spring IO

BCN
19&20 MAY
2016

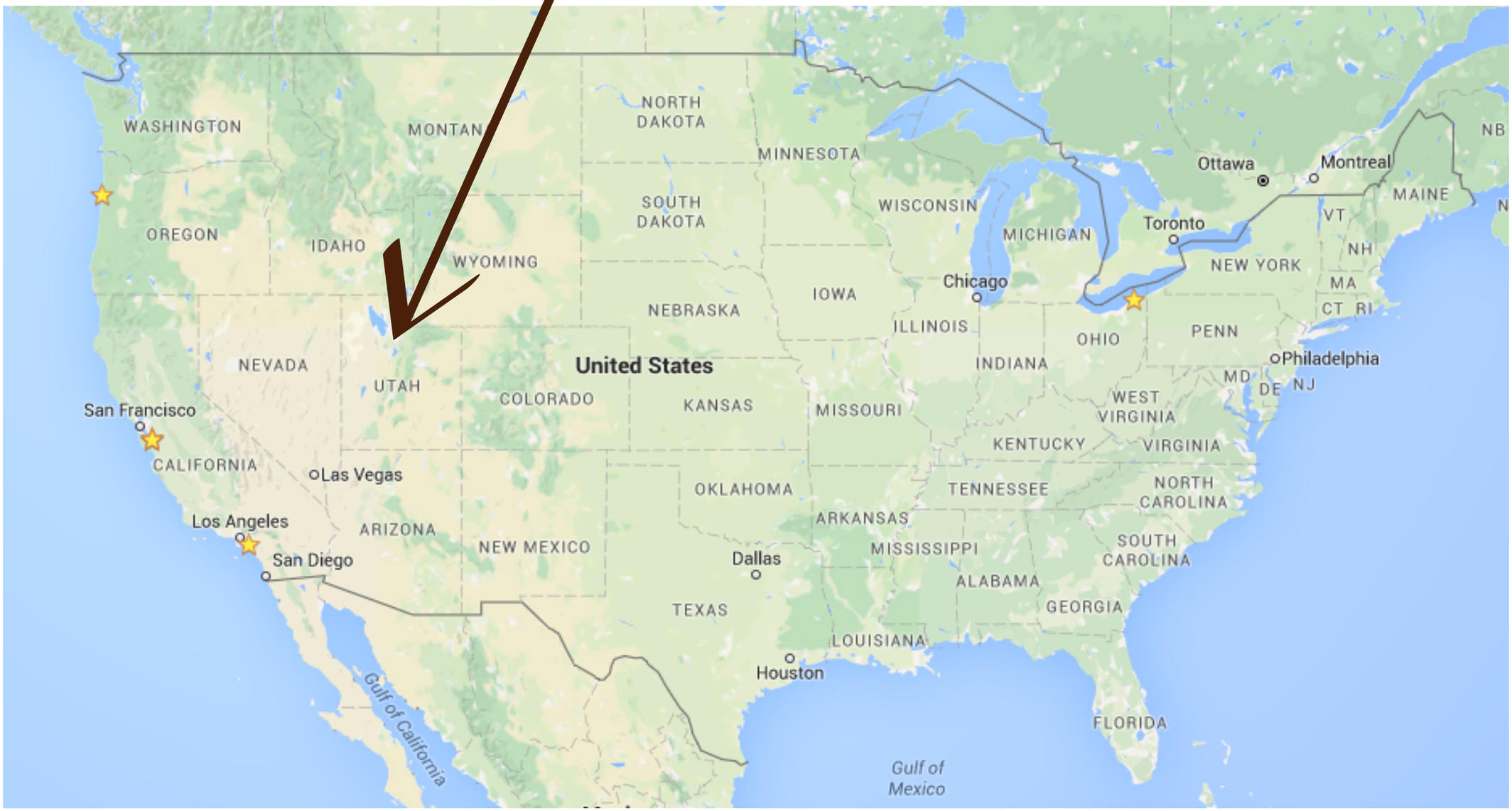
SPRING CLOUD *

Discovery and Configuration Systems Comparison

Spencer Gibb @spencerbgibb

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

Salt Lake City, Utah



Pivotal

CLOUD FOUNDRY

spring
by Pivotal

RabbitMQ
Messaging that just works

redis

APACHE
GEODE

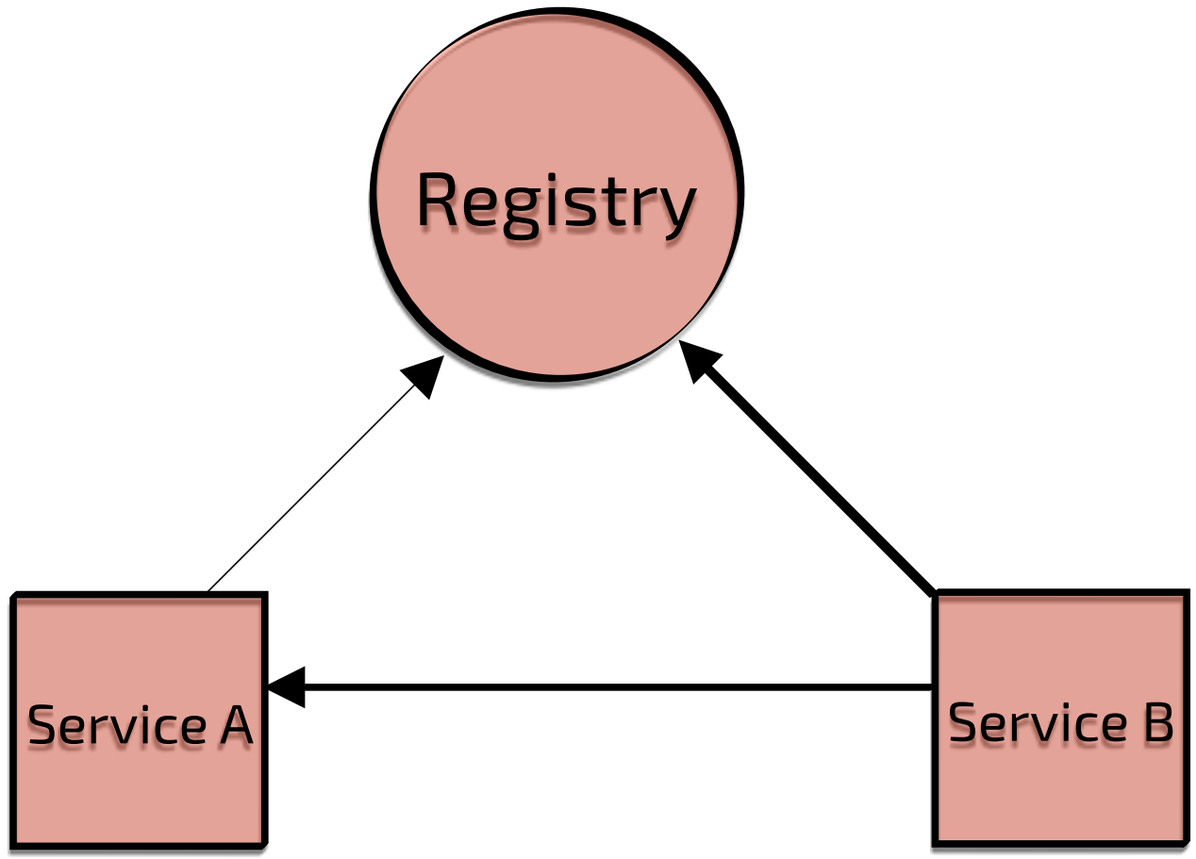
GREENPLUM
DATABASE

Spring Cloud Roadmap

- Brixton GA ReleaseD: 11 May 2016
- ‘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

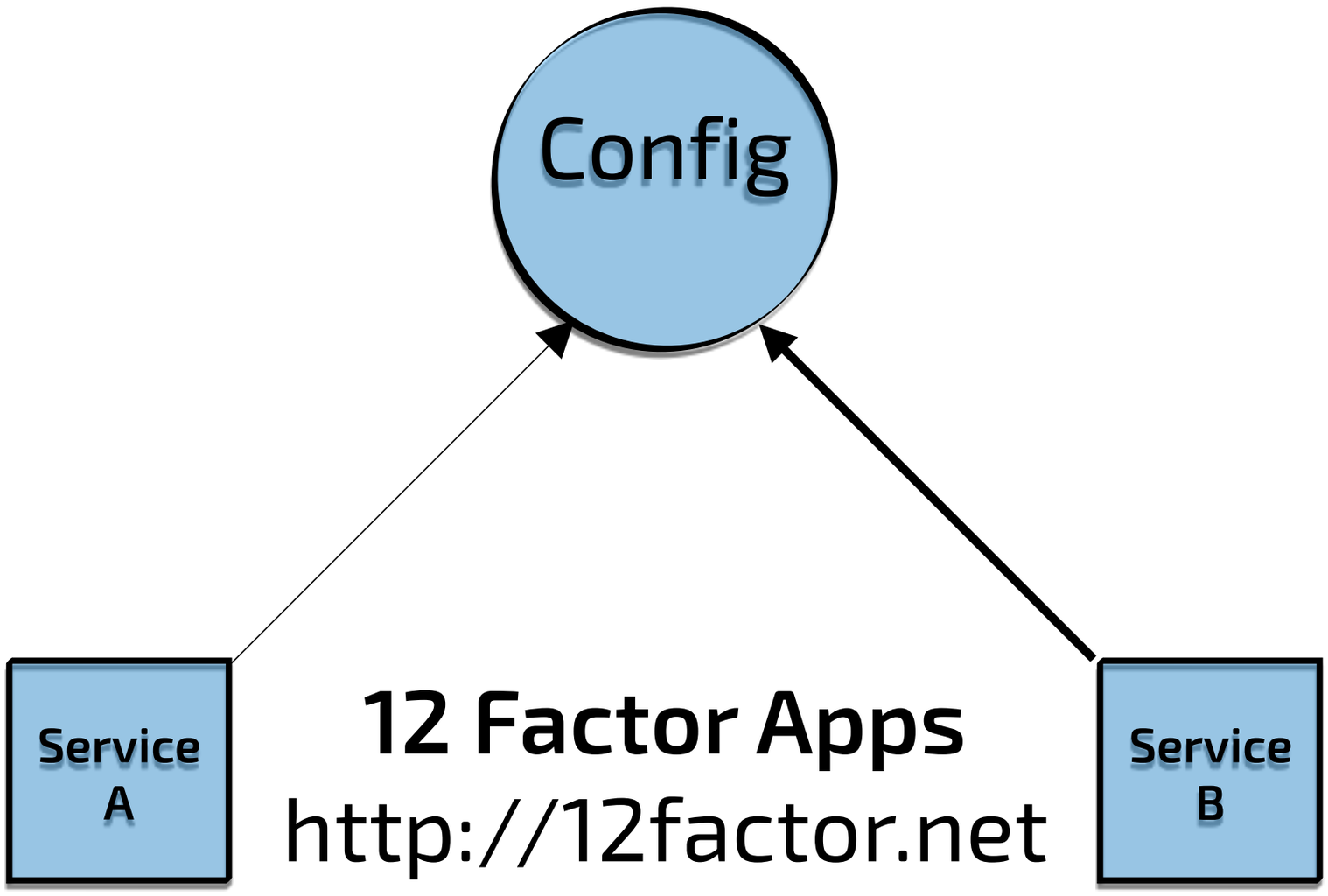
Service Registration & Discovery



DiscoveryClient

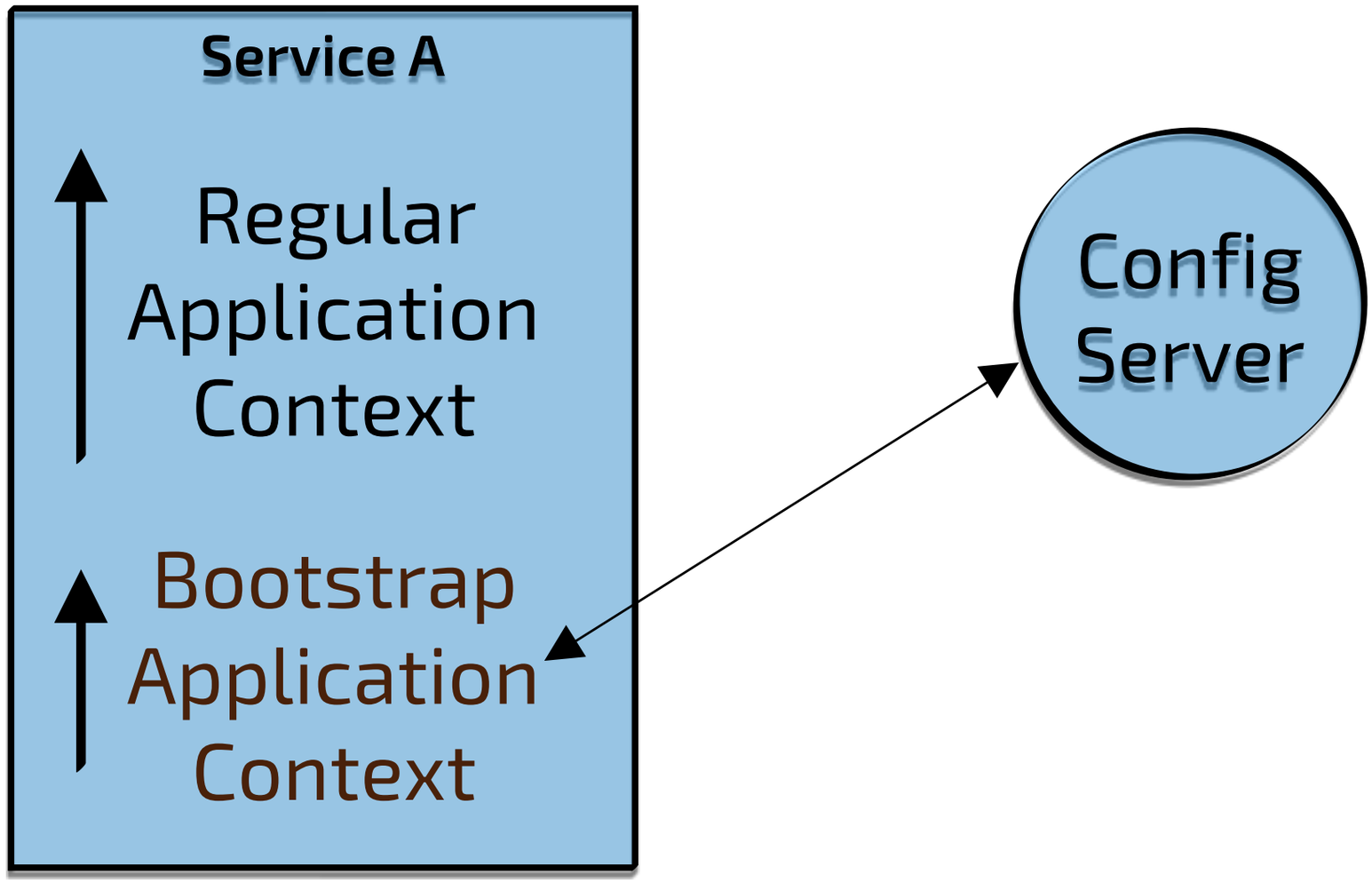
- `@EnableDiscoveryClient`
- `ServiceInstance si = discoveryClient.choose(“serviceId”)`
- `RestTemplate`
- `@FeignClient`

Distributed Configuration



12 Factor Apps
http://12factor.net

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)

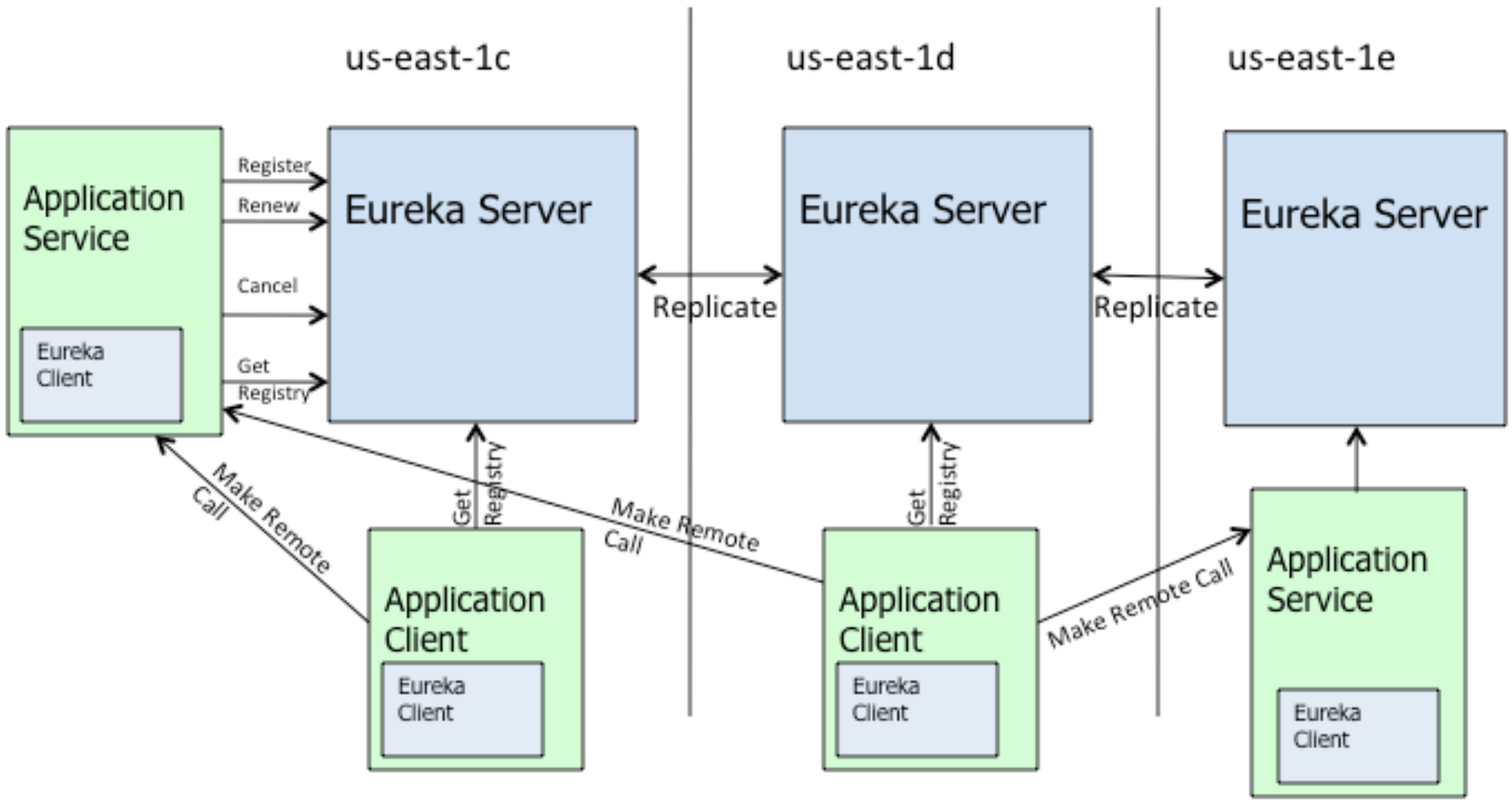
Spring Cloud Config Server

- 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 Cons

JVM Based

Thick Java client

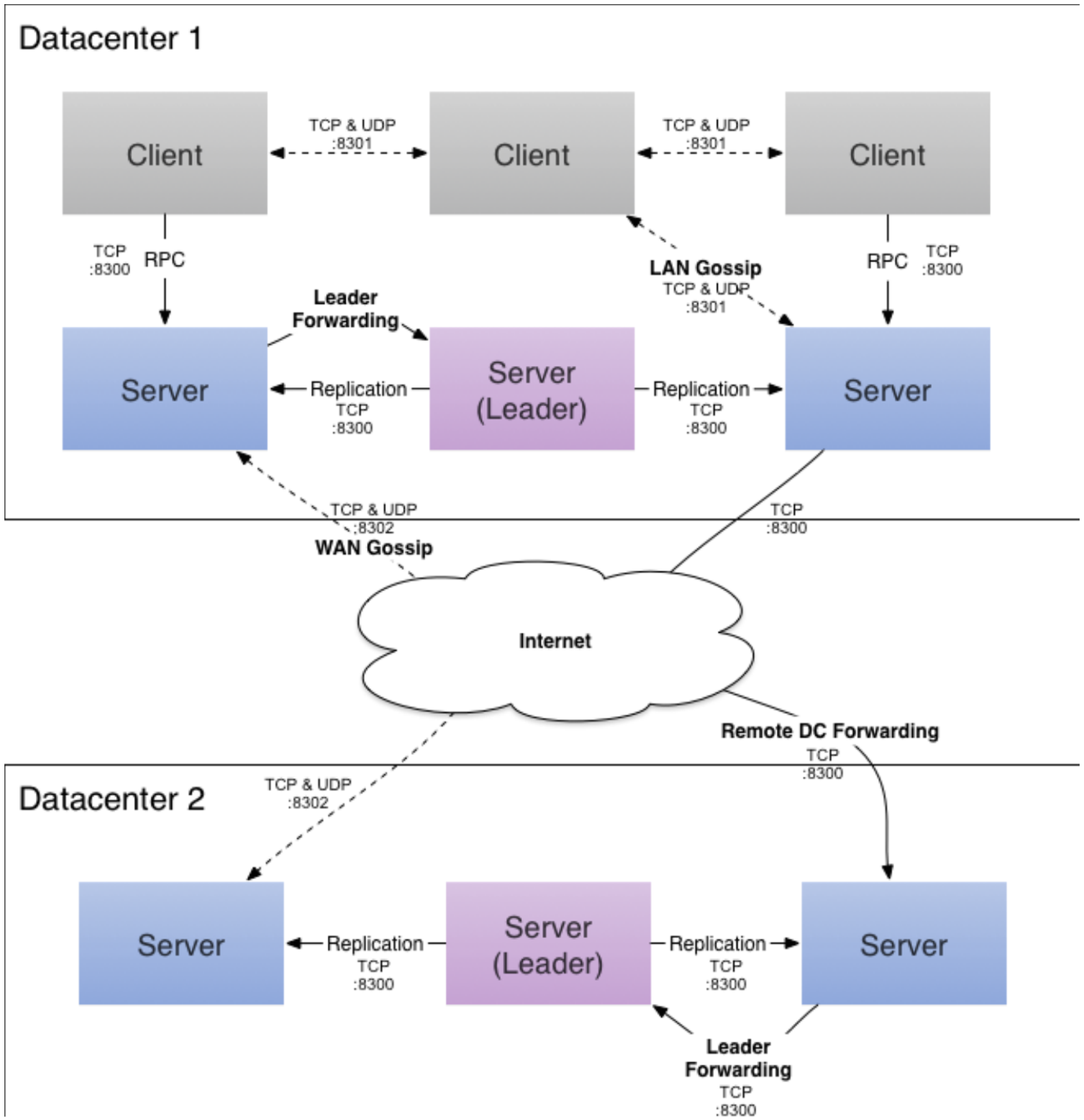
Polyglot by Sidecar

Built for AWS Initially

Long thresholds for registraion and cache refresh (30s)

Consul

HASHICORP™



Consul pros

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

Consul pros

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

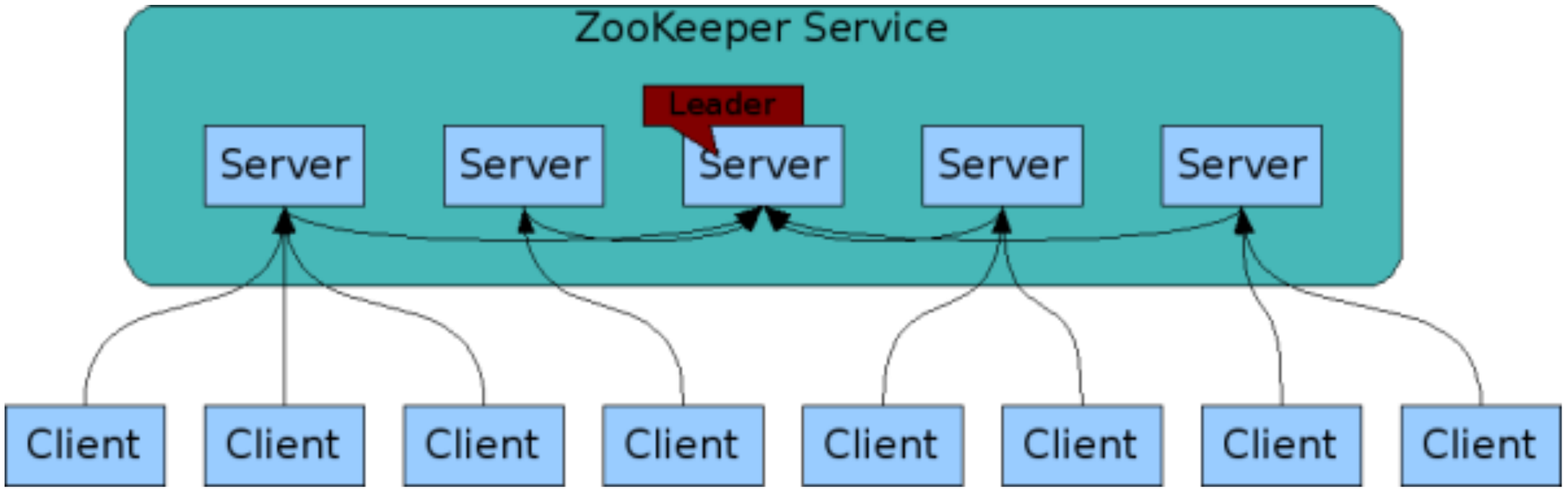
Consul cons

- Young
- Agent on every host

DEMO

Zookeeper

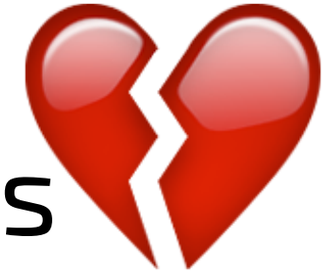
Apache
Zookeeper



Zookeeper pros

- 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 cons

- 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/smartstack-service-discovery-cloud/
- Uber HyperbahN
  https://youtu.be/N2472uS5Y6M
  https://github.com/uber/hyperbahn

Questions?

Me: Workshop: Cloud Native Apps
with Spring Cloud & Netflix OSS
16:30-18:20 Room 2

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

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