

Spring Cloud *

Discovery and Configuration Systems Comparison

by: Spencer Gibb

<https://github.com/spencergibb/spring-cloud-star>
<http://spencer.gibb.us> @spencerbgibb

Salt Lake City, Utah



Pivotal®

CLOUD FOUNDRY

spring
by Pivotal™

RabbitMQ™
Messaging that just works

redis



APACHE
GEODE

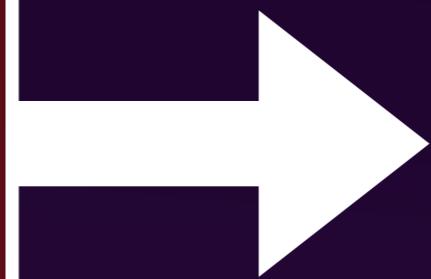
GREENPLUM
DATABASE

Spring Cloud Roadmap

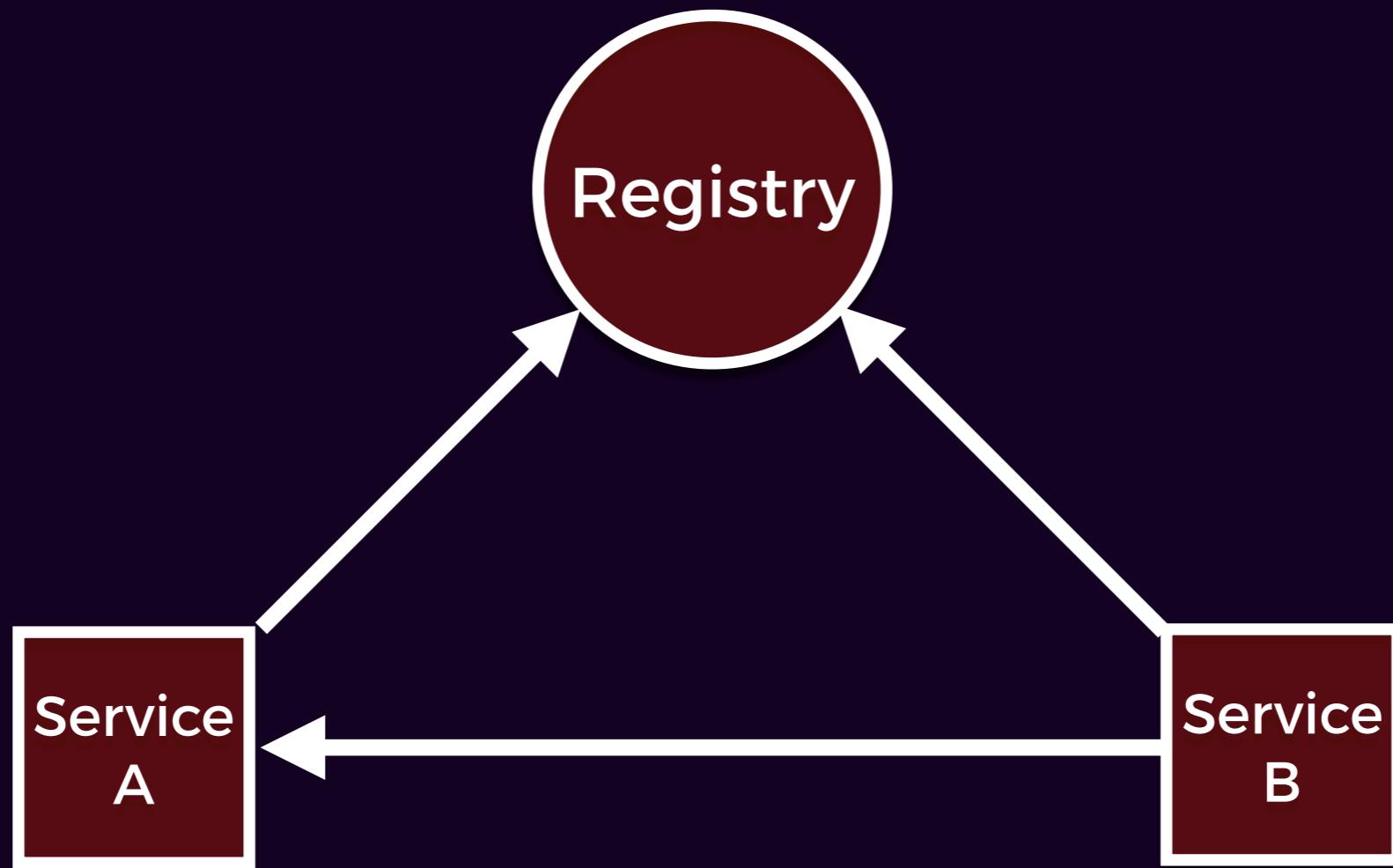
- Brixton RC2 Released: 22 April 2016
- Brixton GA Release: end of April (Maybe RC3)
- ‘Camden’ will follow Spring Boot 1.4: Q3 2016
- ‘Dalston’ will follow Spring 5 & Spring Boot 2.0: Q2 2017 (Java 8)
- Many Services Releases (SR) in between

Microservices

You must be
this tall to ride



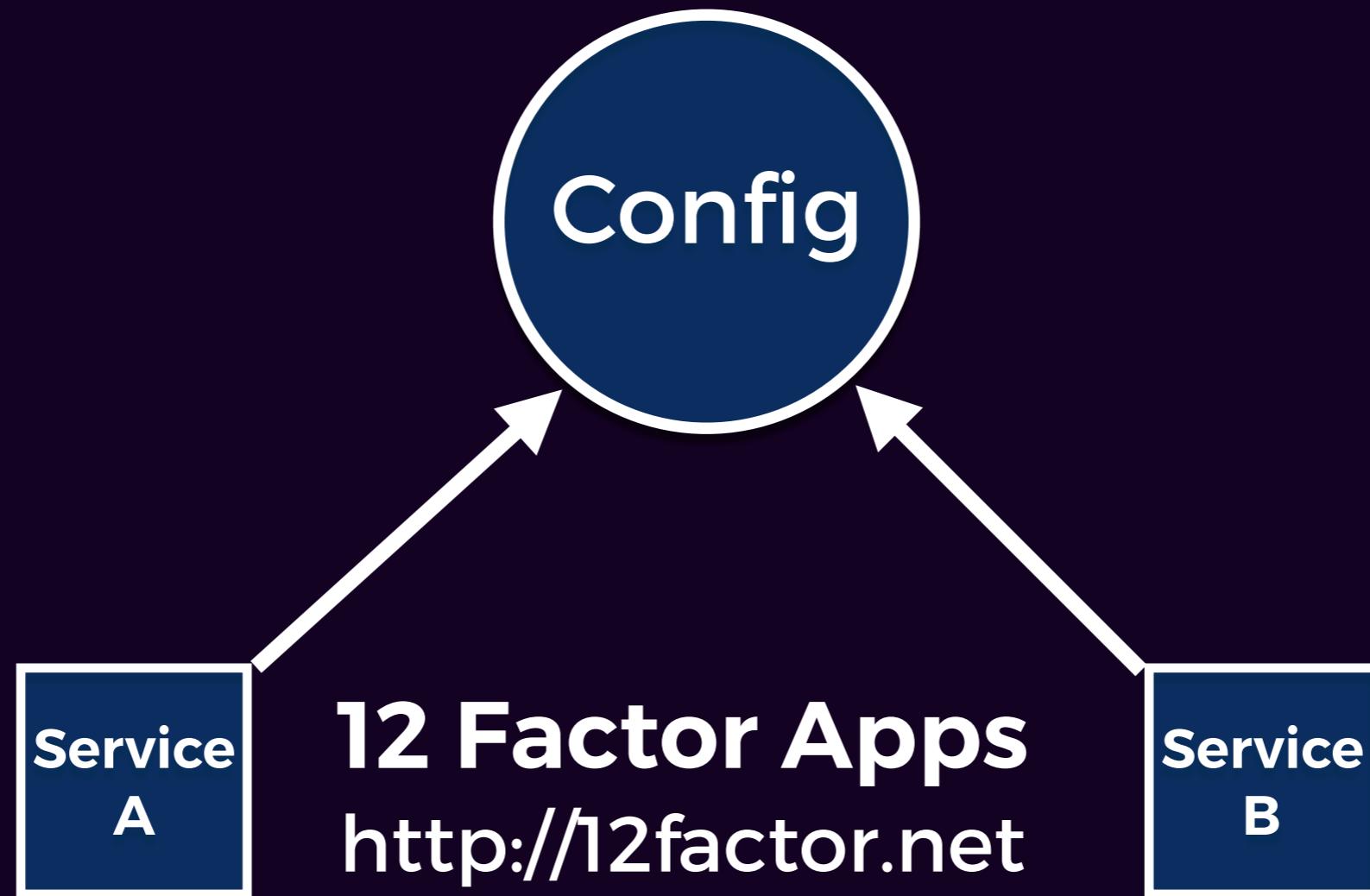
Service Registration & Discovery



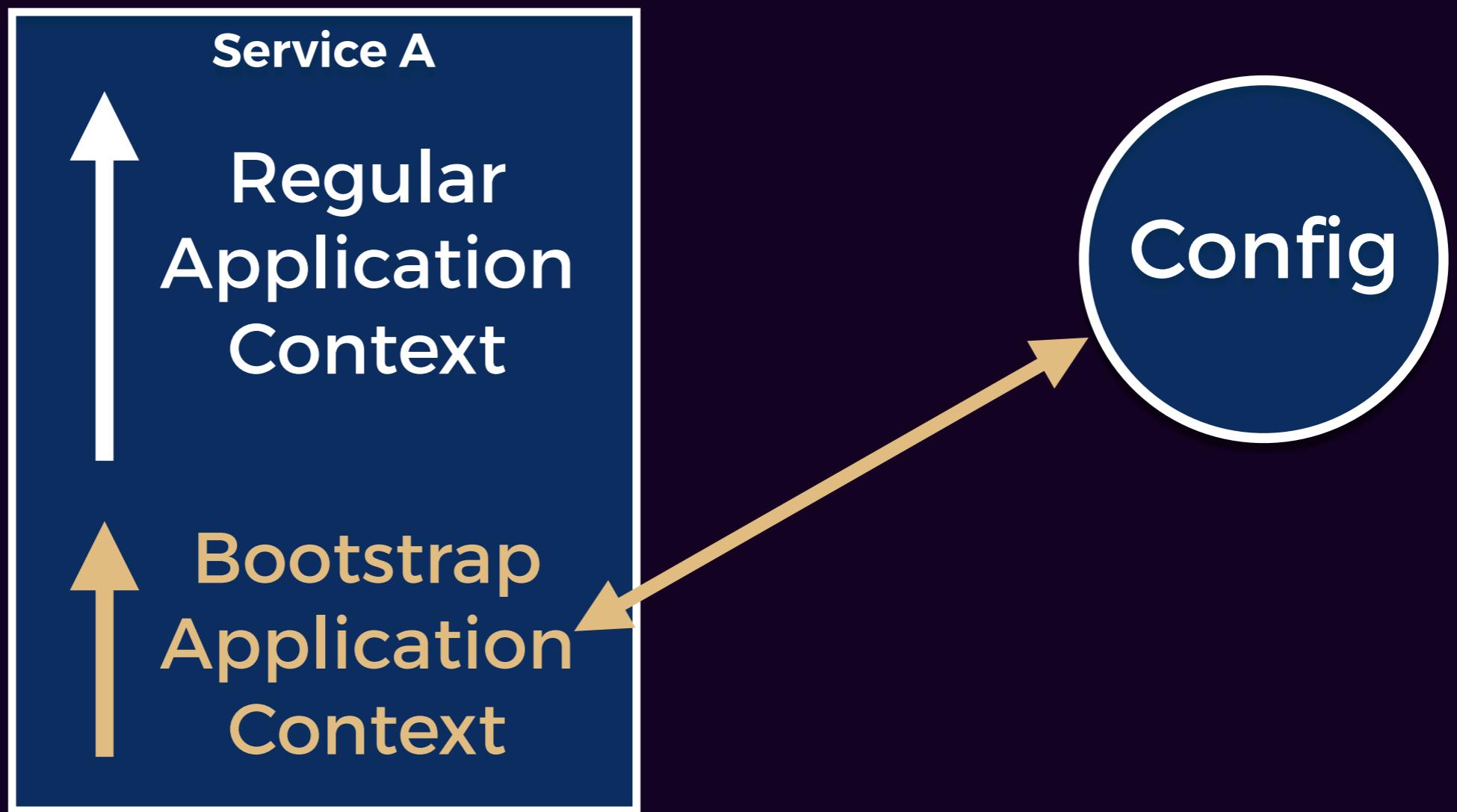
DiscoveryClient

- `@EnableDiscoveryClient`
- `ServiceInstance si = discoveryClient.choose("serviceId")`
- `RestTemplate`
- `@FeignClient`

Distributed Configuration



Context Lifecycle



Environment

- `@ConfigurationProperties`
- `@Value`
- `Environment`

Spring Cloud Config Server

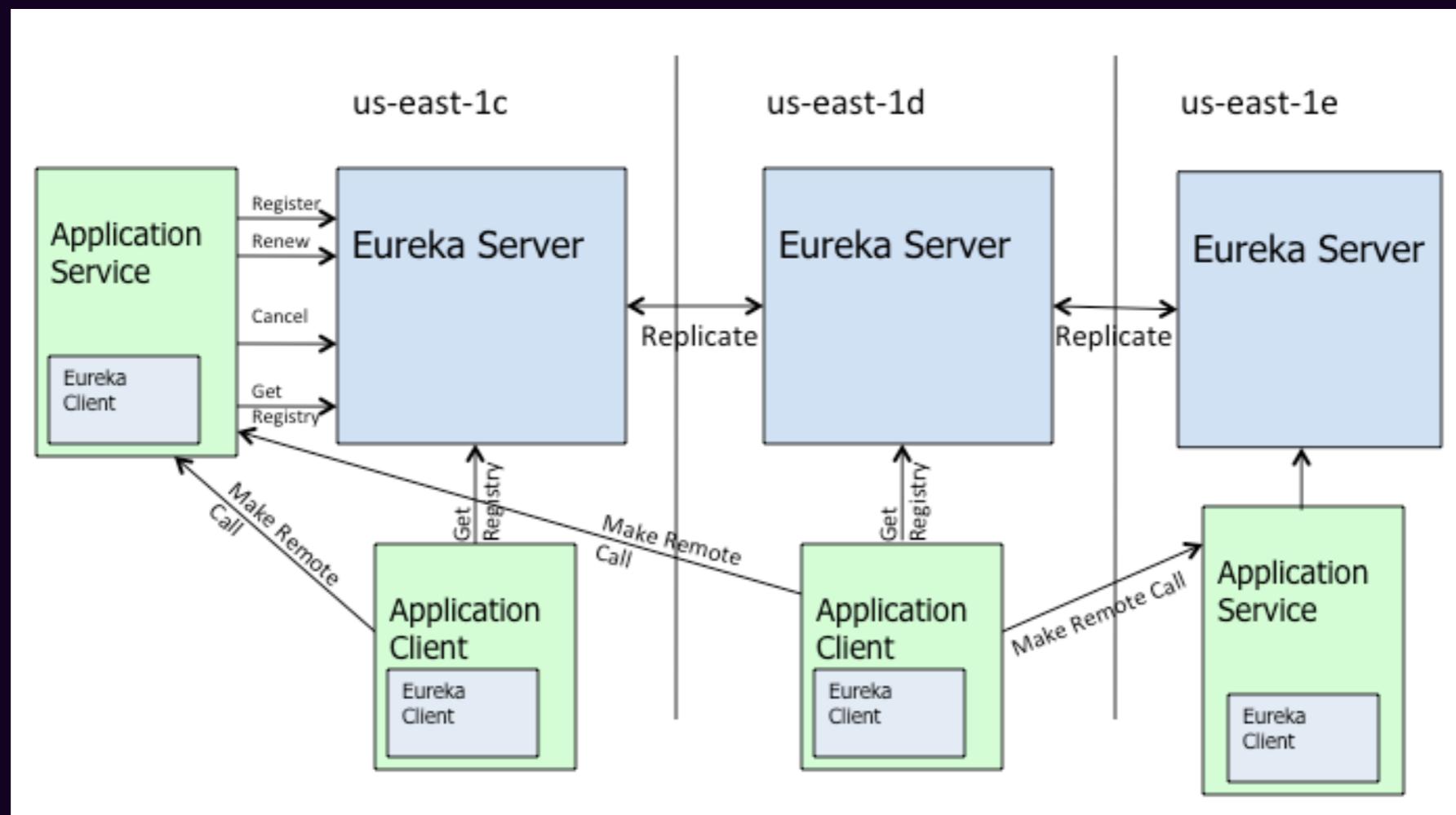
- Greenfield
- HTTP API similar to Netflix Config Server
- Backed by VCS: git, SVN
- Stateless
- @RefreshScope
- Plain text files (eg. messages_fr.properties)

Spring Cloud Config Server

- Uses spring-boot configuration files & semantics
- Auto-configured client
- Refresh via bus (events)
- Webhook support for github, gitlab and bitbucket
- Commercial Support in Pivotal Cloud Foundry

DEMO

Eureka NETFLIX



Eureka pro's

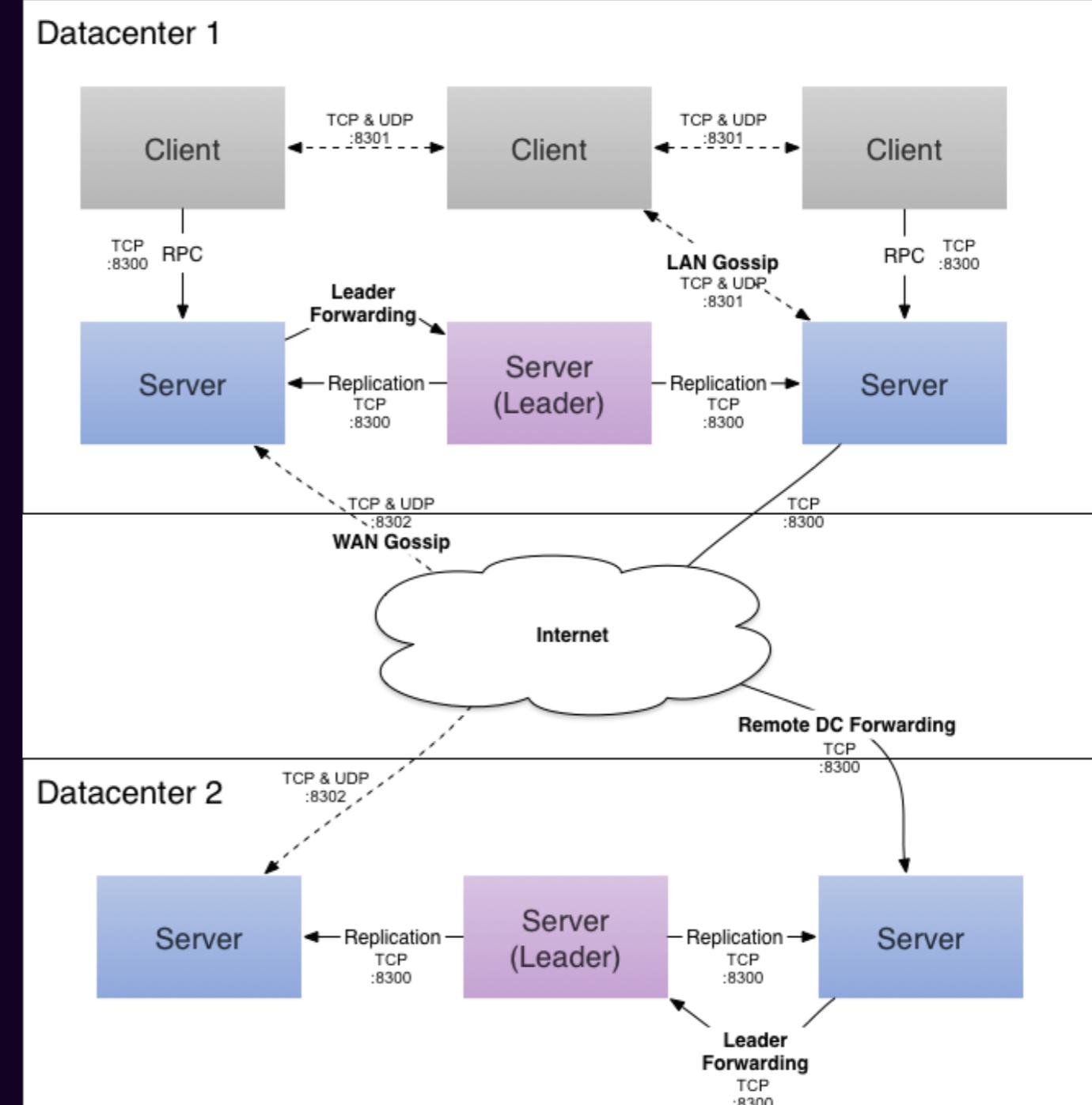
- Highly-available
- Mature / Proven by Netflix 
- Tight Ribbon Integration
- Commercial Support in Pivotal Cloud Foundry

Eureka Con's

- JVM Based
- Thick Java client
- Polyglot by Sidecar
- Built for AWS Initially
- Long thresholds for registration and cache refresh (30s)



Consul



Consul pro's

- Service Discovery & Configuration
- Polyglot
- HTTP API and DNS interface
- ACL's
- Health Checks



Consul pro's

- Multi-Datacenter
- Vault Integration (Keys and Secrets)
- YAML and Properties Blobs supported
- peer-to-peer gossip system
- Nice UI



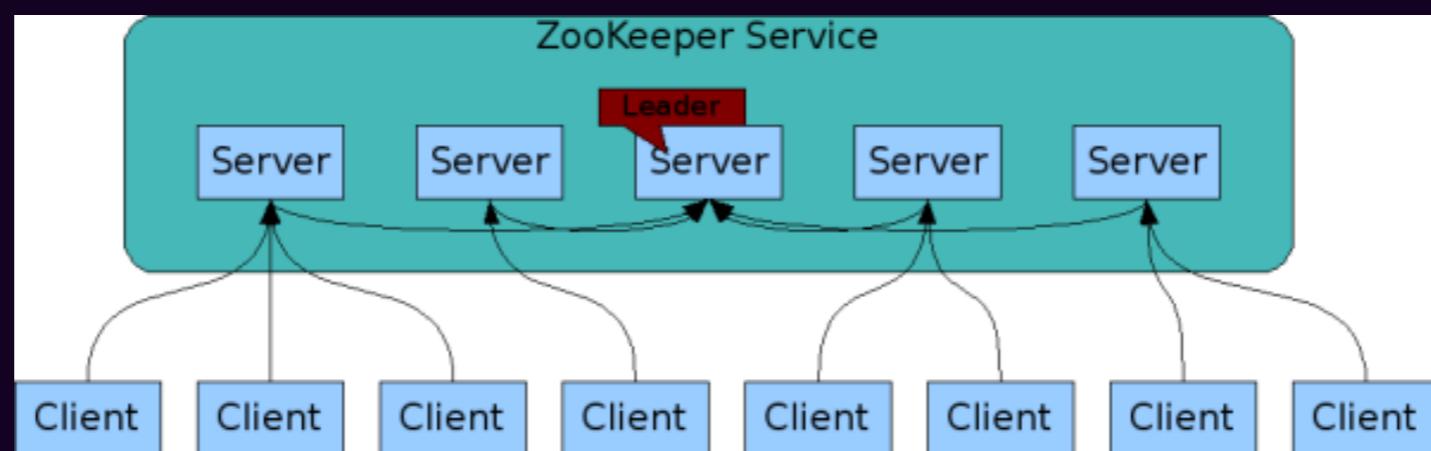
Consul Con's

- Young
- Agent on every host



DEMO

Zookeeper



Zookeeper pro's

- Consistent Store
- Started life as a Hadoop sub-project (2007?)
- Mature, used in many companies
- Useful if ZK is already part of your infrastructure
- Ephemeral Nodes / Persistent Connections
- Uses Apache Curator's Service Discovery Recipe



Zookeeper Con's

- Scale Issues
- OPS Headaches
- Needs management process like Netflix Exhibitor
- Persistent Connections



Honorable Mention

- HAProxy/Nginx/Apache HTTPD
- Spring Cloud CloudFoundry
- Spring Cloud ETCD (Experimental)
- AirbNB Smart Stack
<http://nerds.airbnb.com/smarterstack-service-discovery-cloud/>
- Uber Hyperbahn
<https://youtu.be/N2472uS5Y6M>
<https://github.com/uber/hyperbahn>

Questions?

Josh Long: The Bootiful Microservice
13:55 Maillot

<https://github.com/spencergibb/spring-cloud-star>

<http://spencer.gibb.us>
@spencerbgibb