

Debezium MySQL CDC with Kafka (KRaft) – Full Setup Guide

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Overview

This guide explains how to configure **Debezium MySQL Change Data Capture (CDC)** using:

- **Apache Kafka 4.x (KRaft mode)**
- **Kafka Connect**
- **Debezium MySQL connector**
- **MySQL database at 192.168.1.226**
- **Database name:** `mydb`

1. Install Debezium Connector Plugin

Create plugin directory:

```
sudo mkdir -p /opt/kafka/connectors
sudo chown -R kafka:kafka /opt/kafka/connectors
cd /opt/kafka/connectors
```

Download Debezium MySQL plugin:

```
wget https://repo1.maven.org/maven2/io/debezium/debezium-connector-mysql/2.7.2.Final/debezium-connector-mysql-2.7.2.Final-plugin.tar.gz
```

Extract it:

```
tar -xzf debezium-connector-mysql-2.7.2.Final-plugin.tar.gz
```

2. Configure Kafka Connect

Create connect config:

```
sudo nano /opt/kafka/config/connect-distributed.properties
```

Paste:

```
bootstrap.servers=localhost:9092
group.id=connect-cluster

key.converter=org.apache.kafka.connect.json.JsonConverter
value.converter=org.apache.kafka.connect.json.JsonConverter
key.converter.schemas.enable=false
value.converter.schemas.enable=false

config.storage.topic=connect-configs
offset.storage.topic=connect-offsets
status.storage.topic=connect-status

config.storage.replication.factor=1
offset.storage.replication.factor=1
status.storage.replication.factor=1

plugin.path=/opt/kafka/connectors
rest.port=8083
```

3. Kafka Connect Systemd Service

Create service:

```
sudo nano /etc/systemd/system/kafka-connect.service
```

Paste:

```
[Unit]
Description=Kafka Connect Distributed Service
After=network.target

[Service]
Type=simple
User=kafka
Group=kafka
Environment="KAFKA_HEAP_OPTS=-Xms512M -Xmx2G"
ExecStart=/opt/kafka/bin/connect-distributed.sh /opt/kafka/config/connect-
distributed.properties
Restart=always
RestartSec=5
Environment="PATH=/usr/bin:/usr/local/bin:/opt/kafka/bin"

StandardOutput=journal
StandardError=journal
LimitNOFILE=100000

[Install]
WantedBy=multi-user.target
```

Reload:

```
sudo systemctl daemon-reload
sudo systemctl start kafka-connect
sudo systemctl enable kafka-connect
```

4. Prepare MySQL

Enable binlog and create user:

```
SET GLOBAL binlog_format = 'ROW';
SET GLOBAL binlog_row_image = 'FULL';
```

```
CREATE USER 'debezium'@'%' IDENTIFIED BY 'Debezium123!';  
GRANT SELECT, RELOAD, SHOW DATABASES, REPLICATION SLAVE, REPLICATION CLIENT  
ON *.* TO 'debezium'@'%';  
FLUSH PRIVILEGES;
```

Test:

```
mysql -h 192.168.1.226 -u debezium -p
```

5. Register Debezium MySQL Connector (curl)

```
curl -X PUT http://192.168.1.226:8083/connectors/mysql-connector/config \  
-H "Content-Type: application/json" \  
-d '{  
  "connector.class": "io.debezium.connector.mysql.MySqlConnector",  
  "tasks.max": "1",  
  
  "database.hostname": "192.168.1.225",  
  "database.port": "3306",  
  "database.user": "appuser",  
  "database.password": "QAZWSX@786#Dhaka",  
  "database.server.id": "184054",  
  
  "topic.prefix": "mysqlserver1",  
  "database.include.list": "mydb",  
  
  "snapshot.mode": "initial",  
  "include.schema.changes": "true",  
  
  "schema.history.internal.kafka.bootstrap.servers": "192.168.1.226:9092",  
  "schema.history.internal.kafka.topic": "schema-changes.mysql"  
}'
```

6. Verify Connector

```
curl http://localhost:8083/connectors  
curl http://localhost:8083/connectors/mysql-connector/status
```

7. Kafka Topics Created

```
/opt/kafka/bin/kafka-topics.sh --bootstrap-server localhost:9092 --list
```

8. Consume CDC Messages

```
/opt/kafka/bin/kafka-console-consumer.sh \  
  --bootstrap-server localhost:9092 \  
  --topic mysqlserver1.mydb.customers \  
  --from-beginning
```

9. Delete Connector

```
curl -X DELETE http://localhost:8083/connectors/mysql-connector
```

10. Restart Connector

```
curl -X POST http://localhost:8083/connectors/mysql-connector/restart
```

? Completed

You now have working end-to-end Debezium CDC with Kafka + MySQL.

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