

A dark, atmospheric photograph of the Golden Gate Bridge in San Francisco, viewed from a low angle looking down the length of the bridge towards the foggy horizon. The bridge's iconic towers and suspension cables are visible, creating a strong sense of perspective.

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# Cloud Native Architectures

## Spring Cloud Netflix & SteelToe

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# Microservice: benefits



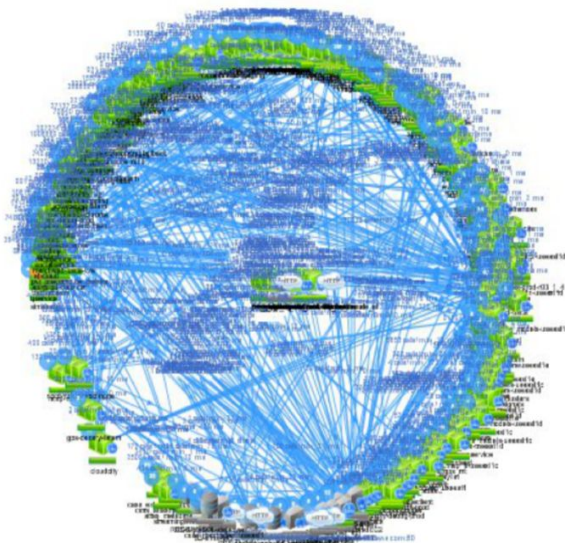
- Change cycles are decoupled: Enabling frequent deploys
- Allow for efficient and independent scaling
- Developers learn a smaller codebase faster
- Better coordination and scaling of development: Fewer developers in each code base
- Eliminate long-term commitment to technical stack

BUT ...

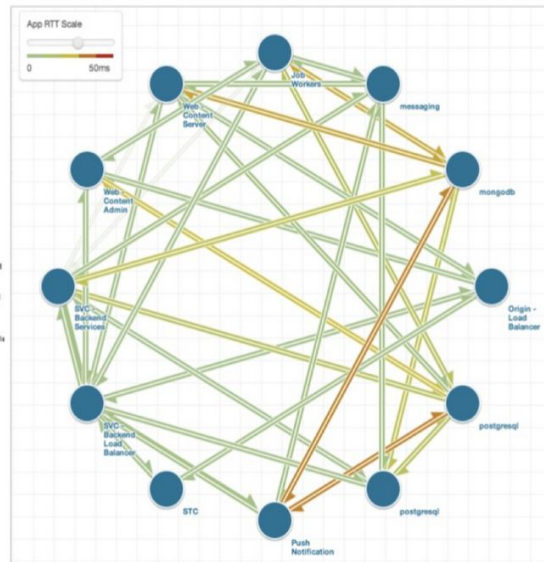
# Challenges in a Distributed System

- Configuration management
- Registration and discovery
- Routing and load balancing
- Fault tolerance and isolation
- Aggregation and transformation
- Monitoring and distributed tracing
- Process management

# Microservice pioneers



*Netflix*



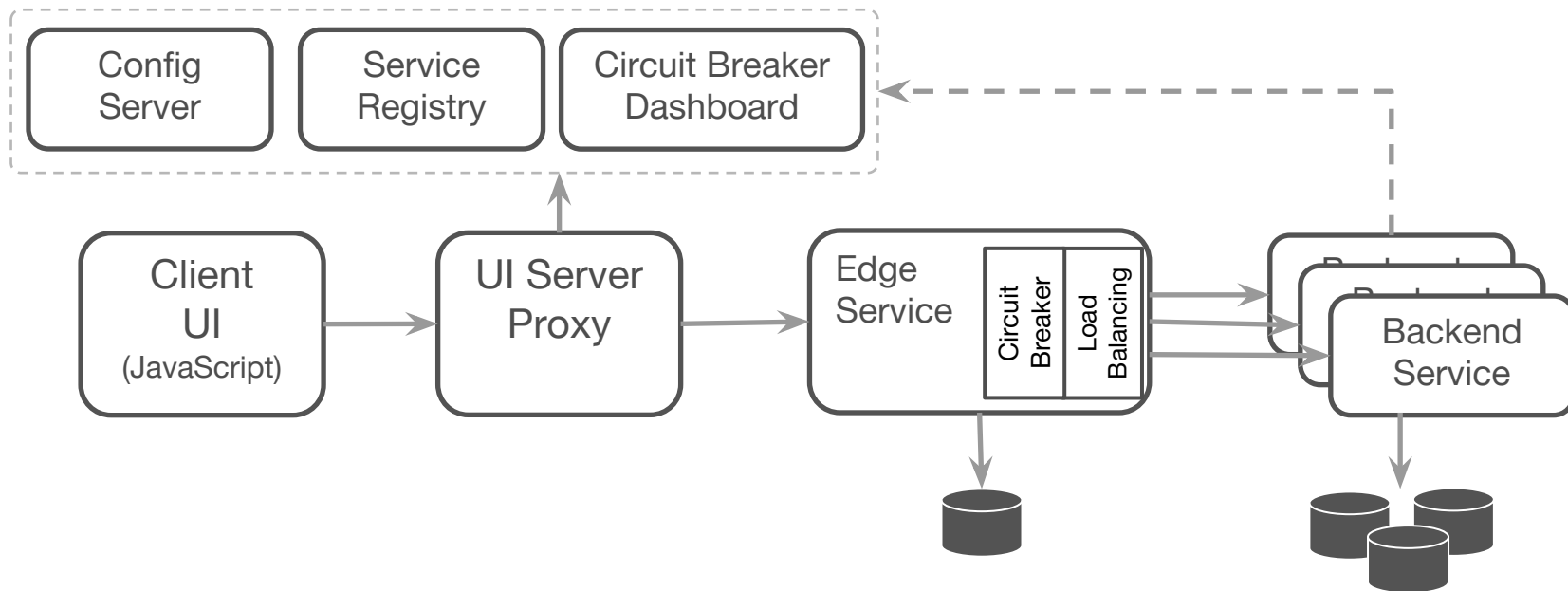
*Gilt Groupe (12 of 450)*



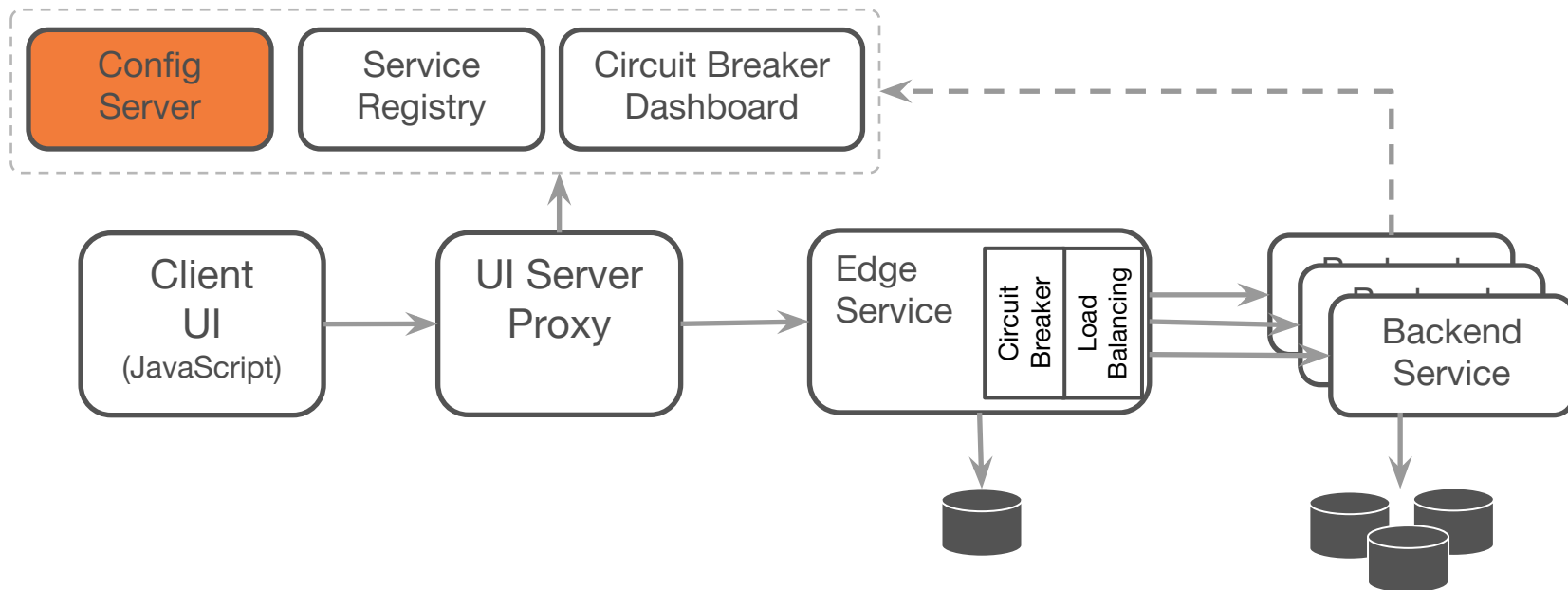
*Twitter*



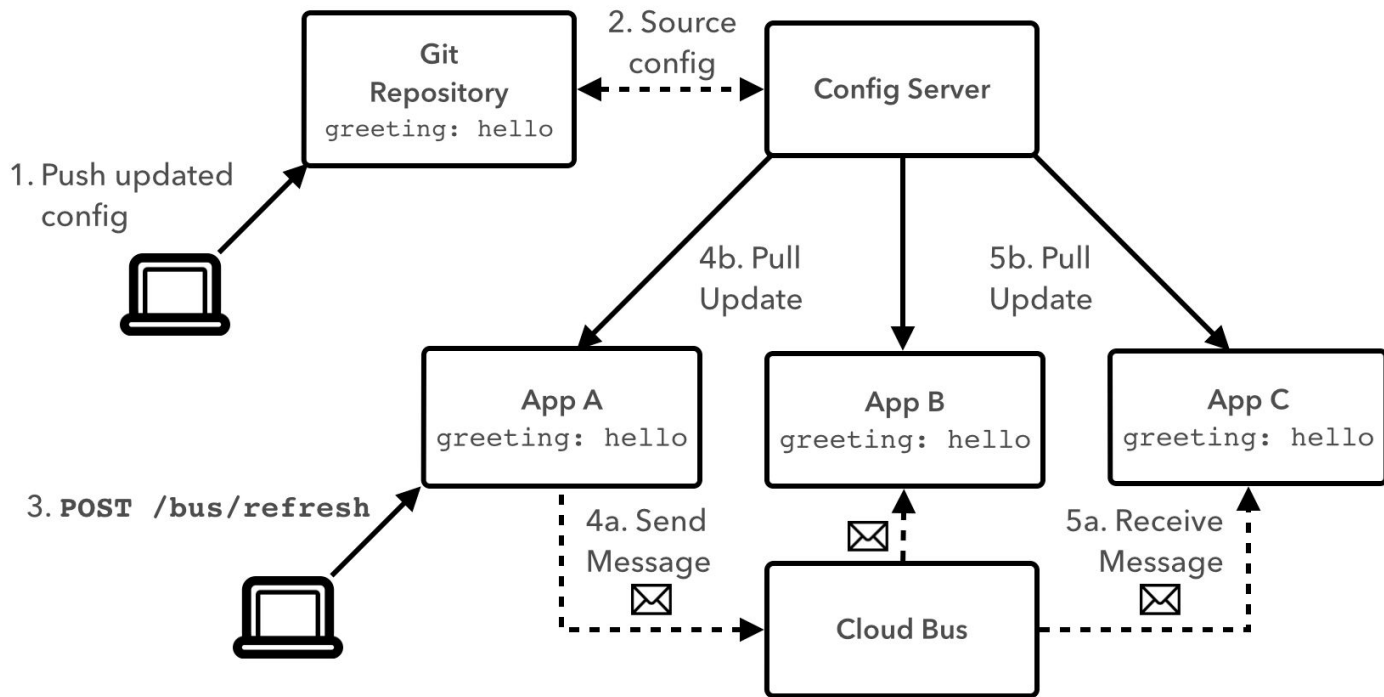
# Design Patterns & Automation to the Rescue!



# Configuration Management

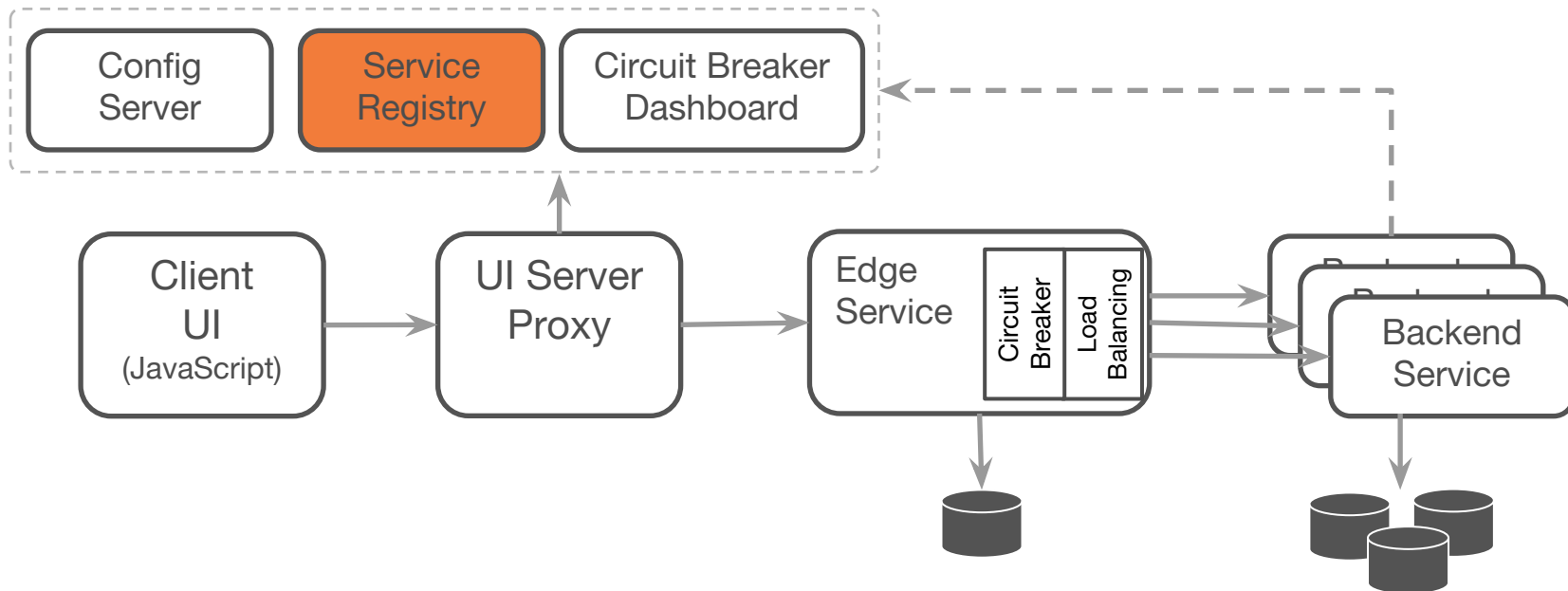


# Configuration Server

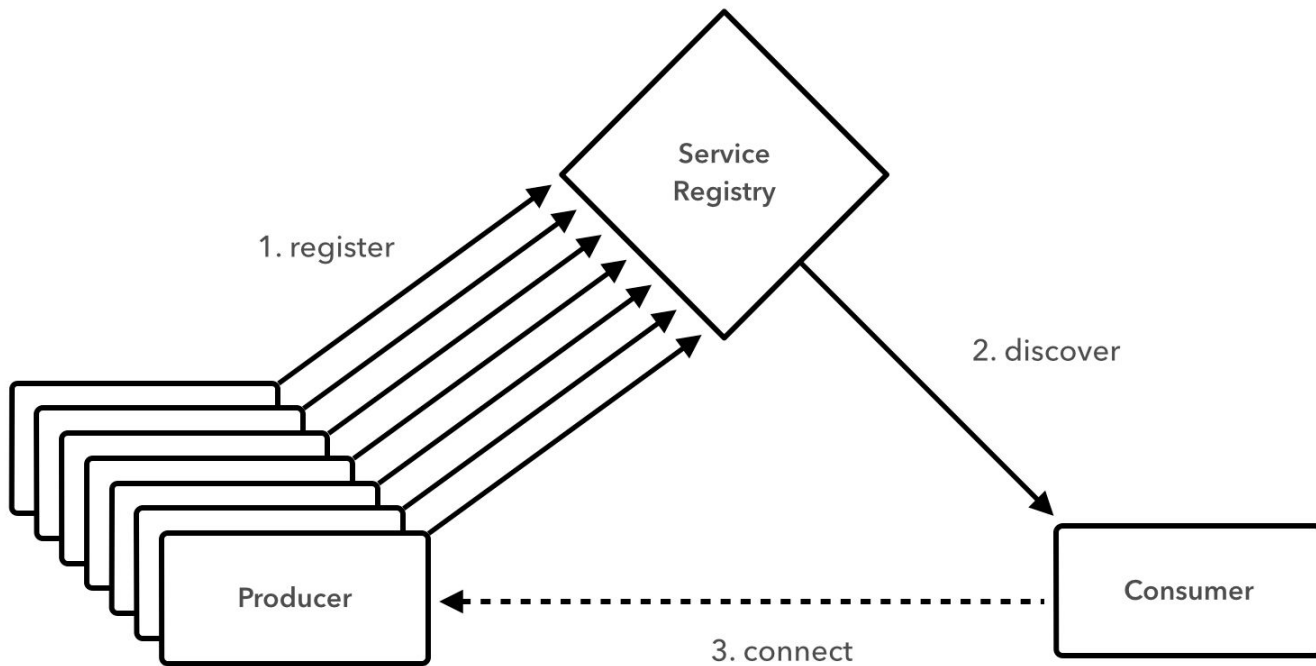




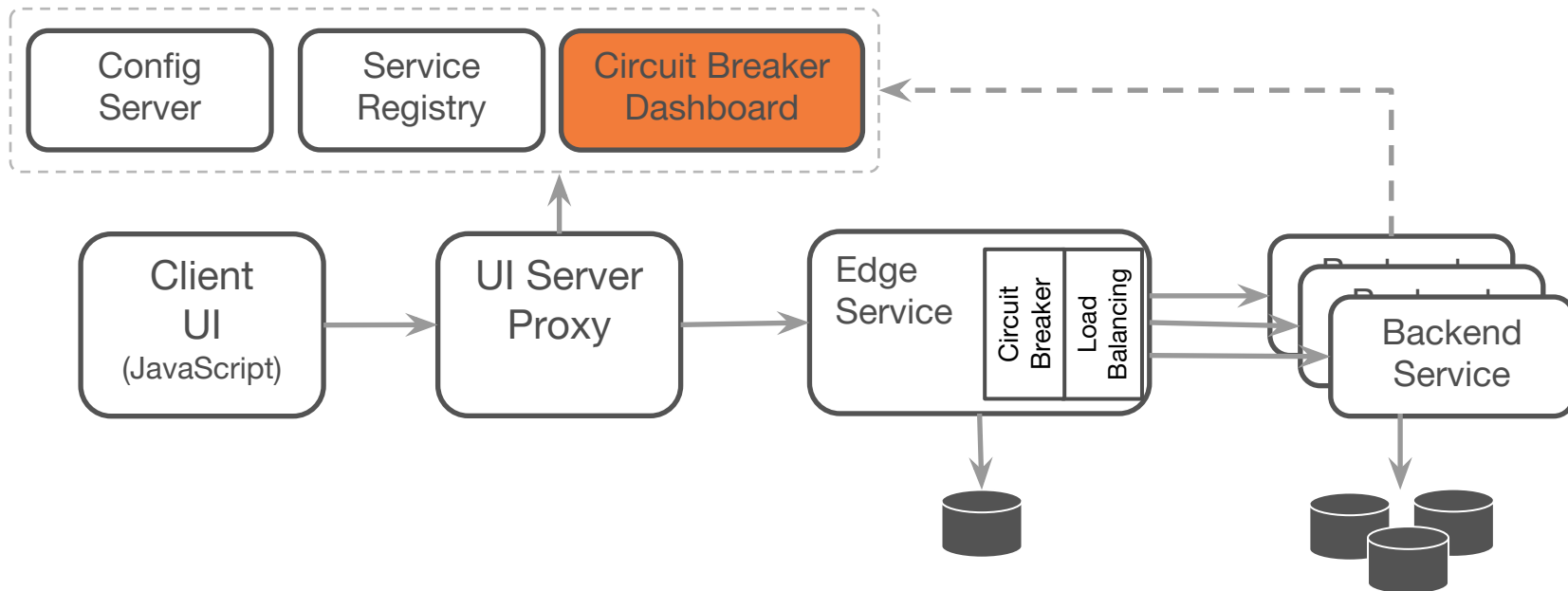
# Registration and Discovery



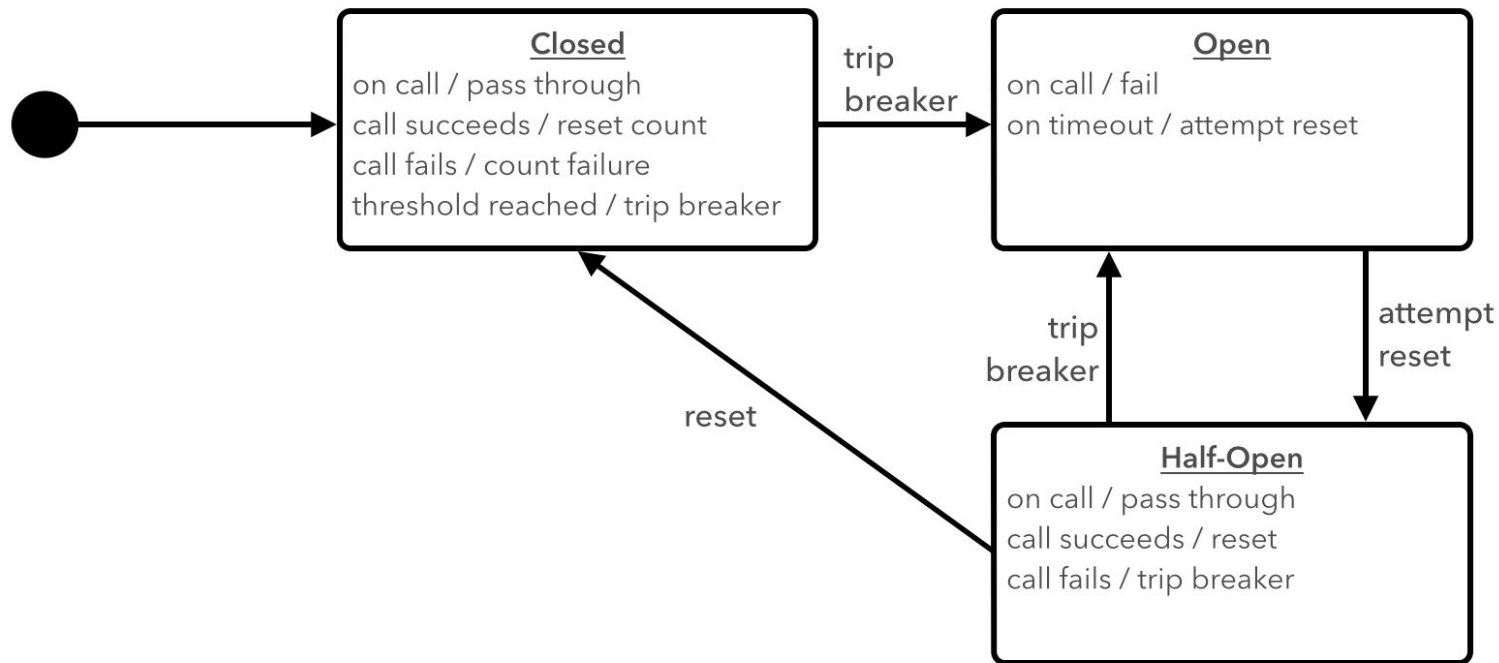
# Registration and Discovery Server



# Fault Tolerance and Isolation

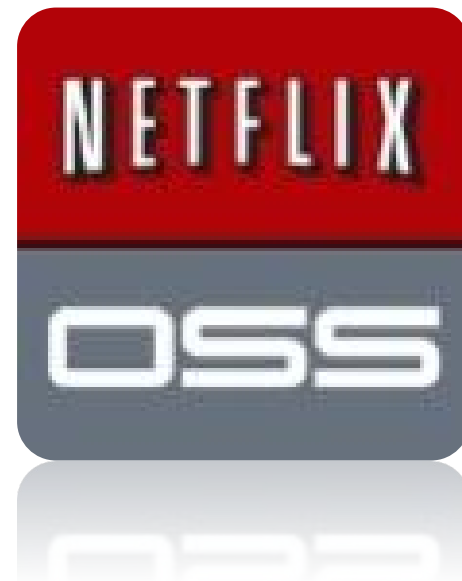


# Circuit Breaker

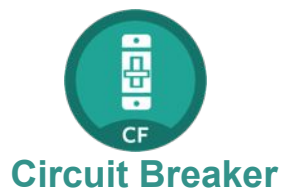
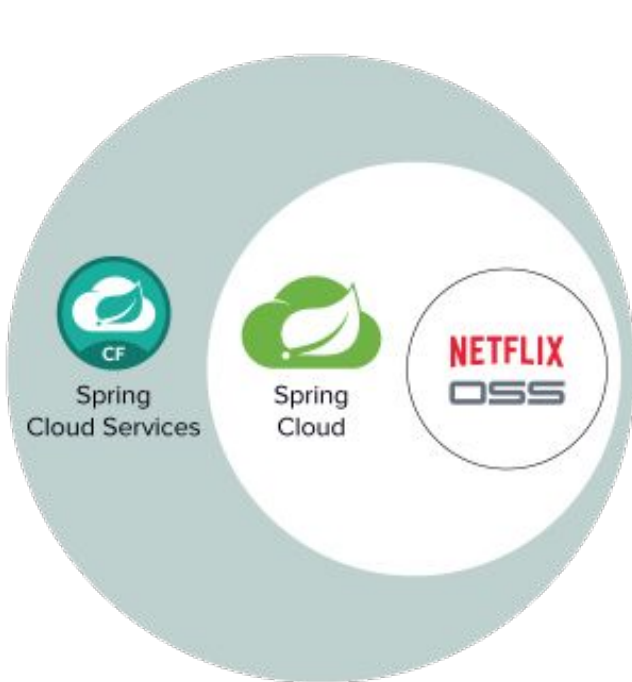


# Netflix Cloud Libraries

- Netflix needed to be faster to win / disrupt
- Pioneer and vocal proponent of microservices – the key to their speed and success
- Config Server, Eureka, Hystrix, Ribbon, Zuul ...
- Netflix OSS supplies parts, but it's not a solution



# Spring Cloud - Spring Cloud Services



- Operationalizes Spring Cloud in your deployment environment
- Provisions highly available infrastructure (messaging, databases) to support Spring Cloud deployments
- Adds key security features, including OAuth support, required for enterprise deployment of Spring Cloud

# Spring Cloud Netflix for .NET: Project STEELTOE



<http://steeltoe.io/>



Enterprise-ready .NET toolkit for common microservices patterns

## Breaking the Monolith

- Project Steeltoe contains best of breed components around configuration, service discovery, and soon, distributed tracing from NetflixOSS and Spring Cloud Services.
- These can be used to evolve an infrastructure from a monolithic application to a set of microservices.

## Write Once, Scale Anywhere

- Project Steeltoe is built to work especially well with platforms like Pivotal Cloud Foundry. It also integrates seamlessly with Java microservices written with Spring Cloud, allowing for true polygot architecture.

# What would be better? The future!


## Steeltoe

- Spring Cloud clients for ASP.NET and ASP.NET Core
  - Spring Cloud Config Server
  - Service Discovery with Eureka
  - Spring Cloud Connectors
  - Works with OSS or Spring Cloud Services
  - Open Source!
- Spring Cloud Connectors
  - SQL Server + EF6 (Windows / Greenhouse)
  - MySQL
  - Redis
  - RabbitMQ
  - PostgreSQL



Steeltoe RC1 available 7-October!





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## Thank You!

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