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| Tibco Software Inc |
| BusinessEvents Kafka Channel |
| Functional Specifications Document |

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| Basit Shaikh  3/20/2017 |

Revision History

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# Introduction

## Purpose and Motivation

Requirement for BE to support Kafka Channel out of box.

## Audience

This document is targeted towards QA, tech-pubs and engineering teams for creating functional test cases, documentation of product features and for implementing these functional specs.

## Document Scope

The scope of this document is to list the functional specifications of the overall requirement to support Kafka Channel in BE. It will not describe the technical details or the high/low level design of the Apache Kafka or the Apache Zookeeper.

# Channel configurations

The Kafka Channel in BE is implemented using its Channel API hence it does not support shared resource based configuration.

# Channel Properties

* + 1. Kafka Broker Url

A list of host/port pairs to use for establishing the initial connection to the Kafka cluster. This list should be in the form host1:port1,host2:port2. For more details refer setting bootstrap servers in the Kafka Documentation.

* 1. **Destination Properties**
     1. Name

Name of the destination within a channel.

* + 1. Default Event

Incoming messages are mapped to this event type by default. The event type can be overridden by specifying the name and namespace of the event using field name ‘\_nm\_’ and ‘\_ns\_’ respectively.

* + 1. Group ID

A unique string that identifies the consumer group this consumer belongs to. This property is required. By setting the same group id multiple processes indicate that they are all part of the same consumer group.

* + 1. Client ID

The client id string to pass to the server when making requests. The purpose of this is to be able to track the source of requests beyond just ip/port by allowing a logical application name to be included in serverside request logging. If specified this field should ensure unique values across to identify each client uniquely, when not specified BE would use auto generated client ids.

* + 1. Consumer Threads

Number of KafkaConsumer threads BE should create for the particular destination.

* + 1. Heartbeat interval

The expected delay between heartbeats to the group coordinator. Heartbeats are used to ensure that the worker's session stays active and to facilitate rebalancing when new members join or leave the group. The value must be set lower than Session Timeout, but typically should be set no higher than 1/3 of that value.

* + 1. Session Timeout

The timeout used to detect worker failures. The worker sends periodic heartbeats to indicate its liveness to the broker. If no heartbeats are received by the broker before the expiration of this session timeout, then the broker will remove the worker from the group and initiate a rebalance.

* + 1. Enable AutoCommit

If checked the consumer's offset will be periodically committed in the background without waiting for the Event to be consumed or acknowledged.

* + 1. AutoCommit Interval

When autocommit is enabled this field identifies the frequency in milliseconds that the consumer offsets are auto-committed to Kafka.

* + 1. Async Sender

When checked BE would wait for the message to be actually sent as against relying on the Kafka Client library to send it asynchronously and assuming sent.

* + 1. Compression Type

Specifies the compression type for messages being sent using the particular destination.

* + 1. Send Messages Batch Size

The producer will attempt to batch records together into fewer requests whenever multiple records are being sent to the same partition. This helps performance on both the client and the server. This configuration controls the default batch size in bytes.  
No attempt will be made to batch records larger than this size.

* + 1. Send Message Key RuleFunction

The URI of a RuleFunction that is to be used to compute the keys for the messages being sent using the destination. The RuleFunction should have the event in scope as the sole parameter, and should return a String value for the message key. When a RuleFunction URI is not specified BE will send message without a key.

* 1. **Serializers**
     1. KafkaMapSerializer

The KafkaMapSerializer encodes the event properties and the payload as a sequence of bytes. The KafkaMapSerializer is used to send/receive events between BE instances. For incoming messages the serializer converts the bytes sequence to event and its payload.

* + 1. KafkaStringPayloadSerializer

The KafkaStringPayloadSerializer decodes the text from the message as an XML string. For incoming messages, the KafkaStringPayloadSerializer converts XML string to event payload. For outgoing events, the serializer converts XML payloads to XML string. This serializer just serializes/deserializes the event payload.