KIP-XXX: [Streams] Support multiple topic resolution in TopicNameExtractor

Status

Current state: Discussion

Discussion thread: TBD

JIRA: ⚠️ Unable to render Jira issues macro, execution error.

Initial Github Proposal: https://github.com/apache/kafka/pull/5801

Please keep the discussion on the mailing list rather than commenting on the wiki (wiki discussions get unwieldy fast).

Motivation

Kafka streams is great API for consuming incoming data from Kafka brokers, also it has a feature to write processed events from stream to destination topic via **.to()** sink.

Not a lot of releases ago it had only single method, which accepted only single String parameter - topic name.

Recently **.to()** was overloaded with new method which accepts TopicNameExtractor object as parameter, it allows dynamically chose topic based on input message or other conditions on-fly.

Unfortunately both of these approaches - **to(String)** and **to(TopicNameExtractor)** has limitation - they allows only single topic to be chosen as output for the stream.

Public Interfaces

Briefly list any new interfaces that will be introduced as part of this proposal or any existing interfaces that will be removed or changed. The purpose of this section is to concisely call out the public contract that will come along with this feature.

A public interface is any change to the following:

- *Binary log format*
- *The network protocol and api behavior*
- *Any class in the public packages under clientsConfiguration, especially client configuration*

  - *org/apache/kafka/common/serialization*
  - *org/apache/kafka/common*
  - *org/apache/kafka/common/errors*
  - *org/apache/kafka/clients/producer*
  - *org/apache/kafka/clients/consumer (eventually, once stable)*
- *Monitoring*
- *Command line tools and arguments*
- *Anything else that will likely break existing users in some way when they upgrade*

Proposed Changes

Describe the new thing you want to do in appropriate detail. This may be fairly extensive and have large subsections of its own. Or it may be a few sentences. Use judgement based on the scope of the change.

Compatibility, Deprecation, and Migration Plan

- *What impact (if any) will there be on existing users?*
- *If we are changing behavior how will we phase out the older behavior?*

Rejected Alternatives