Arrowhead Framework

- Defines SOA framework for IoT applications;
- Based on 3 core services:
  - service discovery
  - orchestration
  - authentication
- Several other services: QoS Manager, Gate keeper, Event Handler, etc.

Event Handler

Used for sending periodic updates from a producer service to several consumer services. It is also based on a SOA approach.
- REST/HTTP(S) implementation of a publish-subscribe message broker
- High demanding applications require:
  - High throughput
  - Low end-to-end delay

Improving the Event Handler

Problems:
1. none of the three components (producer, consumer and the Event Handler) reused connections
2. Event Handler creates a new thread for every incoming request

Solutions:
1. A connection pool at the publisher side
   - request for a route for which the client already has a persistent connection available in the pool will be handled by renting a connection from the pool rather than creating a brand-new connection
2. Server-Sent Events in the Event Handler and Subscriber
   - Just by changing the configuration of the Event Handler on Jersey
3. Thread Pool in the Event Handler
   - At the Grizzly HTTP server module

Experimental results

![Graph showing end-to-end latency improvements](image)

References