

## Scenario 3

### Problem Statement

The client is unable to interact with the cluster using kafka-topics, kafka-console-producer or kafka-console-consumer using the super user bob (password- bob-sceret) with some of the kafka brokers as the bootstrap server. Only one of the kafka broker works as the bootstrap server. The error message when using kafka2 or kafka3 as the bootstrap-server.

#### For broker 1 on port 19092:

→ **kafka-topics --list --bootstrap-server kafka1:19092 --command-config /opt/client/client.properties**

```
[root@kfkclient appuser]# kafka-topics --list --bootstrap-server kafka1:19092 --command-config /opt/client/client.properties
_consumer_offsets
_confluent-command
_confluent-controlcenter-7-4-0-1-AlertHistoryStore-changelog
_confluent-controlcenter-7-4-0-1-AlertHistoryStore-repartition
_confluent-controlcenter-7-4-0-1-Group-ONE_MINUTE-changelog
```

Observations:

Works fine and lists all the topics.

#### For broker 2 on port 29092:

→ **kafka-topics --list --bootstrap-server kafka2:29092 --command-config /opt/client/client.properties**

```
[root@kfkclient appuser]# kafka-topics --list --bootstrap-server kafka2:29092 --command-config /opt/client/client.properties
[2025-01-15 17:00:27,906] ERROR [AdminClient clientId=adminclient-1] Connection to node -1 (kafka2/172.18.0.7:29092) failed authentication due to: Authentication failed: Invalid username or password (org.apache.kafka.clients.NetworkClient)
[2025-01-15 17:00:27,980] WARN [AdminClient clientId=adminclient-1] Metadata update failed due to authentication error (org.apache.kafka.clients.admin.internals.AdminMetadataManager)
org.apache.kafka.common.errors.SaslAuthenticationException: Authentication failed: Invalid username or password
Error while executing topic command : Authentication failed: Invalid username or password
[2025-01-15 17:00:28,379] ERROR org.apache.kafka.common.errors.SaslAuthenticationException: Authentication failed: Invalid username or password
(kafka.admin.TopicCommand$)
[root@kfkclient appuser]#
```

Observations:

The error indicates that the Kafka client is failing to authenticate with the broker due to incorrect credentials ( incorrect username or password).

**For broker 3 on port 39092:**

→ **kafka-topics --list --bootstrap-server kafka3:39092 --command-config /opt/client/client.properties**

```
[root@kfkclient appuser]# kafka-topics --list --bootstrap-server kafka3:39092 --command-config /opt/client/client.properties
[2025-01-15 17:08:54,281] ERROR [AdminClient clientId=adminclient-1] Connection to node -1 (kafka3/172.18.0.8:39092) failed authentication due to: Authentication failed: Invalid username or password (org.apache.kafka.clients.NetworkClient)
[2025-01-15 17:08:54,338] WARN [AdminClient clientId=adminclient-1] Metadata update failed due to authentication error (org.apache.kafka.clients.admin.internals.AdminMetadataManager)
org.apache.kafka.common.errors.SaslAuthenticationException: Authentication failed: Invalid username or password
Error while executing topic command : Authentication failed: Invalid username or password
[2025-01-15 17:08:54,378] ERROR org.apache.kafka.common.errors.SaslAuthenticationException: Authentication failed: Invalid username or password (kafka.admin.TopicCommand$)
[root@kfkclient appuser]#
```

Observations:

The error is similar to the kafka 2 client and indicates the same that the Kafka client is failing to authenticate with the broker due to incorrect credentials ( incorrect username or password).

## Root cause

The Kafka client is failing to authenticate with the broker due to incorrect credentials ( incorrect username or password).

## Solution to debug the issue

The issue only persists on kafka broker 2 and 3, which means that the setup of these brokers is not done right. Since the error logs of kafka 2 and kafka 3 shows that it is failing to authenticate with the broker due to incorrect credentials in SASL configuration. It is required to make sure that the SASL configurations for both kafka 1 and kafka 2 is correct and matches with the credentials in client.properties file that is used to authenticate with the broker.

### 1. Check the client.properties file

```
sasl.mechanism=PLAIN
security.protocol=SASL_PLAINTEXT
sasl.jaas.config=org.apache.kafka.common.security.plain.PlainLoginModule required \
  username="bob" \
  password="bob-secret";
~
~
```

## 2. Check the SASL configurations on kafka-2 server.properties file

```
# The maximum size of a request that the socket server will accept (protection against OOM)
socket.request.max.bytes=104857600

sasl.enabled.mechanisms=PLAIN,OAuthBearer

listener.name.client.sasl.enabled.mechanisms=PLAIN
listener.name.token.sasl.enabled.mechanisms=OAuthBearer

listener.name.client.plain.sasl.jaas.config=org.apache.kafka.common.security.plain.PlainLoginModule required \
  username="admin" \
  password="admin-secret" \
  user_admin="admin-secret" \
  user_bob="b0b-secret" \
  user_alice="alice-secret" \
  user_kafkaclient1="kafkaclient1-secret";
```

## 3. Check the SASL configurations on kafka-3 server.properties file

```
# The maximum size of a request that the socket server will accept (protection against OOM)
socket.request.max.bytes=104857600

sasl.enabled.mechanisms=PLAIN,OAuthBearer

listener.name.client.sasl.enabled.mechanisms=PLAIN
listener.name.token.sasl.enabled.mechanisms=OAuthBearer

listener.name.client.plain.sasl.jaas.config=org.apache.kafka.common.security.plain.PlainLoginModule required \
  username="admin" \
  password="admin-secret" \
  user_admin="admin-secret" \
  user_bob="b0b-secret" \
  user_alice="alice-secret" \
  user_kafkaclient1="kafkaclient1-secret";
```

### Observations:

It is observed that in both the kafka-2 and kafka-3 server.properties the error is caused by the mismatched passwords. The password for username bob is “b0b-secret” in server.properties and instead of “bob-secret” in the client.properties file which is mismatched.

Here user\_bob=”bob-secret” is used to validate the client credentials for authentication of the client.

1. user\_ is the prefix
2. bob is the username
3. bob-secret is the password

## 4. Change the password from b0b-secret to bob-secret in both kafka-2 and kafka-3 server.properties file

**5. Now restart the kafka-2 and 3 containers and run the command to list the topics**

→ **docker compose restart kafka2**

→ **docker compose restart kafka3**

→ **kafka-topics --bootstrap-server kafka2:29092 --command-config /opt/client/client.properties --list**

```
[root@kfkclient appuser]# kafka-topics --bootstrap-server kafka2:29092 --command-config /opt/client/client.properties --list
_consumer_offsets
_confluent-command
_confluent-controlcenter-7-4-0-1-AlertHistoryStore-changelog
_confluent-controlcenter-7-4-0-1-AlertHistoryStore-repartition
_confluent-controlcenter-7-4-0-1-Group-ONE_MINUTE-changelog
_confluent-controlcenter-7-4-0-1-Group-ONE_MINUTE-repartition
_confluent-controlcenter-7-4-0-1-Group-THREE_HOURS-changelog
```

→ **kafka-topics --bootstrap-server kafka3:39092 --command-config /opt/client/client.properties --list**

```
[root@kfkclient appuser]# kafka-topics --bootstrap-server kafka3:39092 --command-config /opt/client/client.properties --list
_consumer_offsets
_confluent-command
_confluent-controlcenter-7-4-0-1-AlertHistoryStore-changelog
_confluent-controlcenter-7-4-0-1-AlertHistoryStore-repartition
_confluent-controlcenter-7-4-0-1-Group-ONE_MINUTE-changelog
_confluent-controlcenter-7-4-0-1-Group-ONE_MINUTE-repartition
_confluent-controlcenter-7-4-0-1-Group-THREE_HOURS-changelog
```

## **Conclusion:**

Since the passwords for user validation was wrong the kafka broker was unable to validate with the wrong credentials.