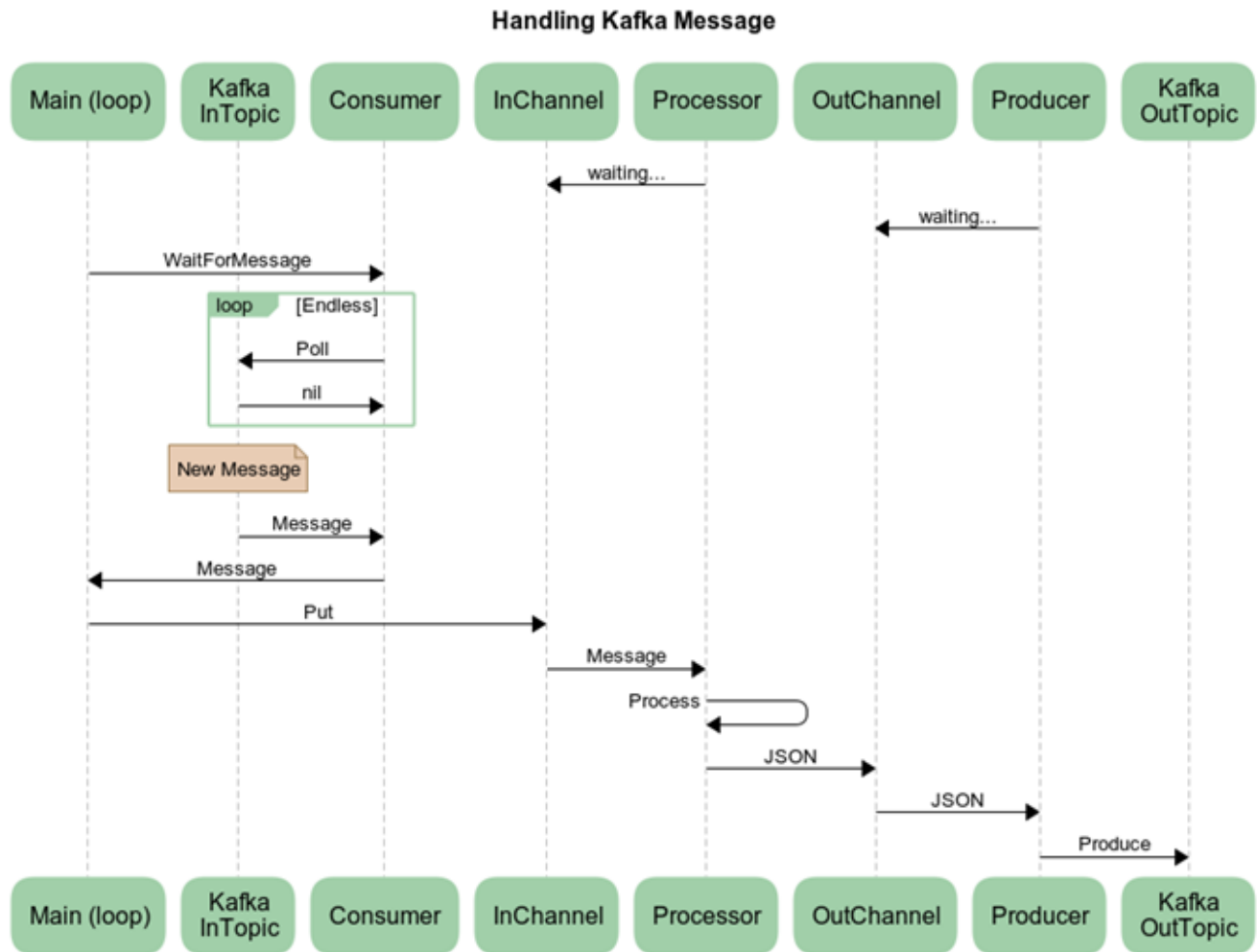


RicAsn2Json Converter

Message handling sequence



Players and roles

PLAYER	ROLE
Configuration	· Yaml configuration model
Consumer	<ul style="list-style-type: none">• Subscribe to topics• WaitForMessage (Polling on inTopic)<ul style="list-style-type: none">◦ returns KafkaMessage
Processor	<ul style="list-style-type: none">• Read from inCh• Extract header• Unbase64• Unpack body (Packed -> PDU)• Encode PDU -> Xer• Xer -> JSON (using goxml2json)• Add header to JSON• Write JSON to outCh

Producer	<ul style="list-style-type: none"> • Read from outCh • Publish to outTopic
Main	<ul style="list-style-type: none"> • Initialization steps <ul style="list-style-type: none"> ◦ Load and log configuration ◦ Initialize inChannel and outChannel ◦ Initialize Consumer, Processor(inch, outCh) and Producer(outCh) ◦ Subscribe Consumer ◦ Start Processor and Producer ◦ Http server for health endpoint (go routine) • Loop on Consumer.WaitForMessage <ul style="list-style-type: none"> ◦ Write message to inCh

Configurations

brokers	List of ip:port	
Consumer-group	Name - same for all instances	
In-topic	Name	
Out-topic	Name	
In-buffer-size	For inChannel	default value: 2 * #CPUs
Out-buffer-size	For outChannel	default value: 1 * #CPUs

Optional future configurations (for next versions, if more tuning needed)

Consumer-heart-beat-interval-ms	The expected time between heartbeats to the consumer coordinator when using Kafka's group management facilities. Heartbeats are used to ensure that the consumer's session stays active and to facilitate rebalancing when new consumers join or leave the group. The value must be set lower than <code>session.timeout.ms</code> , but typically should be set no higher than 1/3 of that value. It can be adjusted even lower to control the expected time for normal rebalances	see https://docs.confluent.io/current/installation/configuration/consumer-configs.html
Consumer-session-timeout-ms	The timeout used to detect consumer failures when using Kafka's group management facility. The consumer 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 this consumer from the group and initiate a rebalance. Note that the value must be in the allowable range as configured in the broker configuration by <code>group.min.session.timeout.ms</code> and <code>group.max.session.timeout.ms</code> .	see https://docs.confluent.io/current/installation/configuration/consumer-configs.html
Processor-pool-size	Default=#CPUs	We start with go-routine per message. We will use this if we'll need to define routine-pool.
Producer-pool-size	Default=#CPUS*FACTOR	We start with go-routine per message. We will use this if we'll need to define routine-pool.

Concurrency, Synchronicity & Scalability

- Single Consumer (per partition. Multiple partitions will have multiple instances)
- Multiple Processors (each message is processed by a go-routine)
- Multiple Producers (each message is produced by a go-routine)
- Asynchronous Producer – log errors
- Multiple instances of app will address multiple partitions – this is managed exogenically by Kafka + K8S.

Dependencies

- confluent-kafka-go
- librdkafka
- goxml2json

Error handling

Shutdown for these errors (otherwise, log and proceed):

- Subscription error
- Polling error (Partition error, AllBrokersAreDown)

Suggested JSON message format

```
{  
  "header": {<header data>},  
  "body": {<E2AP as json>}  
}
```

Suggested name

E2JStreamer