.

Conclusion

Since the client was using the misconfigured port 19093 instead of port 29092 that is actually used for communication between the broker and the client, Thus it was not able to produce message into **domestic_orders** topic which has only one replica and is not fault tolerant, on the other hand, **international_orders** topic had a replication factor of 3 which is of high fault tolerant and was able to produce or consume messages because it had had high fault tolerance.

Topic configuration of ”international_orders”

→ kafka-topics --describe --topic international_orders --bootstrap-server kafka1:19092 --command-config /opt/client/client.properties



```
[root@kfkclient appuser]# kafka-topics --describe --topic international_orders --bootstrap-server kafka1:19092 --command-config /opt/client/client.properties
[2025-01-17 07:25:57,440] WARN These configurations '[acks]' were supplied but are not used yet. (org.apache.kafka.clients.admin.AdminClientConfig)
Topic: international_orders     TopicId: YCsWg2SfSYuQSRiOQ0ftXQ PartitionCount: 1       ReplicationFactor: 3    Configs:
        Topic: international_orders     Partition: 0    Leader: 1       Replicas: 1,3,2 Isr: 1,3,2      Offline:
[root@kfkclient appuser]#
```

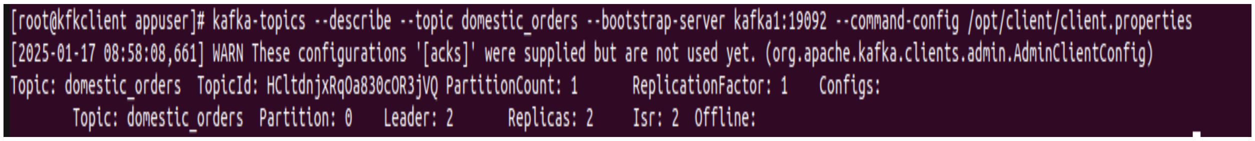
Observations

Topic Name: international_orders
Topic ID: YCsWg2SfSYuQSRiOQ0ftXQ
Partition Count: 1 (There is only one partition in this topic)
Replication Factor: 3 (Each partition is replicated three times)
Configs: No specific topic configurations are displayed
Partition Details:

- **Partition**: 0
- **Leader**: 1 (Broker 1 is the leader for this partition and handles all reads and writes)
- **Replicas**: 1,3,2 (The replicas of this partition are located on brokers 1, 3, and 2)
- **ISR (In-Sync Replicas)**: 1,3,2 (All three replicas are in sync with the leader)
- **Offline**: None (There are no offline replicas)

Topic configuration of ”domestic_orders”

→ kafka-topics --describe --topic domestic_orders --bootstrap-server kafka1:19092 --command-config /opt/client/client.properties



```
[root@kfkclient appuser]# kafka-topics --describe --topic domestic_orders --bootstrap-server kafka1:19092 --command-config /opt/client/client.properties
[2025-01-17 08:58:08,661] WARN These configurations '[acks]' were supplied but are not used yet. (org.apache.kafka.clients.admin.AdminClientConfig)
Topic: domestic_orders  TopicId: HCltdnjxRqOa830cOR3jVQ PartitionCount: 1       ReplicationFactor: 1    Configs:
        Topic: domestic_orders  Partition: 0    Leader: 2       Replicas: 2     Isr: 2  Offline:
```

Observations

Topic Name: domestic_orders
Topic ID: V9FTc0X_TSijB7ROsF91vw
Partition Count: 1
Replication Factor: 1
Configs: No specific configurations are set for this topic.
Partition 0:

- **Leader**: Broker 2 is the leader for this partition.
- **Replicas**: Partition 0 has only one replica, located on broker 2.
- **ISR (In-Sync Replicas)**: Broker 2 is in the ISR, meaning it is synchronized with the leader.
- **Offline Replicas**: None (There are no offline replicas)