Links to code and Q&A for this session:
https://tomcools.be/talks/ujugmeetup-fallacies-netflix-oss

Anticipating the fallacies of distributed computing using the Netflix OSS

#hystrix #archaius #eureka #zuul

Tom Cools https://github.com/TomCools |@TCoolsIT


citi
HSBC
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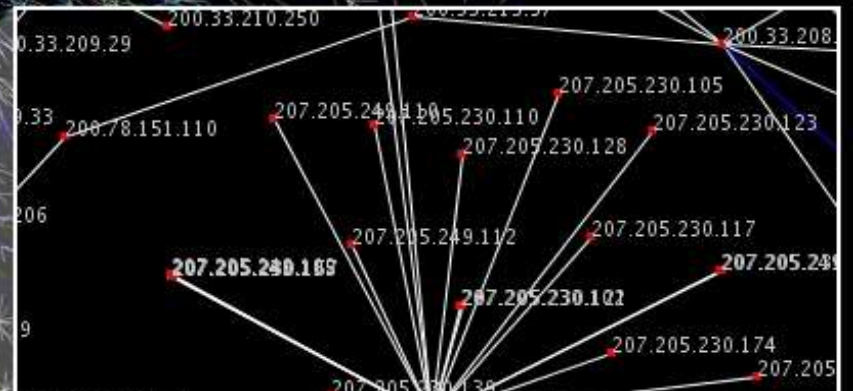
STATE STREET


FINTECH


Payment Services
Directive 2


"We need microservices"

Microservices ➔ Distributed Computing



The Eight Fallacies of Distributed Computing

1. The network is reliable
2. Latency is zero
3. Bandwidth is infinite
4. The network is secure
5. Topology doesn't change
6. There is one administrator
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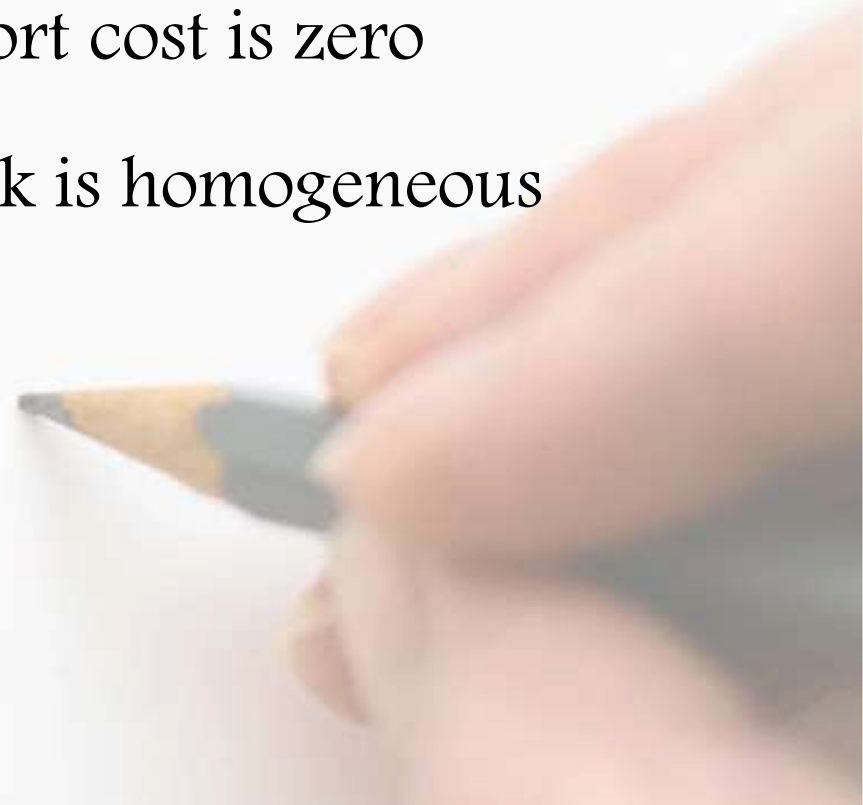
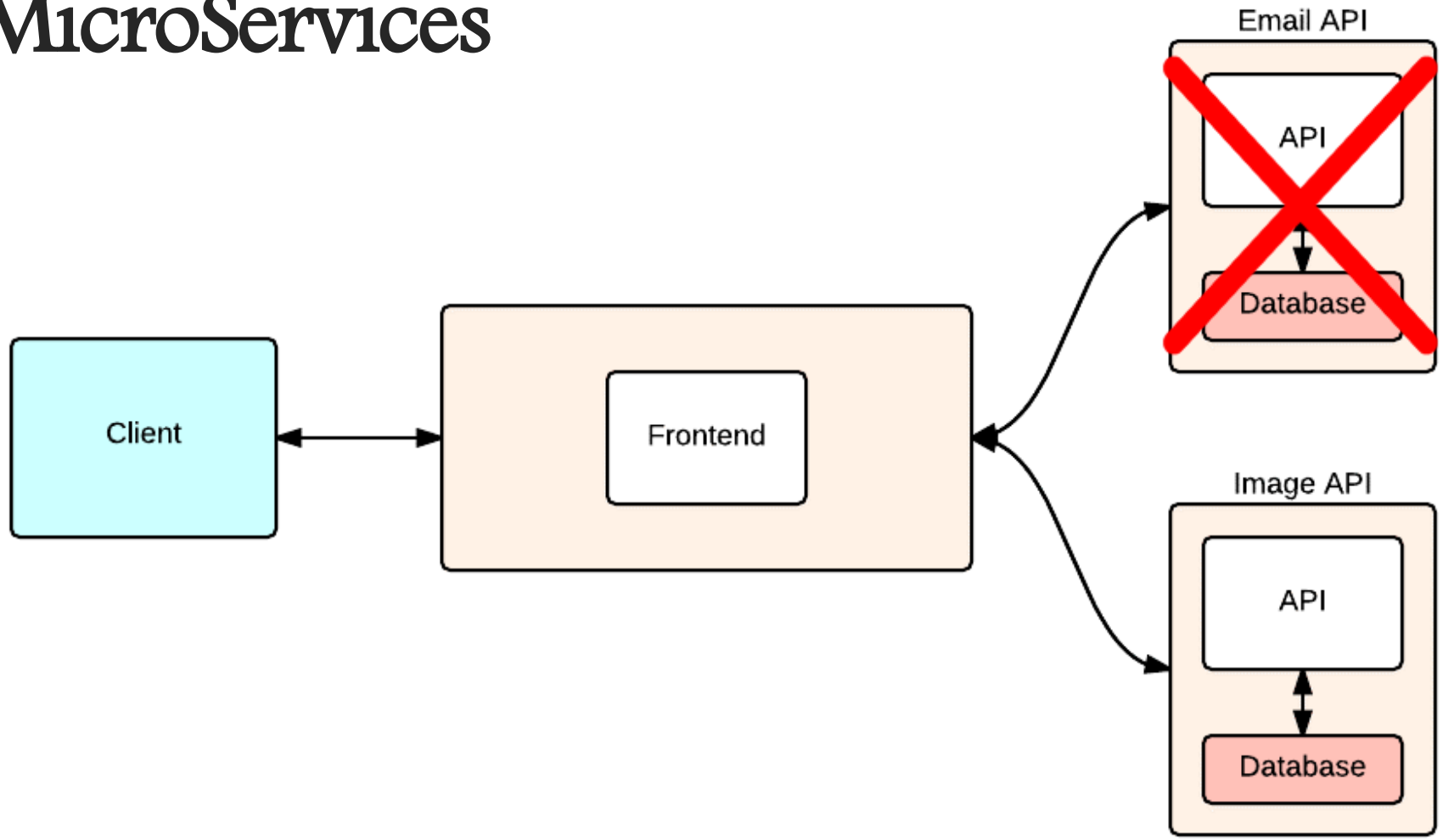


Fault tolerance promise of MicroServices



Allowing resilience != Assuring resilience


Demo

Requirements

Async Execution

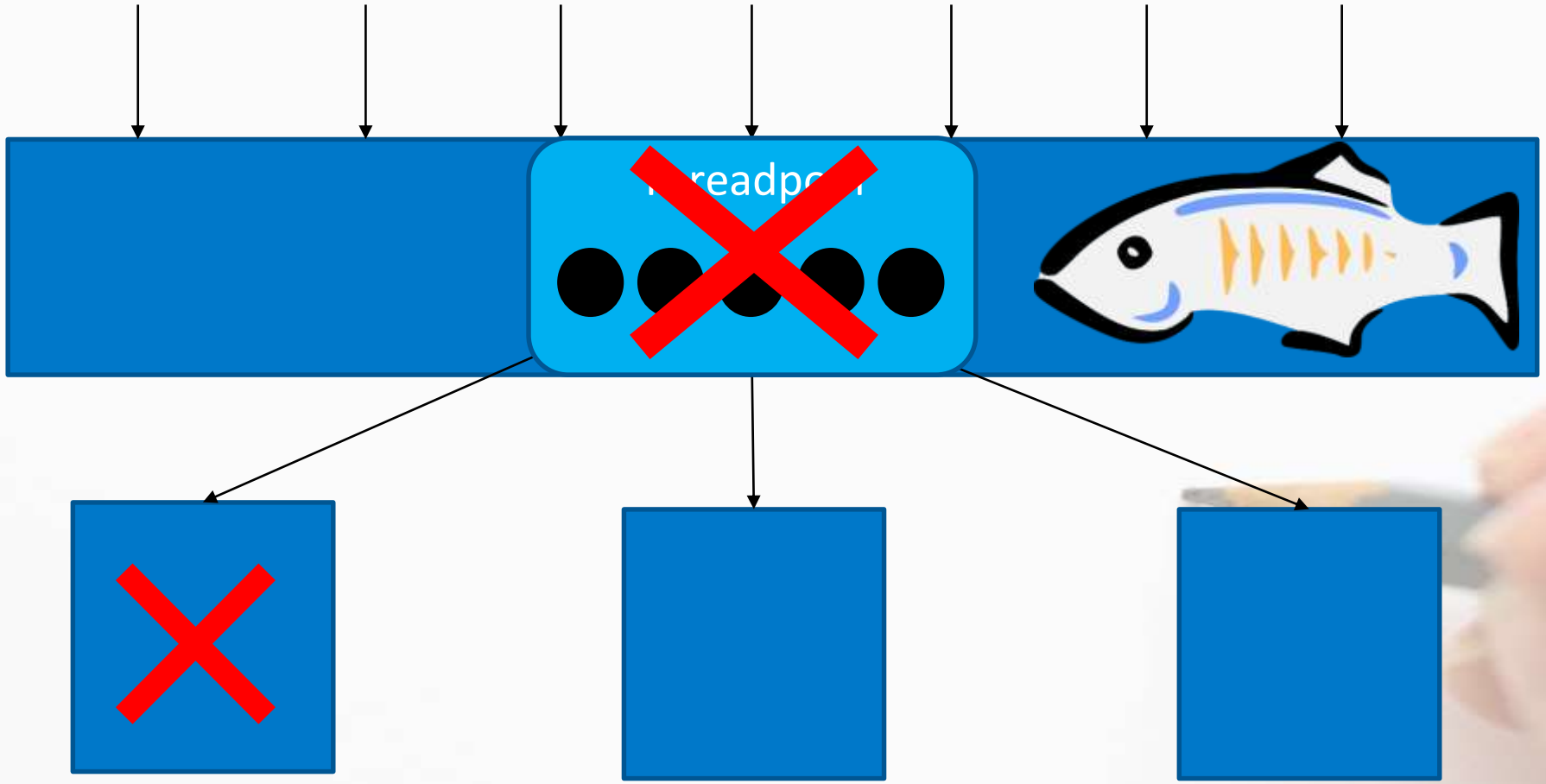
Multi-Threaded Support

SLA Call limitations

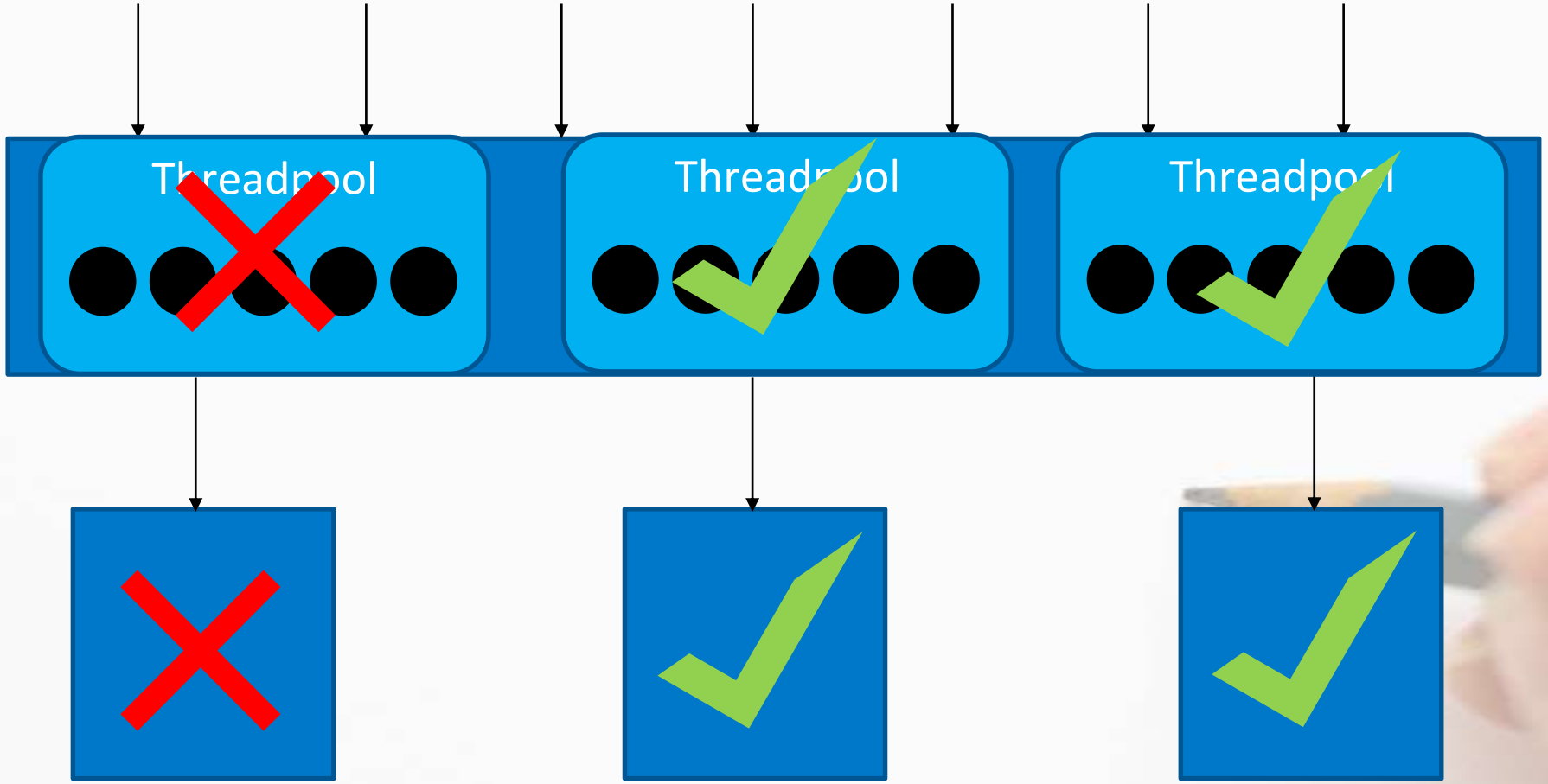
Fallback Mechanism

Request De-duplication

Problem: Thread Starvation

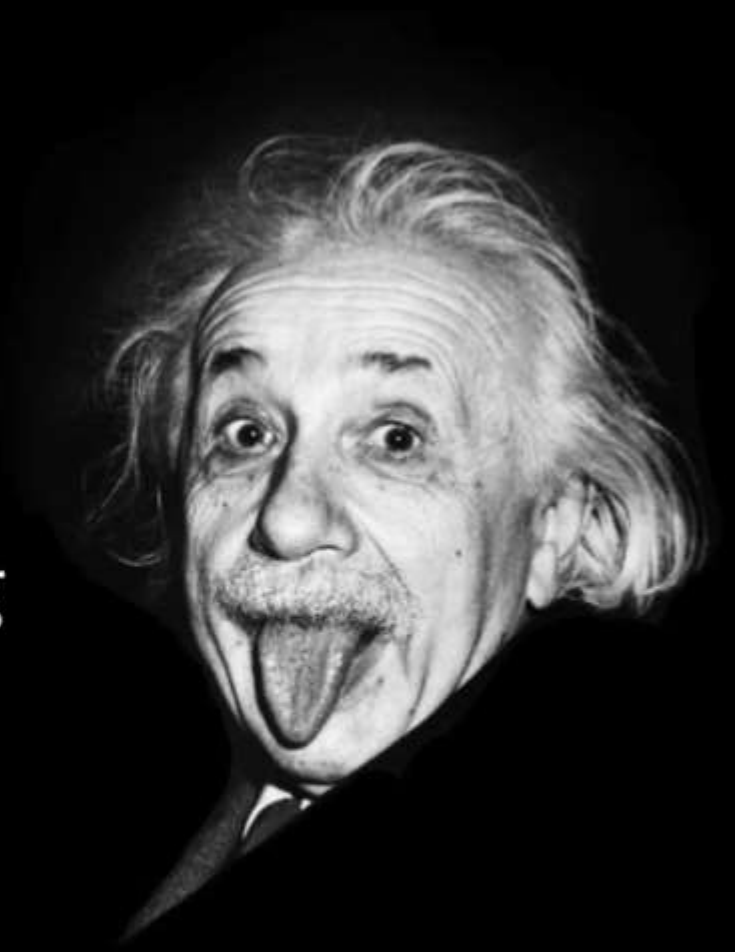


Solution: Bulkhead Pattern



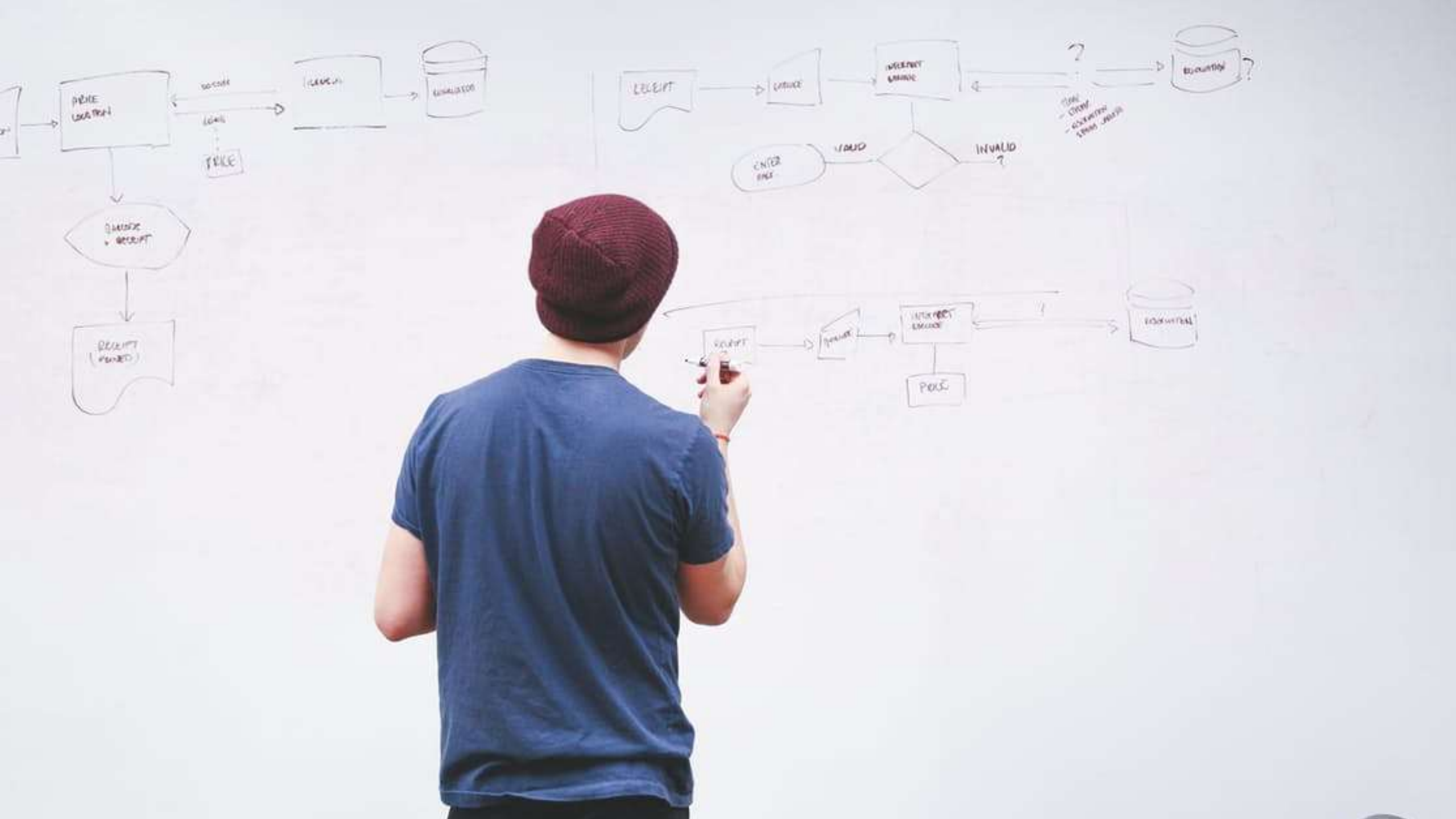
"Insanity is doing the same thing over and over again and expecting different results"

Albert Einstein




If You're Going to Fail
Fail Fast


hager
hager
hager


RECEIPT
INVALID
INVALID
TRUE

NETFLIX

The Netflix Tech Blo

Wednesday, October 28, 2015

Evolution of Open Source at Netflix

When we started our Netflix Open Source (aka NetflixOSS) Program several years ago, we didn't know how it would turn out. We did not know whether our OSS contributions would be used, improved, c
sending us feedb
The reasons for

Links

Netflix US & Canada Blog

Netflix America Latina Blog

Netflix Brasil Blog

NETFLIX | OSS

POWERED BY

JAX 2015 Award

Industry Awards!

Netflix is honored to receive the Jury's choice award for Innovation at JAX 2015 conference.

We would like to thank all of those who contribute to the Netflix open source community including our Netflix developers, all external contributors, and our active user base.

Netflix Open Source won the JAX Special Jury Award. Jury member Neal Ford was quoted as saying "that architecture is cool again, that it can be used as a business differentiator, and when done right it is a huge advantage. Netflix showed the power of internalizing DevOps into their architecture; all architectures will do this in the future.

Hystrix

Latency and Fault Tolerance Library


Demo

宋宮遺石

亭一帶原是宋朝皇宮遺址，明為周
府花園之煤山，清代在此建萬壽宮時，
煤山埋砌在龍亭殿基下面。一九九
年八月維修大殿時，發現基座下煤山
的宋宮遺石，遂從山峰上搬取兩塊立
天殿兩側山峰之方位。此石應為宋
名綱之遺物，是宋、元、明、清以來開封歷
滄桑巨變的見証者，以供遊人觀瞻。

戊寅仲夏古汴許安衆書丹

Archaius

Configuration Management Library

Configuration Management with Archaius

Dynamic, Typed Properties

Polling Framework

Callback Mechanism

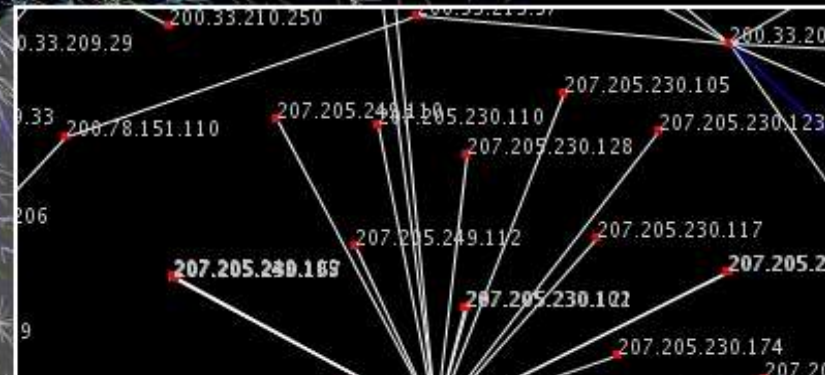
JMX MBean for access through Jconsole

Most Netflix Libraries use Archaius

Connection Mechanisms


Demo

Where is *SERVICE*?!



Eureka

Service Registry

Service Discovery Using Eureka

Eureka is a REST based service

Clusterable

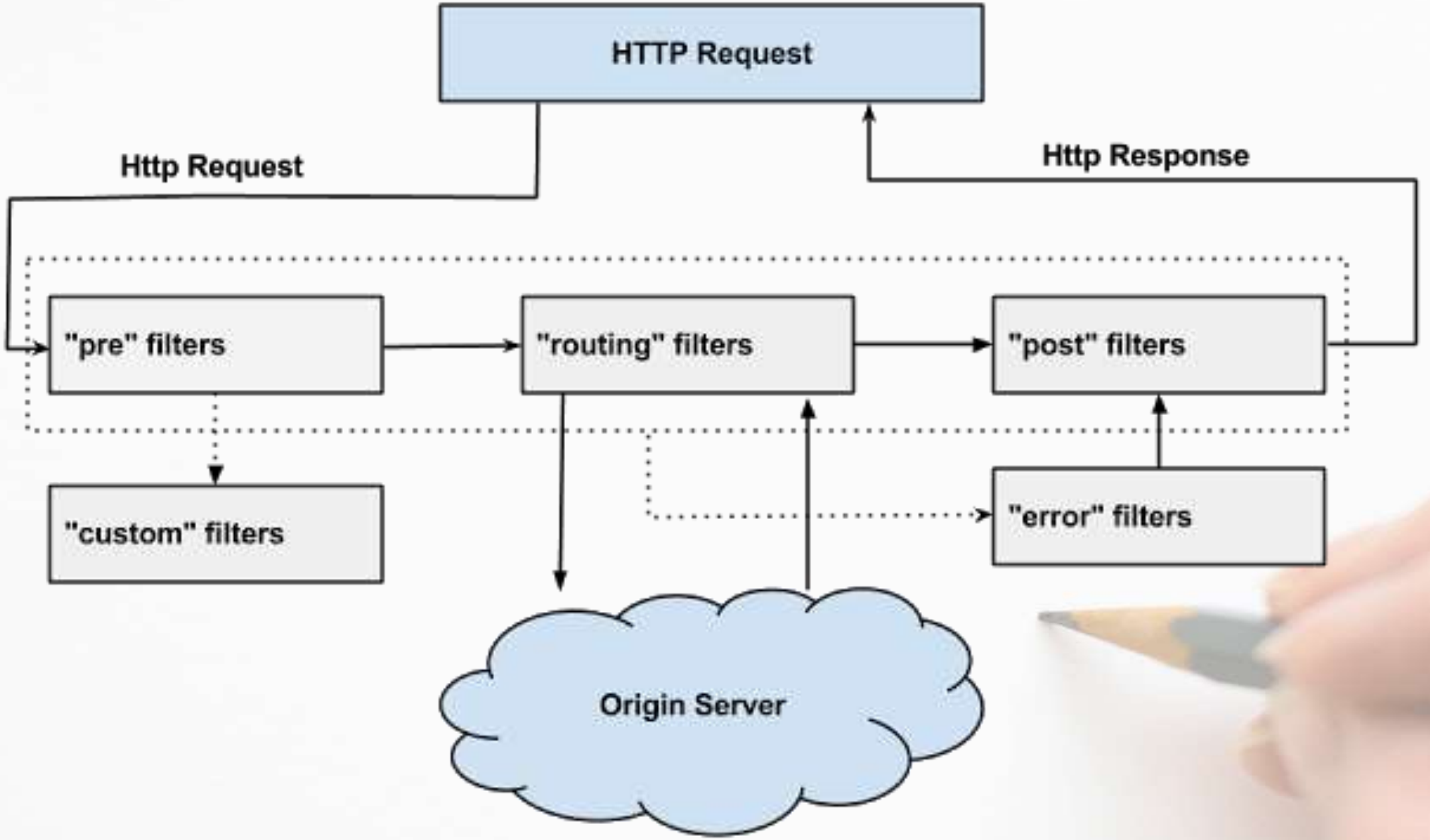
Metadata per Instance

Healthchecks

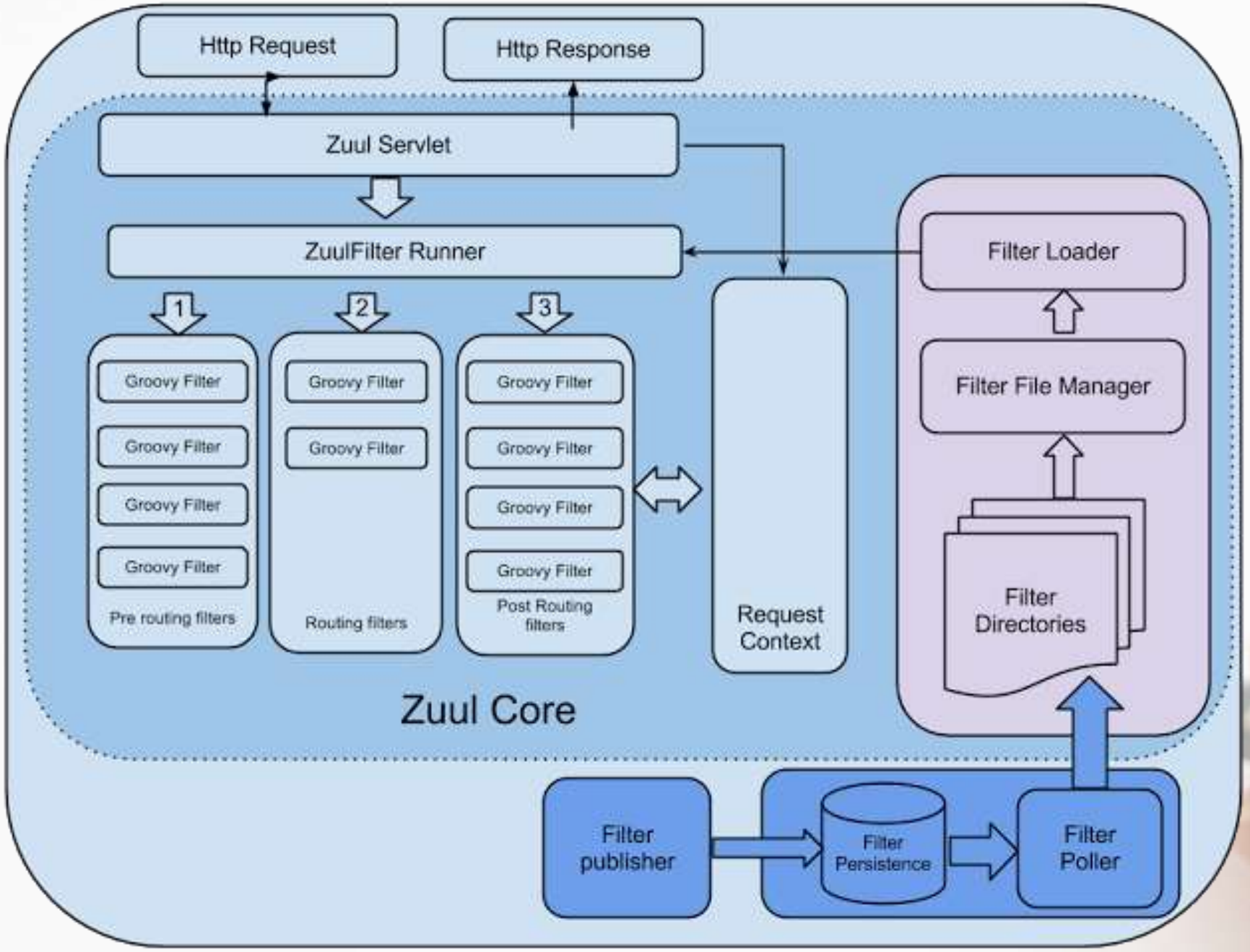

Demo

Zuul

Gateway Service



Source: http://techblog.netflix.com/2013/06/announcing-zuul-edge-service-in-cloud.html



Source: http://techblog.netflix.com/2013/06/announcing-zuul-edge-service-in-cloud.html

Zuul and Friends

Hystrix for Metrics

Eureka for Instance Discovery

Ribbon for Routing

Archaius for real-time configuration

Astyanax for filter persistence in Cassandra


Demo

Boot-strap the Netflix OSS


KETTAL
Double A

Spring Cloud Netflix

Spring Cloud Netflix provides Netflix OSS integrations for Spring Boot apps through autoconfiguration and binding to the Spring Environment and other Spring programming model idioms. With a few simple annotations you can quickly enable and configure the common patterns inside your application and build large distributed systems with battle-tested Netflix components. The patterns provided include Service Discovery (Eureka), Circuit Breaker (Hystrix), Intelligent Routing (Zuul) and Client Side Load Balancing (Ribbon)..

QUICK START

Source: https://cloud.spring.io/spring-cloud-netflix/


PROGRESS
PROGRESS
OIL AND GAS
OIL AND GAS
AUTOMOBILES
AUTOMOBILES
PARTNERSHIP
PARTNERSHIP

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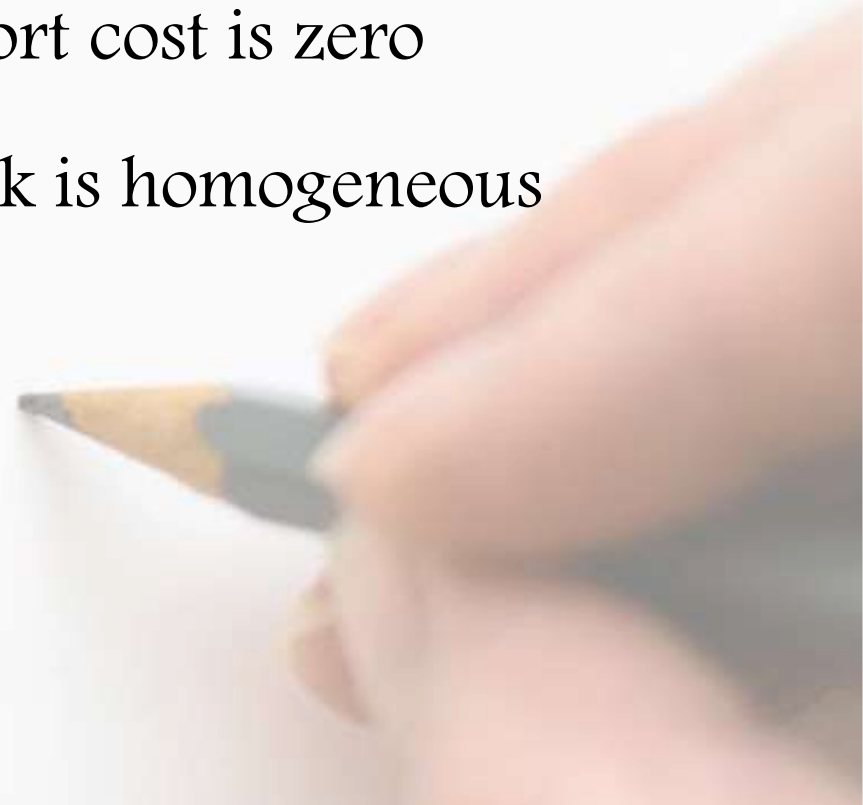


OPEN

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https://tomcools.be/talks/ujugmeetup-fallacies-netflix-oss