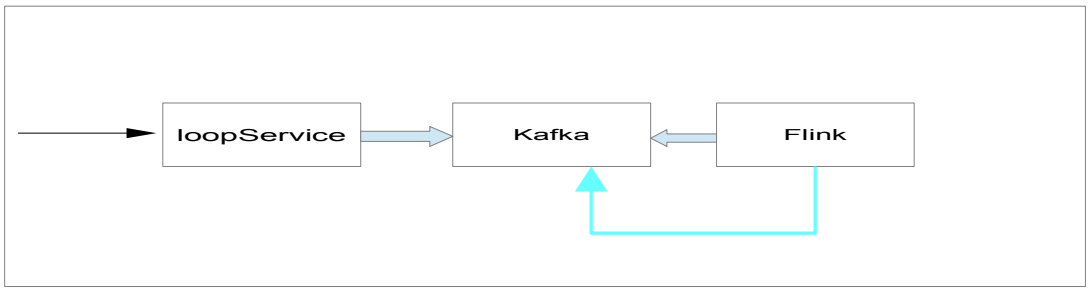
Architecture for LoopService

The figure below depicts the architecture that will be used to process the applications and events.



POST apps request:
Apps are posted to the loop service which puts the data onto kafka (app) queue.
Flink continuously polls the (app) queue and aggregates the data and generates an event when the data meets the criteria we specified. This event is placed on to a separate kafka event queue.

GET Event Request:
When a request to get the current event is requested from the loop service, it pulls the data from the event queue and returns it back to the user.

Below is a description of the different elements:

LoopService: This is the front end service that handles all request. To allow for scalebility it just receives applications and places them on to a queue or reads information from a queue. It has no state so, so if we have an increase in traffic numerous instances of these can be created to handle the load.

Kafka: This allows us to build microservices to process the applications being received.
https://kafka.apache.org/

Flink: This is used to process the stream of applications. Once the stream meets a certain threshold we can raise event and place it onto the kafka queue.
https://flink.apache.org/