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Kafka Comprehensive Cheat Sheet

March 16, 2025

Starting Kafka and Zookeeper

```
# Start Zookeeper
zookeeper-server-start.sh config/zookeeper.properties

# Start Kafka broker
kafka-server-start.sh config/server.properties

# Start Kafka with a specific configuration file
kafka-server-start.sh -daemon config/server.properties
```

Kafka Topics

```
# List all topics
kafka-topics.sh --list --bootstrap-server localhost:9092

# Create a topic
kafka-topics.sh --create --bootstrap-server localhost:9092 --topic my-topic --
    partitions 3 --replication-factor 2

# Describe a topic
kafka-topics.sh --describe --bootstrap-server localhost:9092 --topic my-topic

# Delete a topic
kafka-topics.sh --delete --bootstrap-server localhost:9092 --topic my-topic
```

Producing and Consuming Messages

```
# Start a producer and send messages
kafka-console-producer.sh --bootstrap-server localhost:9092 --topic my-topic

# Start a consumer to read messages
kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic my-topic --
    from-beginning
```

Consumer Groups

```
# List all consumer groups
kafka-consumer-groups.sh --bootstrap-server localhost:9092 --list

# Describe a consumer group
kafka-consumer-groups.sh --bootstrap-server localhost:9092 --group my-group --
    describe

# Delete a consumer group
kafka-consumer-groups.sh --bootstrap-server localhost:9092 --delete --group my-
    group
```

Managing Offsets

```
# Reset offsets for a consumer group
kafka-consumer-groups.sh --bootstrap-server localhost:9092 --group my-group --
    reset-offsets --to-earliest --execute

# Commit offsets manually
kafka-console-consumer.sh --bootstrap-server localhost:9092 --topic my-topic --
    group my-group --consumer-property enable.auto.commit=false
```

Cluster Management

```
# List all brokers
zookeeper-shell.sh localhost:2181 ls /brokers/ids

# Describe cluster metadata
kafka-metadata-shell.sh --bootstrap-server localhost:9092

# Reassign partitions
kafka-reassign-partitions.sh --bootstrap-server localhost:9092 --reassignment-
    json-file reassignment.json --execute
```

Kafka ACLs (Security)

```
# Add ACL for a user
kafka-acls.sh --bootstrap-server localhost:9092 --add --allow-principal User:
    admin --operation Read --topic my-topic

# List ACLs
kafka-acls.sh --bootstrap-server localhost:9092 --list

# Remove ACLs
kafka-acls.sh --bootstrap-server localhost:9092 --remove --allow-principal User
    :admin --operation Read --topic my-topic
```

Monitoring and Logs

```
# View Kafka logs
tail -f logs/kafka-server.log

# Check consumer lag
kafka-consumer-groups.sh --bootstrap-server localhost:9092 --describe --group
   my-group

# List active brokers
zookeeper-shell.sh localhost:2181 ls /brokers/ids
```

Kafka Connect (ETL Integration)

```
# List all connectors
curl -s http://localhost:8083/connectors | jq .

# Create a new connector
curl -X POST -H "Content-Type: application/json" --data '{
  "name": "file-sink",
  "config": {
    "connector.class": "org.apache.kafka.connect.file.FileStreamSinkConnector",
    "tasks.max": "1",
    "file": "/tmp/output.txt",
    "topics": "my-topic"
  }
}' http://localhost:8083/connectors

# Delete a connector
curl -X DELETE http://localhost:8083/connectors/file-sink
```

Kafka Streams

```
# Run a Kafka Streams application
java -jar kafka-streams-app.jar

# Describe a running Kafka Streams application
kafka-streams-application-reset.sh --bootstrap-server localhost:9092 --
   application-id my-streams-app --describe
```