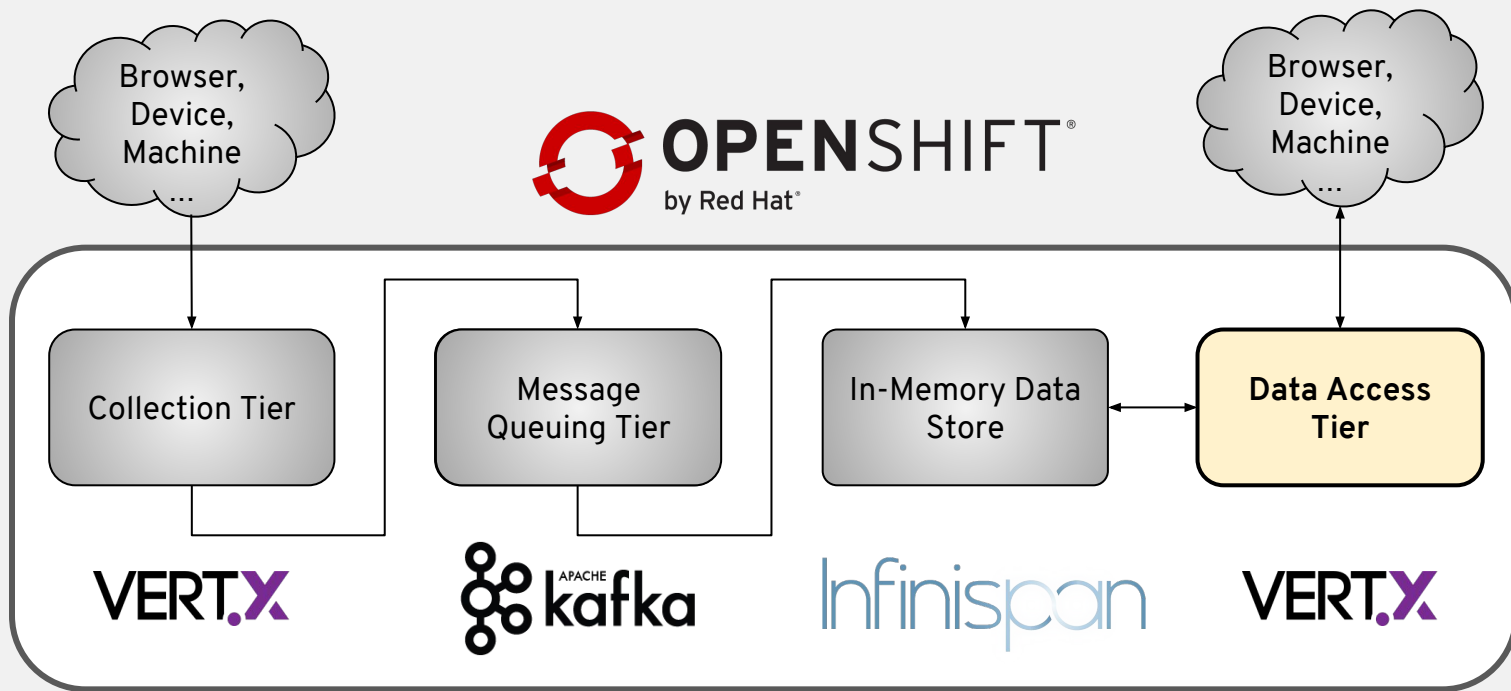




redhat.

Web tier

Streaming Data - Deep Dive



Streaming Data - Deep Dive



Communication protocols

Web-hooks

Http (Long) Polling

Server Sent Events

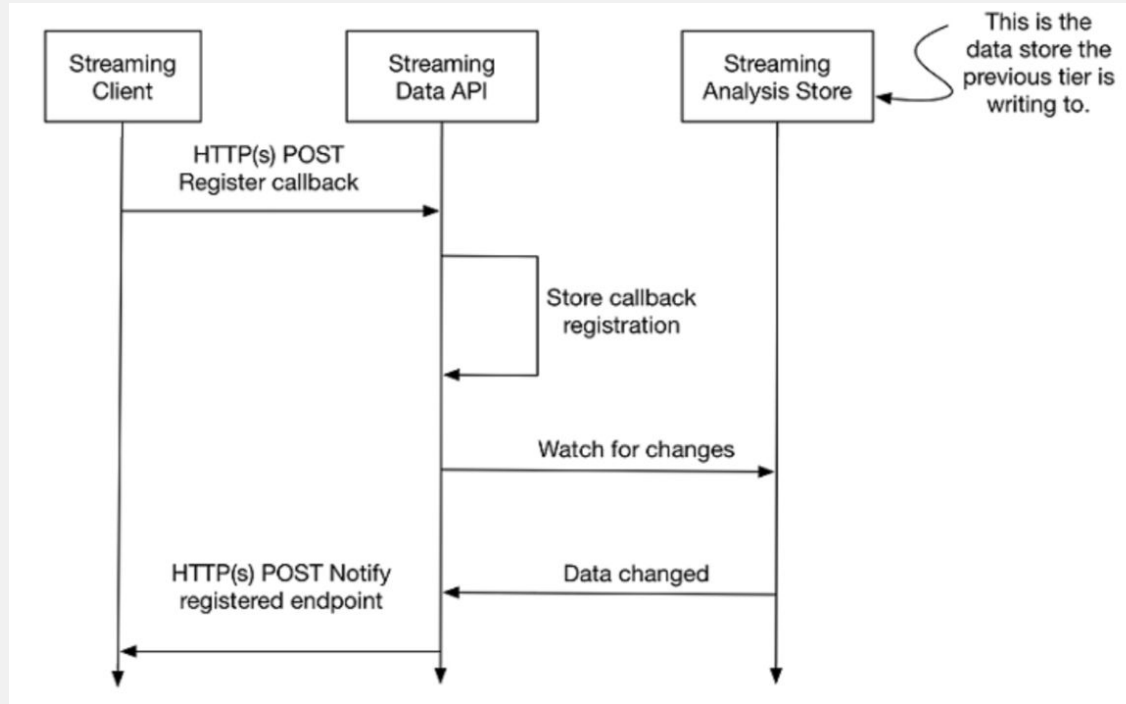
Websockets

Web-hooks

Since 2007

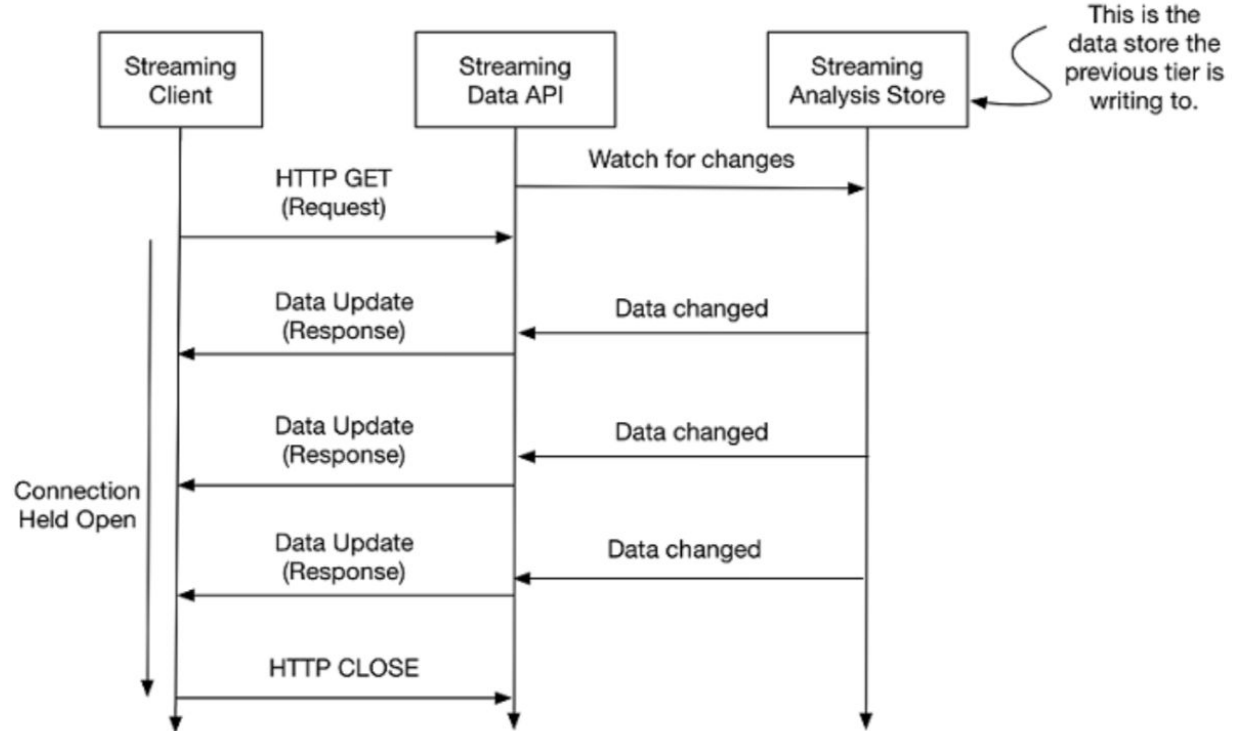
Not standard but widely adopted

Similar to callbacks



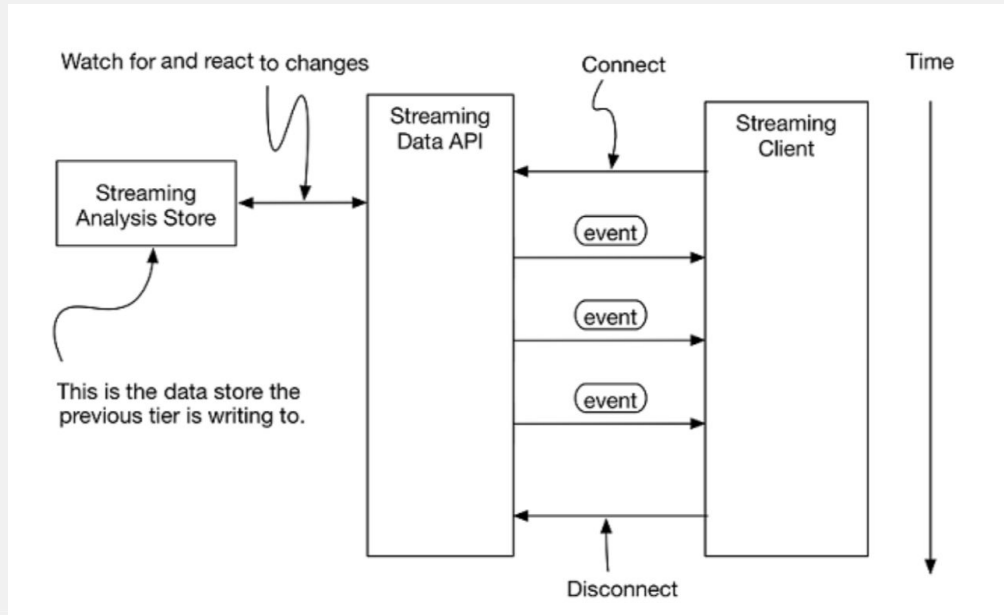
Http long-polling

Maintains
connections
opened



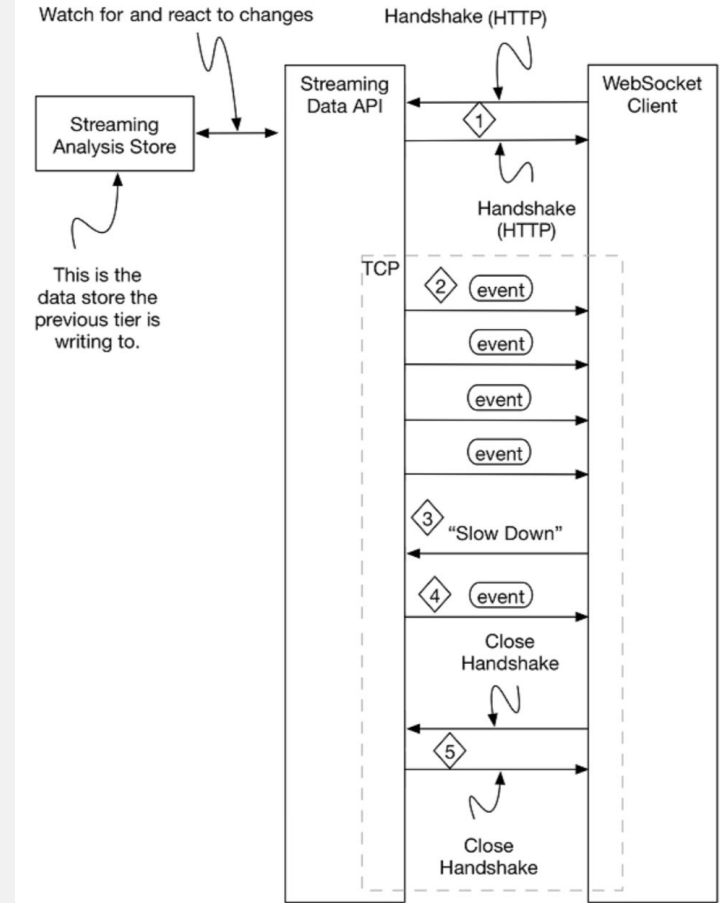
Server sent events

Since 2015, developed by W3C to solve long-polling issues



Web sockets

Since 2011, full duplex protocol over TCP



Protocols from Streaming API point of view

Protocol	Message frequency	Communication direction	Message latency	Efficiency	Fault Tolerance / Reliability
WebHooks	Low	Uni-Directional (Server to Client)	Average	Low	None
HTTP Long Polling	Average	Bi-Directional	Average	Average	None
Server Side Events	High	Uni-Directional	Low	High	None by default, can be partially implemented
WebSockets	High	Bi-Directional	Low	High	None by default, can be completely implemented

Vert.x Event Bus

The event bus is the nervous system of Vert.x applications

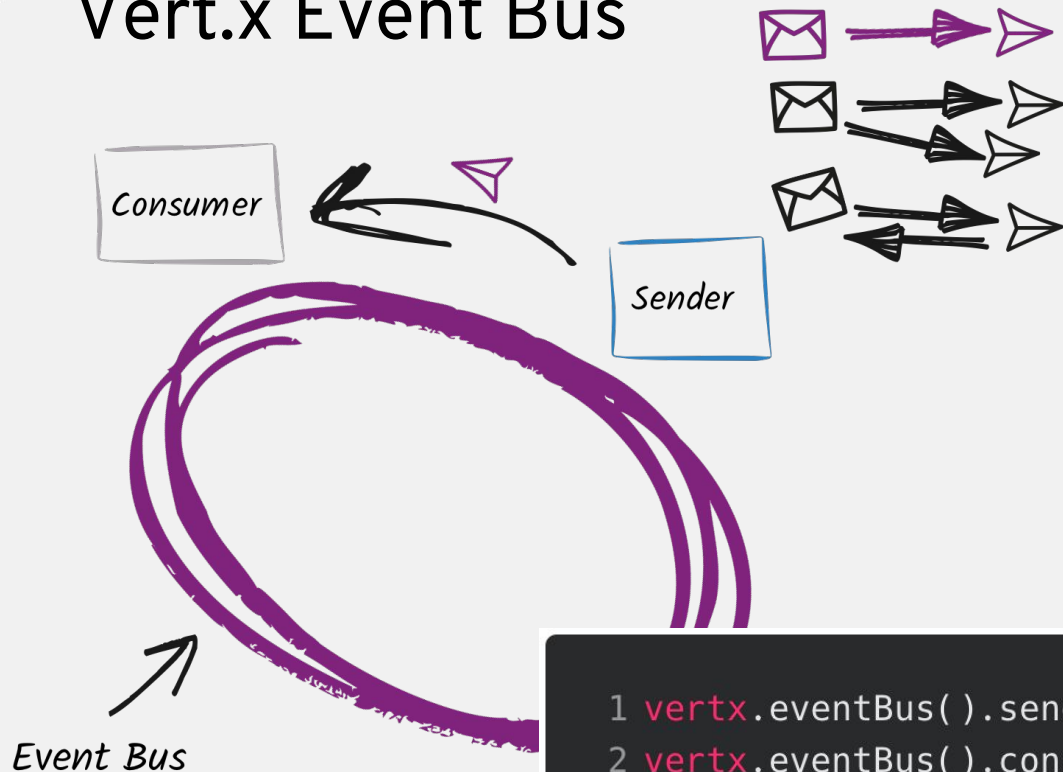
Allows different components to communicate regardless

- the implementation language and their location
- whether they run on vert.x or not (using bridges)

Address: Messages are sent to an address

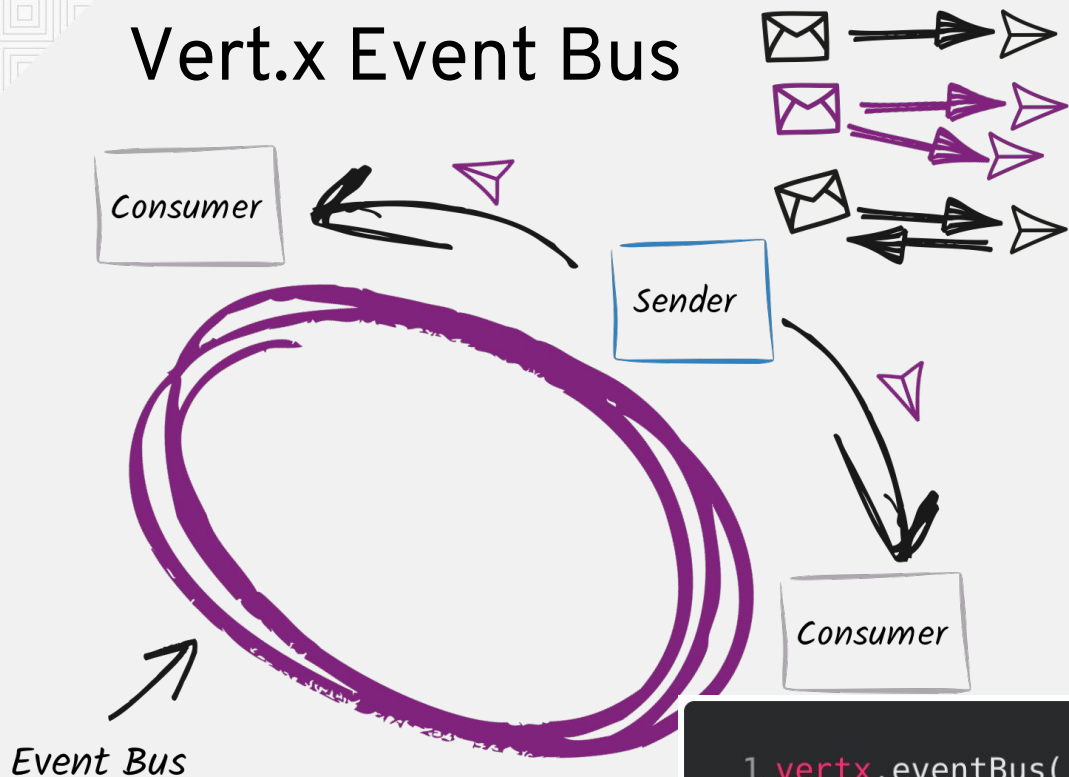
Handler: Messages are received by Handlers.

Vert.x Event Bus



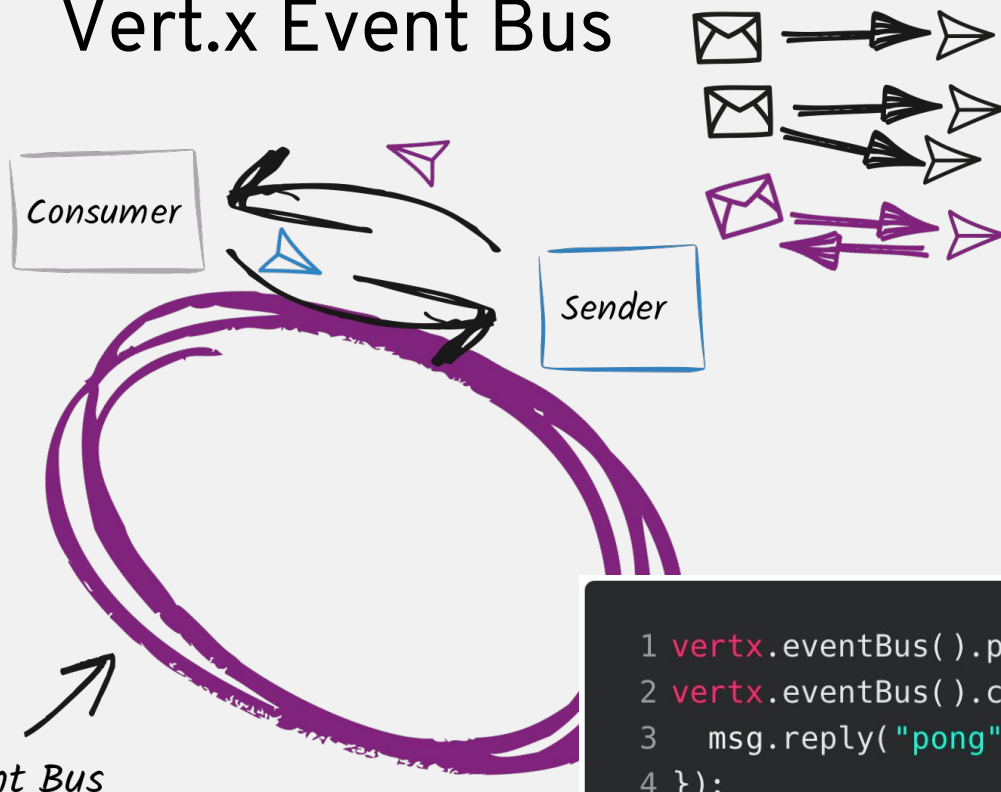
```
1 vertx.eventBus().send("address", "message");  
2 vertx.eventBus().consumer("address", msg -> {});
```

Vert.x Event Bus



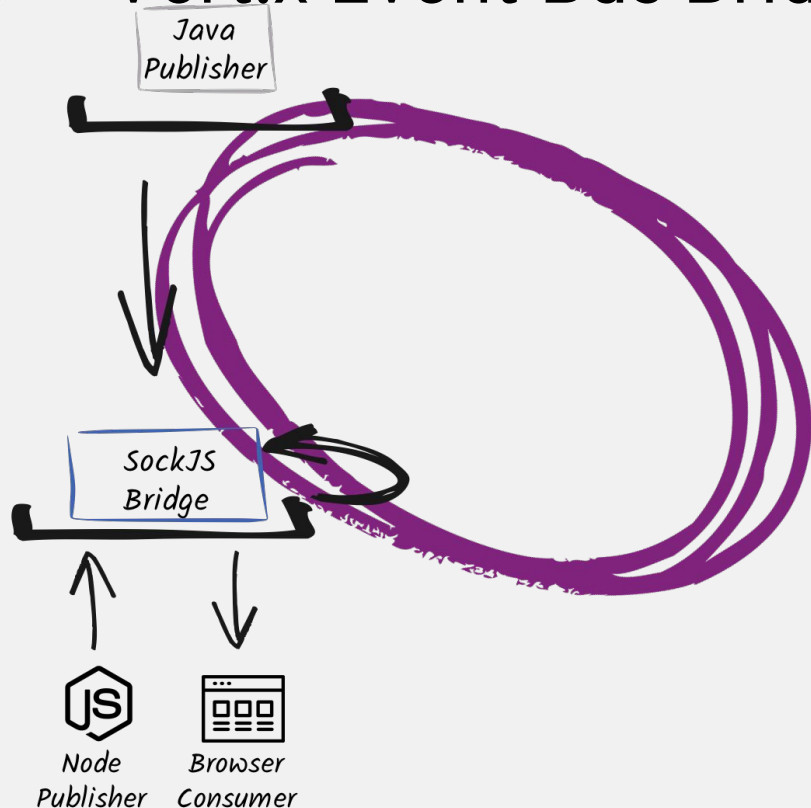
```
1 vertx.eventBus().publish("address", "message");  
2 vertx.eventBus().consumer("address", msg -> {});
```

Vert.x Event Bus



```
1 vertx.eventBus().publish("address", "ping", reply -> {});  
2 vertx.eventBus().consumer("address", msg -> {  
3   msg.reply("pong");  
4 });
```

Vert.x Event Bus Bridge



SockJS: browser, node.js

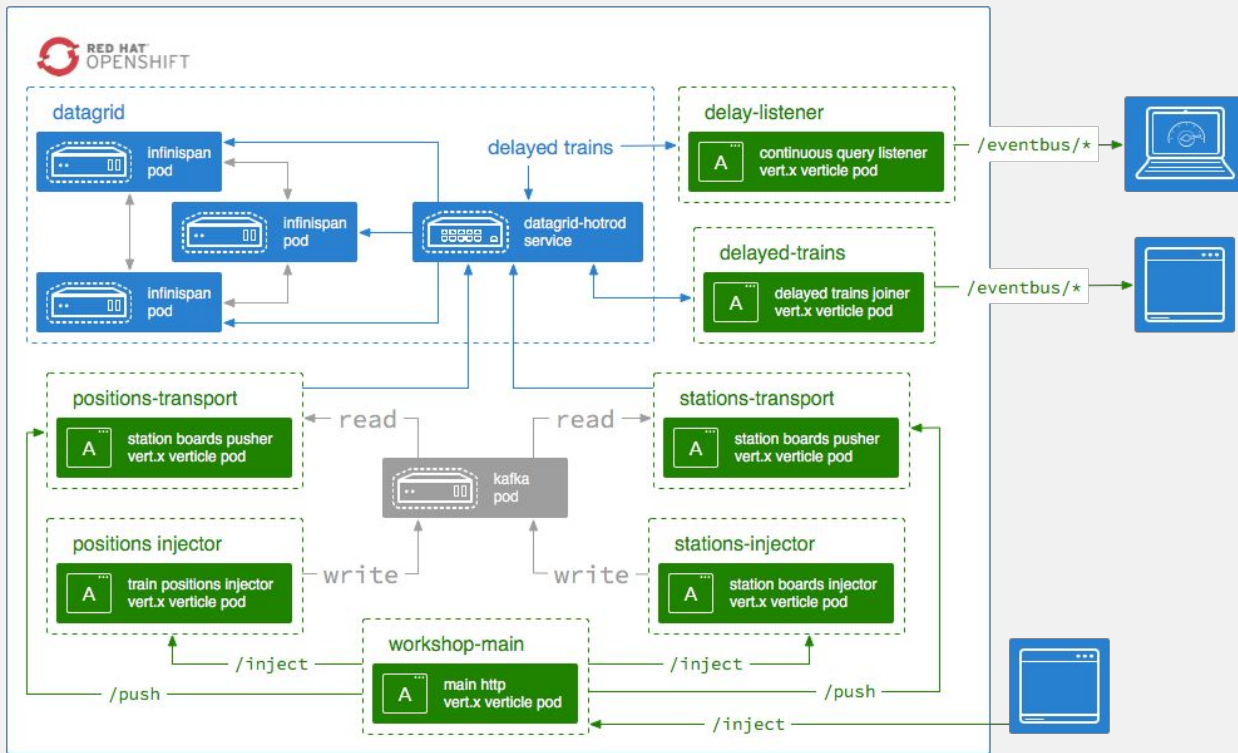
TCP: languages / systems able to open a TCP

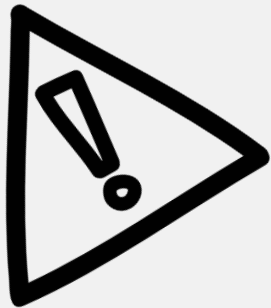
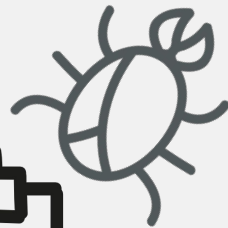
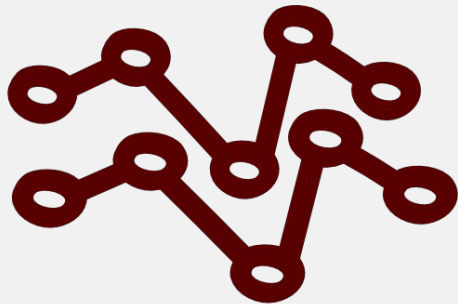
socket Stomp

AMQP

Apache Camel

SEASON FINALE





DEMO TIME!

