SpringOne Platform by Pivotal

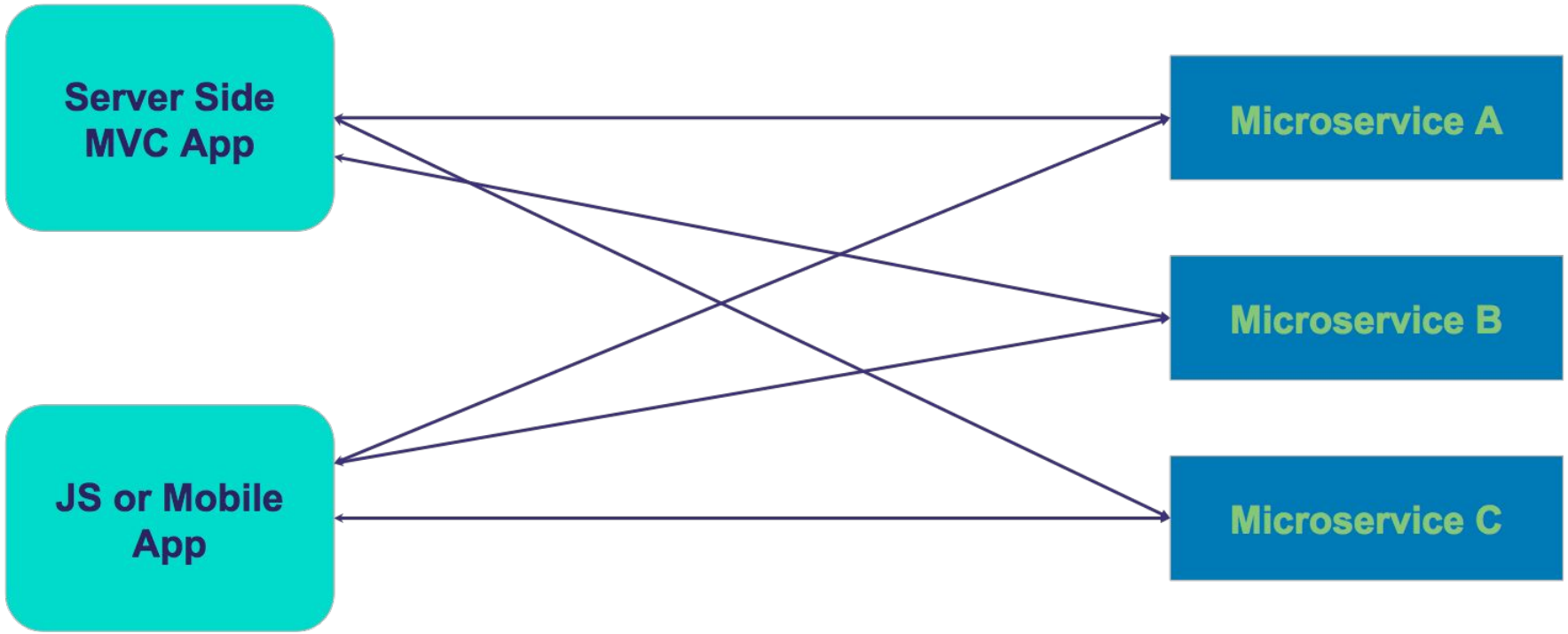
Spring Cloud Gateway

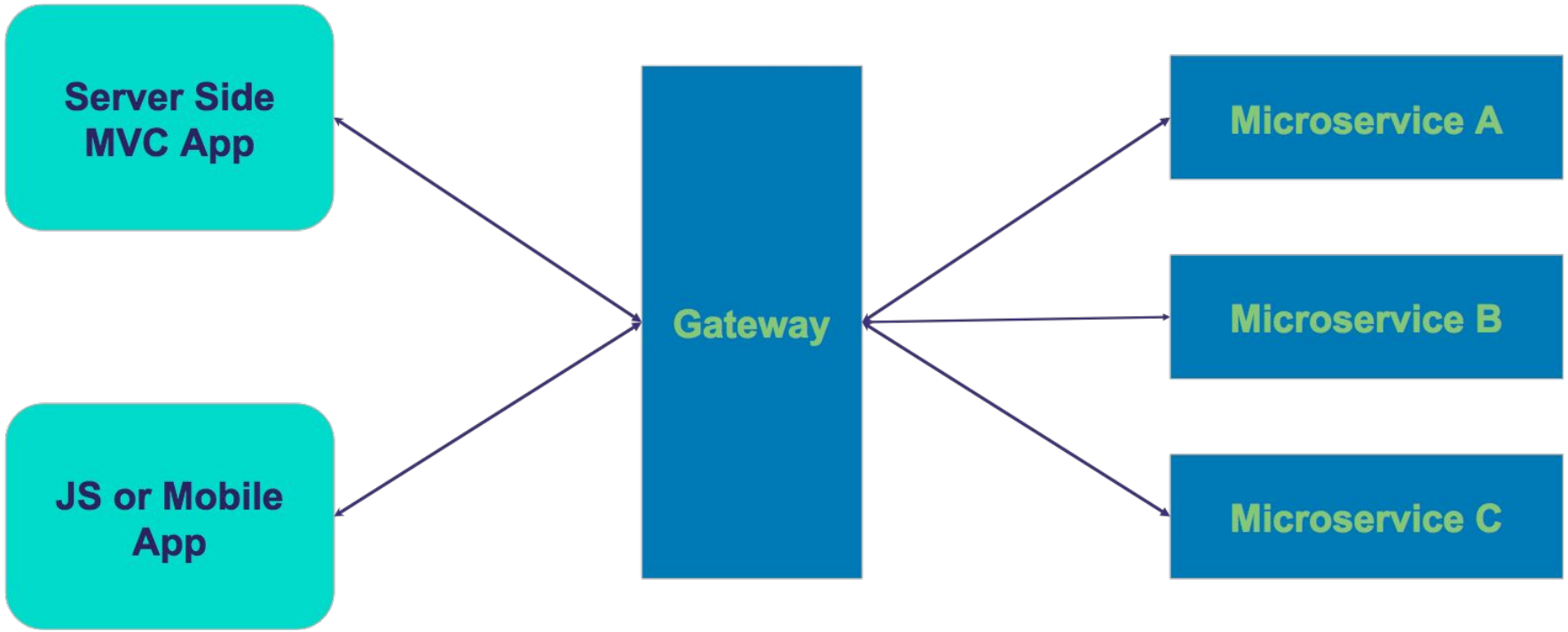
The Cloud-Native Gateway Developers Love

Spencer Gibb - @spencerbgibb
Ryan Baxter @ryanjbaxter
Stephane Maldini - @smaldini

HOME OF THE BULLDOGS

Monoliths to Microservices

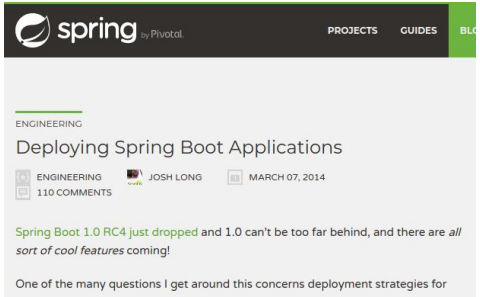

Server Side
MVC App
JS or Mobile
App
Microservice A
Microservice B
Microservice C

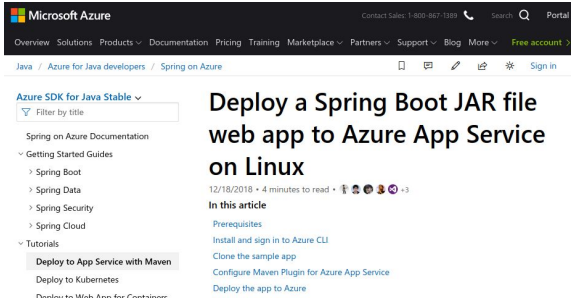

Server Side MVC App
JS or Mobile App
Gateway
Microservice A
Microservice B
Microservice C

Cloud Native

Cloud Native

Independently Deployable





Cloud Native

Service Registry Integration

Cloud Native

Distributed Configuration

Route Configuration: YAML

```
spring:
  cloud:
    gateway:
      - id: foo_route
        uri: lb://foo
        predicates:
        - Host=**.foo.org
        - Path=/headers
        - Method=GET
        - Header=X-Request-Id, \d+
        - Query=foo, ba.
        - Query=baz
        - Cookie=chocolate, ch.p
        - After=1900-01-20T17:42:47.789-07:00[America/Denver]
        filters:
        - AddRequestHeader=X-Request-Foo, Bar
        - AddResponseHeader=X-Response-Foo, Bar
        - Hystrix=foo
        - SecureHeaders
        - RewritePath=/foo/(?<segment>.*), /$\{segment}
```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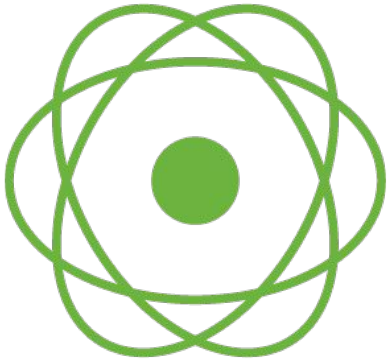
Cloud Native

Fault Tolerance

Teams Love It

Teams Love It



Project Reactor

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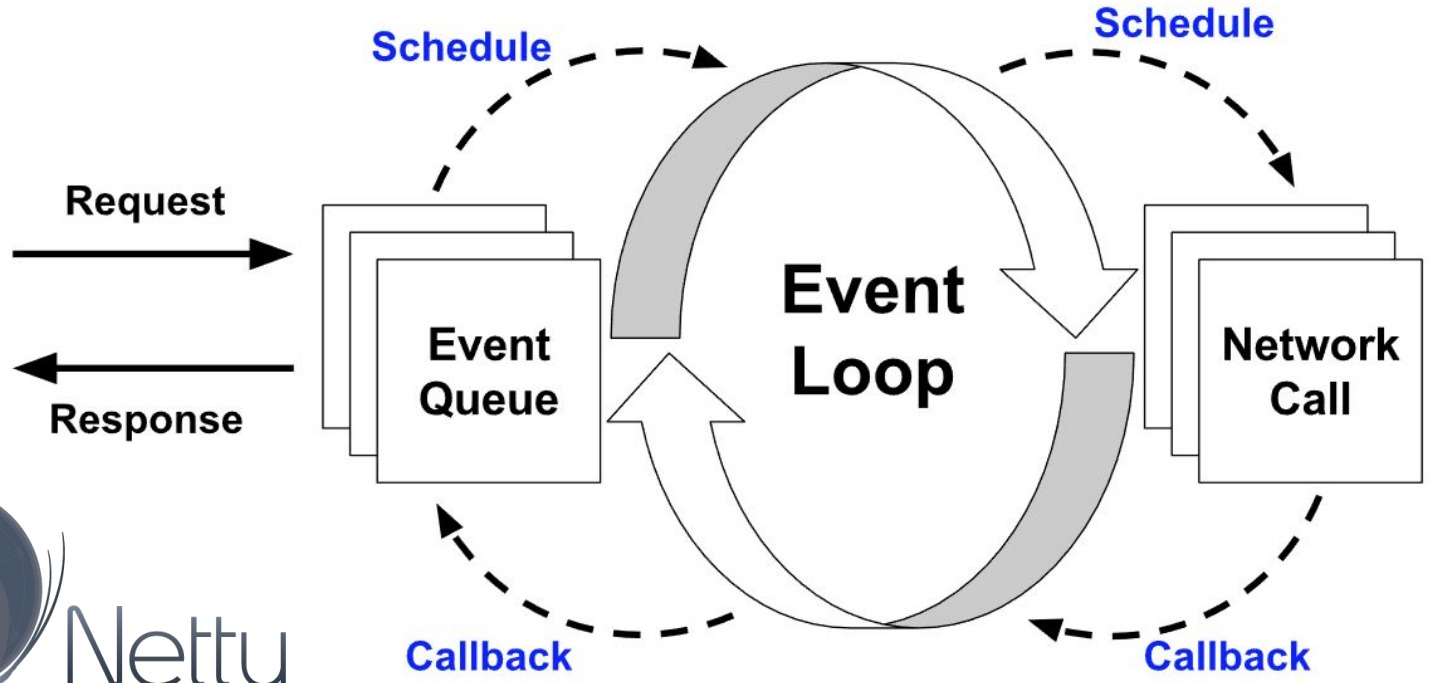
Reactor Netty: Non-Blocking



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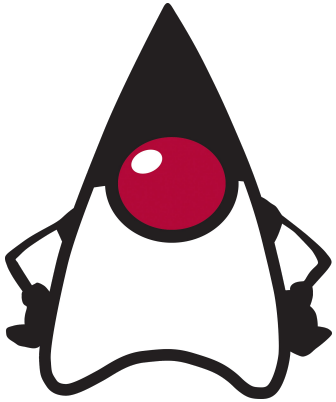
Teams Love It



Route Configuration: Java

```
@Bean
public RouteLocator customRouteLocator(RouteLocatorBuilder builder) {
  return builder.routes()
        .route("bypath", r -> r.path("/get").or().host("*.get.org")
           .uri("http://httpbin.org"))
        .route("host_segment", r -> r.host("{sub}.yourhost.org")
              .filters(f -> f.addRequestHeader("X-Foo", "Bar-{sub}"))
           .uri("http://httpbin.org"))
        .route("hystrix", r -> r.host("**.hystrix.org")
              .filters(f -> f.hystrix(config ->
            config.setName("mycmd").setFallbackUri("forward:/myfallback")))
           .uri("http://httpbin.org"))
        .route("rewrite", r -> r.host("**.rewrite.org")
              .filters(f -> f.rewritePath("/foo/(?<segment>.*)", "/${segment}"))
              .uri("http://httpbin.org"))
        .route("websockets", r -> r.path("/echo")
              .uri("ws://localhost:9000"))
        .build();
}
```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Route Configuration: Kotlin

```
val routeLocator = builder.routes {
    route(id = "test") {
        host("**.abc.org") and path("/image/png")
        filters {
            addResponseHeader("X-TestHeader", "foobar")
        }
        uri("http://httpbin.org:80")
    }
    route(id = "test2") {
        path("/image/webp") or path("/image/anotherone")
        filters {
            addResponseHeader("X-AnotherHeader", "baz")
            addResponseHeader("X-AnotherHeader-2", "baz-2")
        }
        uri("https://httpbin.org:443")
    }
}
```


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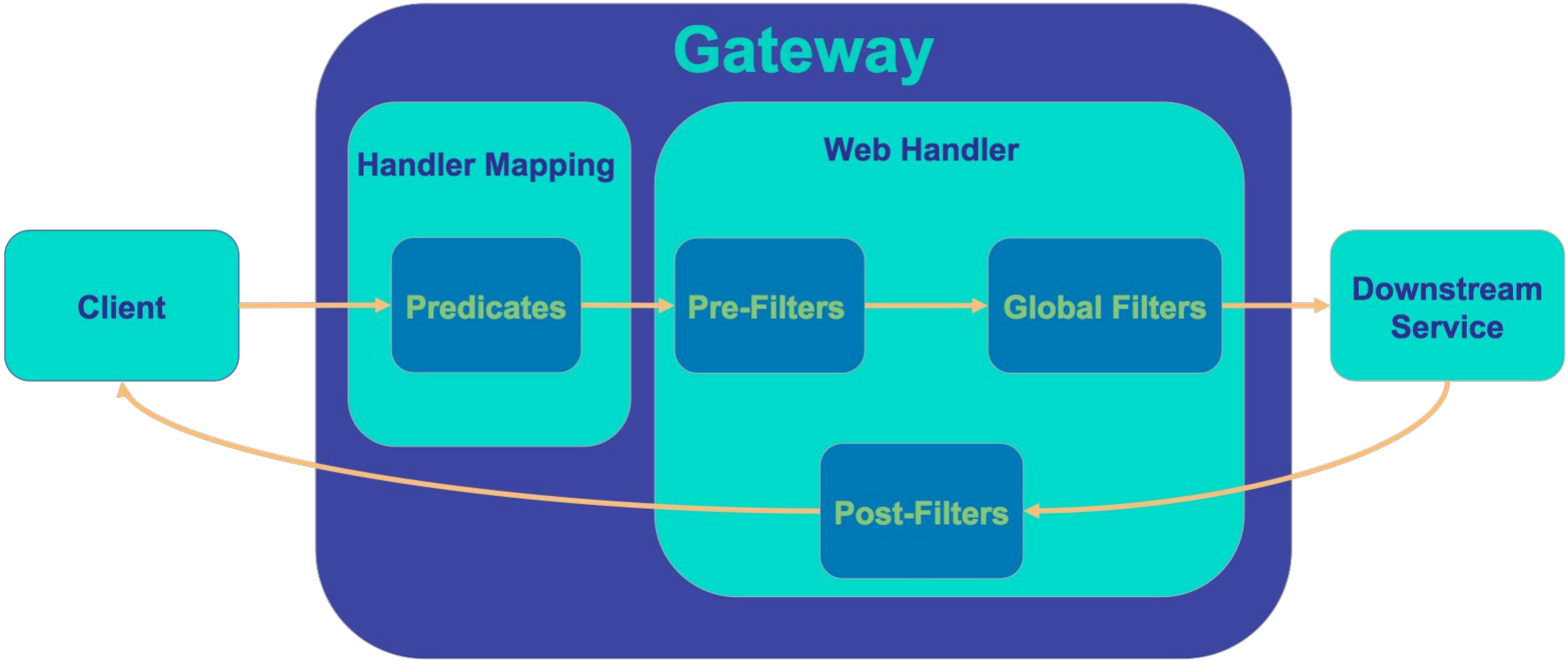
Inside the Gateway



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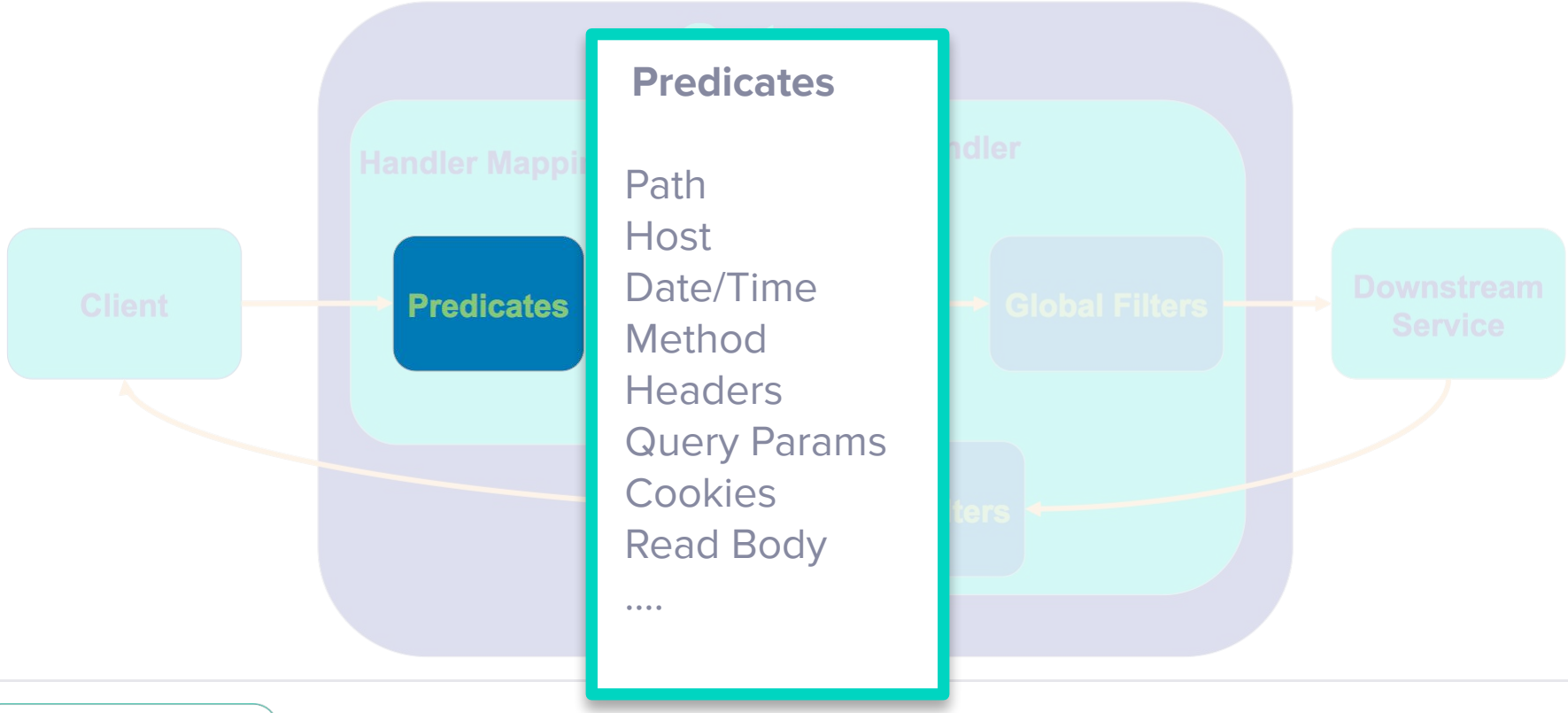
Inside the Gateway



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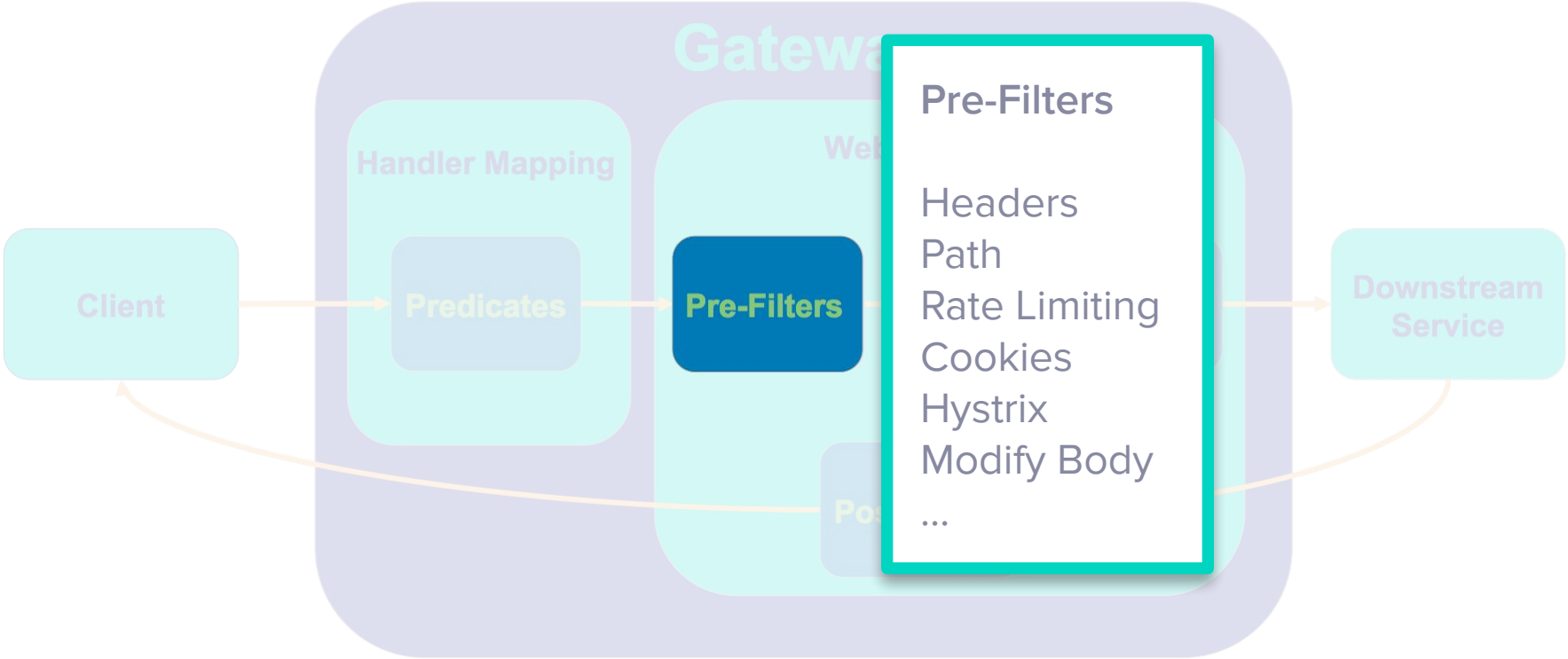
Inside the Gateway



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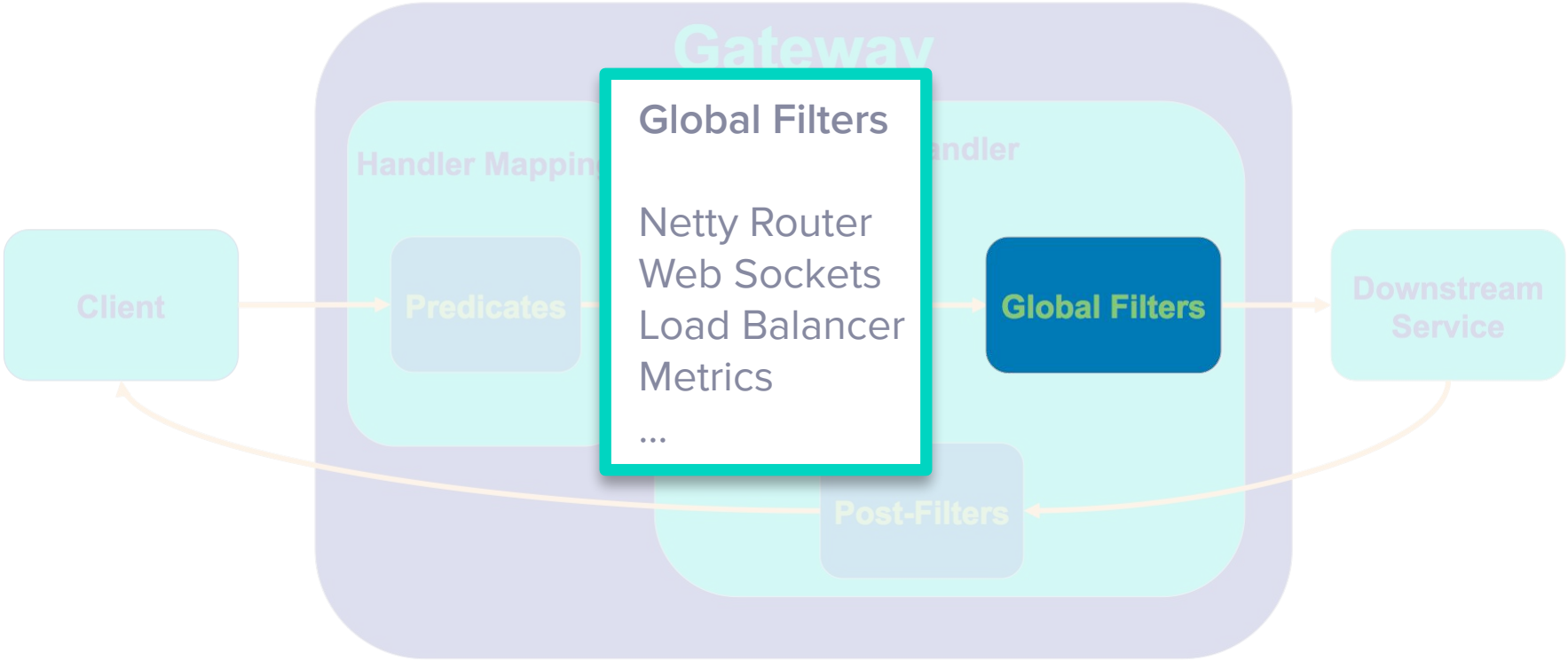
Inside the Gateway



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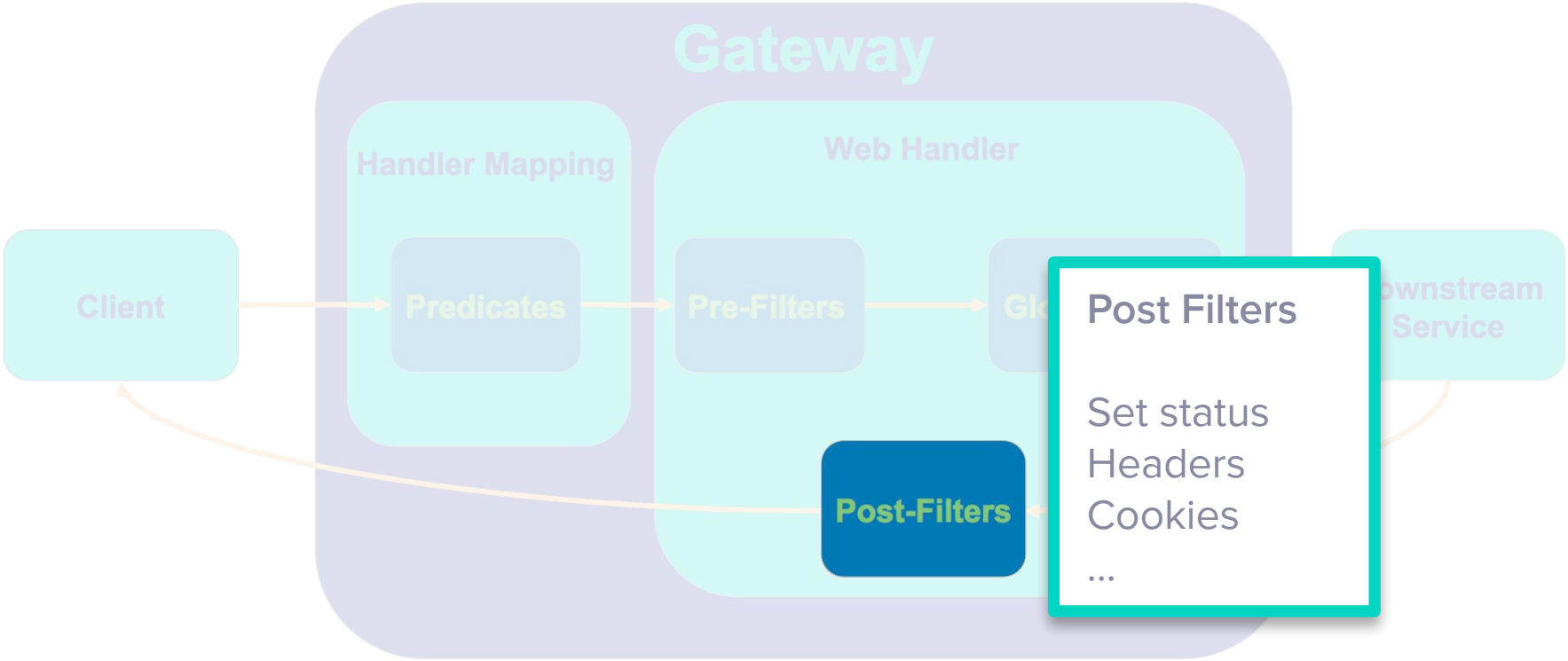
Inside the Gateway



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Custom Filters

```
public class SetStatusGatewayFilterFactory
    implements GatewayFilter {
  public GatewayFilter apply(Config config) {
     HttpStatusHolder statusHolder =
           HttpStatusHolder.parse(config.status);

     return chain.filter(exchange)
        .then(Mono.fromRunnable(() -> {
           setResponseStatus(exchange, statusHolder);
     }));
   }
}
```


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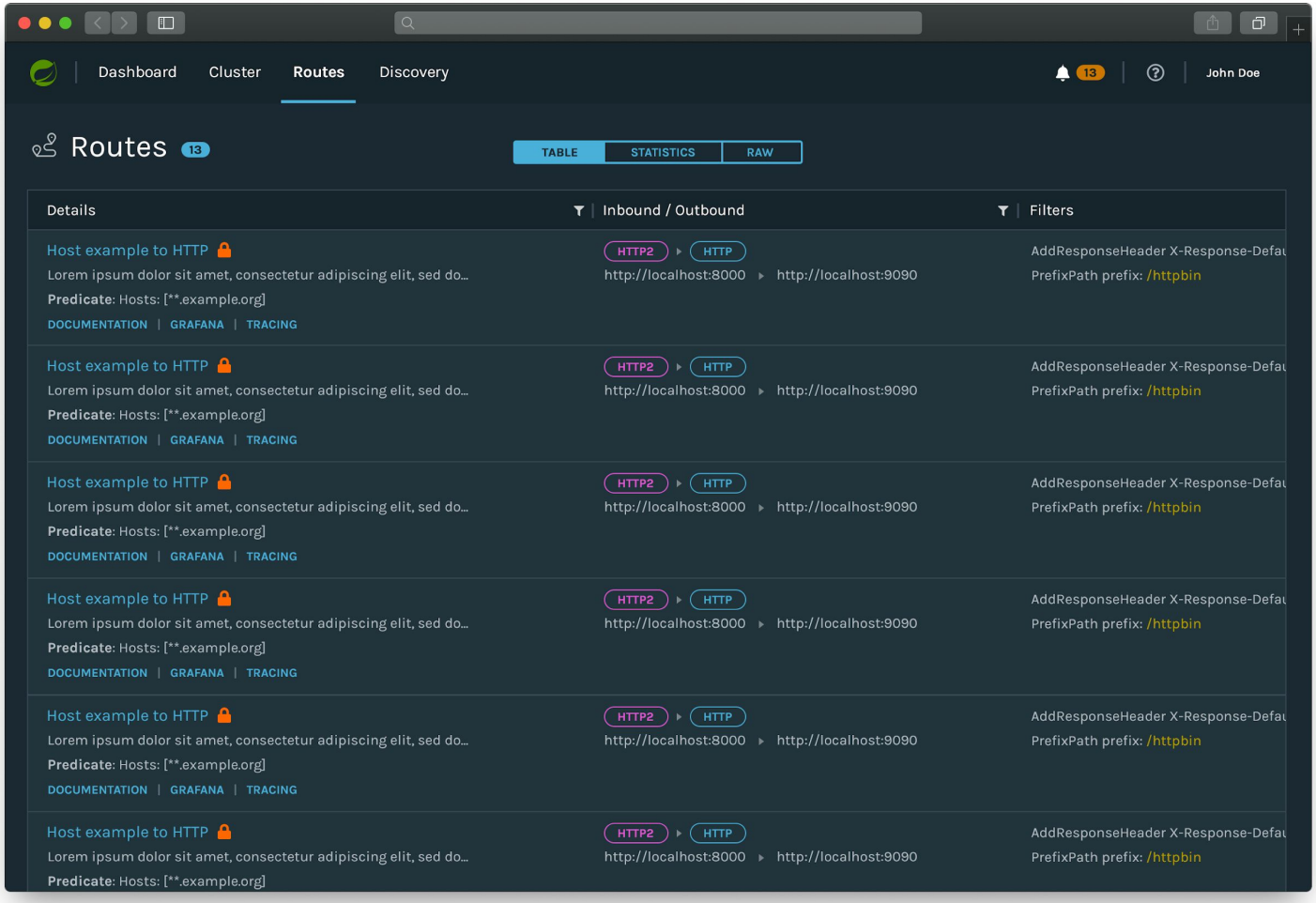
Demo!

Teams Love It

Management Console with:

Links to API Docs, Metrics & Tracing.

API Discoverability


Dashboard
Cluster
Routes
Discovery
13
John Doe
Routes 13
TABLE
STATISTICS
RAW
Details
Inbound / Outbound
Filters
Host example to HTTP
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...
Predicate: Hosts: [**.example.org]
DOCUMENTATION | GRAFANA | TRACING
HTTP2
HTTP
http://localhost:8000
http://localhost:9090
AddResponseHeader X-Response-Defau
PrefixPath prefix: /httpbin

Teams Love It

Releases, Not Tickets

Teams Love It

Polyglot Clients and Services

Security Loves It

Security Loves It

Spring Security

Security Loves It

Single Sign On (SSO)

Security Loves It

Cross-Cutting Security

Operators Love It

Operators Love It

Deconstructing Monoliths

Operators Love It

Exports Metrics To Existing Systems

Micrometer Support

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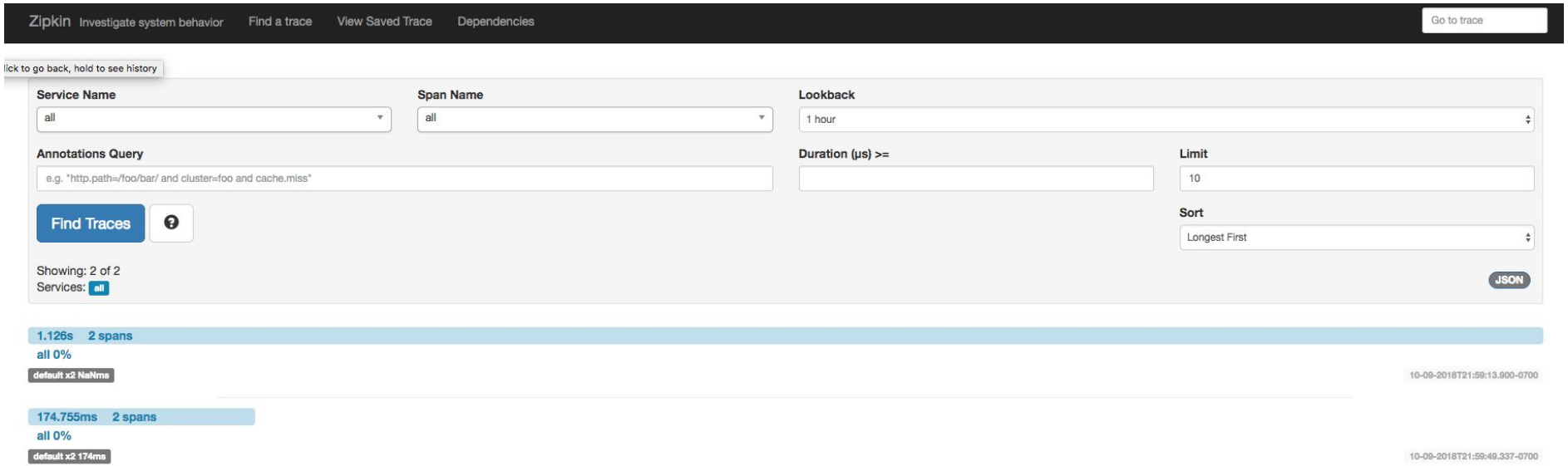
Operators Love It



Distributed Tracing Integration

Operators Love It

Request Rate Limiting

Operators Love It

Customized Actuator Endpoints

Operators Love It

Spring Cloud Gateway

The Cloud-Native Gateway Enterprises Love

Questions?

https://github.com/spring-cloud/spring-cloud-gateway

https://github.com/spring-cloud-samples/spring-cloud-gateway-sample

http://slides.com/spencer/spring-cloud-gateway

https://github.com/ryanjbaxter/gateway-s1p-2018

Spencer Gibb - @spencerbgibb
Ryan Baxter @ryanjbaxter
Stephane Maldini - @smaldini