



# *Kafka Command-Line Interface tools*

The Kafka Command Line Interface (CLI) is a set of command-line tools provided by Apache Kafka to interact with and manage Kafka clusters and resources. These tools offer a convenient way for administrators, developers, and operators to perform various tasks related to Kafka topics, consumers, producers, and brokers from the command line.

**Installation:** First, you need to install Apache Kafka on your system. The Kafka distribution includes the CLI tools by default, so you don't need to install them separately.

**Environment Setup:** To use the Kafka CLI tools, you typically need to set up environment variables, such as specifying the location of the Kafka installation, configuring the Kafka server(s) you want to connect to, and other relevant settings. These environment variables are used by the CLI tools to establish connections and determine the target Kafka cluster.

- Introduction to CLI scripts
  - Scripts are running in containers
  - Producers
  - Consumers, consumer-groups
  - Topics

```
Windows PowerShell x Windows PowerShell x + v
PS C:\LB\LB2628-Kafka\docker> ls

Directory: C:\LB\LB2628-Kafka\docker

Mode                LastWriteTime         Length Name
----                -
d-----          27-09-2023    16:05          kafka-connect
-a-----          12-10-2023    16:32        2534 commands.txt
-a-----          26-09-2023    10:13         965 docker-compose-connect.yml
-a-----          25-09-2023    15:19       1694 docker-compose-three-brokers.yml
-a-----          25-09-2023    14:11       1198 docker-compose-two-brokers.yml
-a-----          12-10-2023    12:26        115 kafka-configs.bat
-a-----          25-09-2023    14:58        123 kafka-consumer-groups.bat
-a-----          25-09-2023    14:58        124 kafka-consumer.bat
-a-----          11-10-2023    11:56        119 kafka-get-offsets.bat
-a-----          11-10-2023    12:05        116 kafka-log-dirs.bat
-a-----          25-09-2023    15:28        143 kafka-producer-perf-test.bat
-a-----          25-09-2023    15:00        125 kafka-producer.bat
-a-----          25-09-2023    14:57        114 kafka-topics.bat

PS C:\LB\LB2628-Kafka\docker> |
```

This tool allows you to create, list, describe, delete, and modify Kafka topics.

```
// List all topics
```

```
kafka-topics --list
```

```
// Create a new topic with 3 partitions
```

```
kafka-topics --create --topic my-topic --partitions 3
```

```
// Show details about the topic
```

```
kafka-topics --describe --topic my-topic
```

```
// Delete the topic
```

```
kafka-topics --delete --topic my-topic
```

Use this tool to manage Kafka consumer groups, list consumer group details, and monitor consumer group offsets.

// List all groups

```
kafka-consumer-groups -list
```

// Show details of a group

```
kafka-consumer-groups --describe --group my-group
```

// Create group with offsets set to earliest

```
kafka-consumer-groups --create --group my-group --to-earliest
```

Useful tool to publish messages to a Kafka topic from the command line.

//Start a producer to publish messages to the "my-topic" topic.

```
kafka-console-producer --topic my-topic
```

//Option to specify key & value.

```
kafka-console-producer --topic my_topic --property parse.key=true --property  
key.separator=":"
```

Useful tool that allows you to consume and print messages from a Kafka topic in real-time.

```
// Start a consumer to read messages from the "my-topic" topic from beginning.
```

```
kafka-console-consumer --topic my-topic --from-beginning
```

```
// Consume messages from the "my-topic" as part of the group my-group.
```

```
kafka-console-consumer --topic my-topic --group my_group
```

```
// Consume messages from the "my-topic", print the key and specify a deserializer.
```

```
kafka-console-consumer --topic my-topic --property print.key=true --value-  
deserializer "org.apache.kafka.common.serialization.LongDeserializer"
```

Other useful properties:

```
--property print.partition=true --property print.offset=true
```

This tool is used for performance testing and benchmarking Kafka producers.

It allows you to simulate the production of a large number of messages to measure Kafka producer performance.

//Perform a producer performance test.

```
kafka-producer-perf-test --topic my-topic --throughput 10 --num-records 1000  
--record-size 10
```



Allows users to manage and manipulate configuration settings for Kafka brokers, topics, and other Kafka components. It is particularly useful for changing configuration parameters dynamically without the need to restart Kafka brokers or other Kafka components

```
// Describe all topics
```

```
kafka-configs.bat --entity-type topics --entity-name streams-out-1 --describe
```

```
// describe broker with id 1
```

```
kafka-configs.bat --entity-type brokers --entity-name 1 --describe --all
```

This tool allows you the partition offsets for one or more topics

// Shows all topics and their partitions with offsets

```
kafka-get-offsets.bat --topic my-topic
```

// Shows all partitions and their offsets for topic my-topic

```
kafka-get-offsets.bat --topic my-topic
```

Allows user to query a list of replicas per log directory on a broker. The tool provides information that is required for optimizing replica assignment across brokers.

```
kafka-log-dirs.bat --topic-list my-topic --describe
```