Why does kafka producer take a broker endpoint when being initialized instead of the zk

If I have multiple brokers, which broker should my producer use? Do I need to manually switch the broker to balance the load? Also why does the consumer only need a zookeeper endpoint instead of a broker endpoint?

quick example from tutorial:

```
> bin/kafka-console-producer.sh --broker-list localhost:9092 --topic test
> bin/kafka-console-consumer.sh --zookeeper localhost:2181 --topic test --from-beginning
```

apache-kafka

edited Dec 31 '16 at 1:56
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asked Mar 16 '14 at 23:09
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3 Answers

> which broker should my producer use?
> Do I need to manually switch the broker to balance the load?

Kafka runs on cluster, meaning set of nodes, so while producing anything you need to tell him the `LIST` of brokers that you've configured for your application, below is a small note taken from their documentation.

> “metadata.broker.list” defines where the Producer can find a one or more Brokers to determine the Leader for each topic. This does not need to be the full set of Brokers in your cluster but should include at least two in case the first Broker is not available. No need to worry about figuring out which Broker is the leader for the topic (and partition), the Producer knows how to connect to the Broker and ask for the meta data then connect to the correct Broker.

Hope this clear some of your confusion

> Also why does the consumer only need a zookeeper endpoint instead of a broker endpoint

This is not technically correct, as there are two types of APIs available, High level and Low level consumer.

The high level consumer basically takes care of most of the thing like leader detection, threading issue, etc. but does not provide much control over messages which exactly the purpose of using the other alternatives Simple or Low level consumer, in which you will see that you need to provide the brokers, partition related details.

So Consumer need zookeeper end point only when you are going with the high level API, in case of using Simple you do need to provide other information

edited May 25 '15 at 4:36
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41.4k 11 73 115

answered Mar 18 '14 at 8:02
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2 Good answer. Some clarifications on the second question that you might wish to update: the high-level consumer API directly uses ZK primarily because *it writes its own data to ZK* —it stores the last offset for each partition that the client (consumer, possibly threaded) has read, among other things I believe. A simple consumer should discover other brokers, leaders, etc. through the metadata API after connecting with static broker list. – ches Aug 14 '14 at 12:29

1 from 0.9, its the kafka which would store the last offset rather than zk – ssinganamalla Jan 30 '16 at 12:07

Kafka sets a single broker as the leader for each partition of each topic. The leader is responsible for handling both reads and writes to that partition. You cannot decide to read or write from a non-Leader broker.

So, what does it mean to provide a broker or list of brokers to the kafka-console-producer ? Well, the broker or brokers you provide on the command-line are just the first contact point for your producer. If the broker you list is not the leader for the topic/partition you need, your producer will get the current leader info (called "topic metadata" in kafka-speak) and reconnect to other brokers as necessary before sending writes. In fact, if your topic has multiple partitions it may even connect to several brokers in parallel (if the partition leaders are different brokers).

Second q: why does the consumer require a zookeeper list for connections instead of a broker list? The answer to that is that kafka consumers can operate in "groups" and zookeeper is used to coordinate those groups (how groups work is a larger issue, beyond the scope of this Q). Zookeeper also stores broker lists for topics, so the consumer can pull broker lists directly from zookeeper, making an additional --broker-list a bit redundant.

answered Mar 22 '14 at 0:29

dpkp
776 4 10

2 but why can't the producer also pull the broker list from zookeeper? – Chi Zhang Aug 12 '16 at 15:40

Kafka Producer API does not interact directly with Zookeeper. However, the High Level Consumer API connects to Zookeeper to fetch/update the partition offset information for each consumer. So, the consumer API would fail if it cannot connect to Zookeeper.

answered Dec 15 '14 at 16:11
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