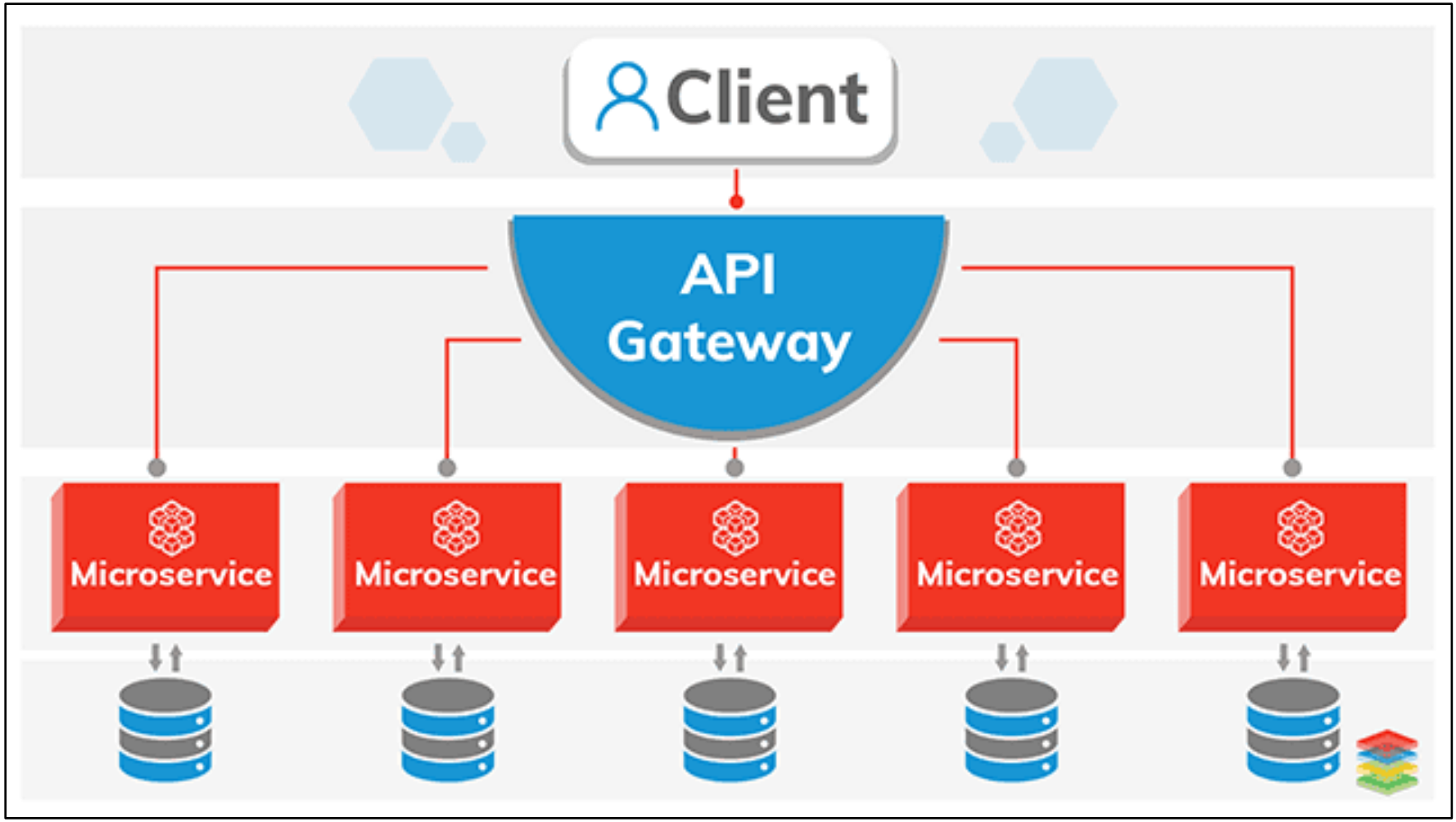
Introduction to Spring Cloud

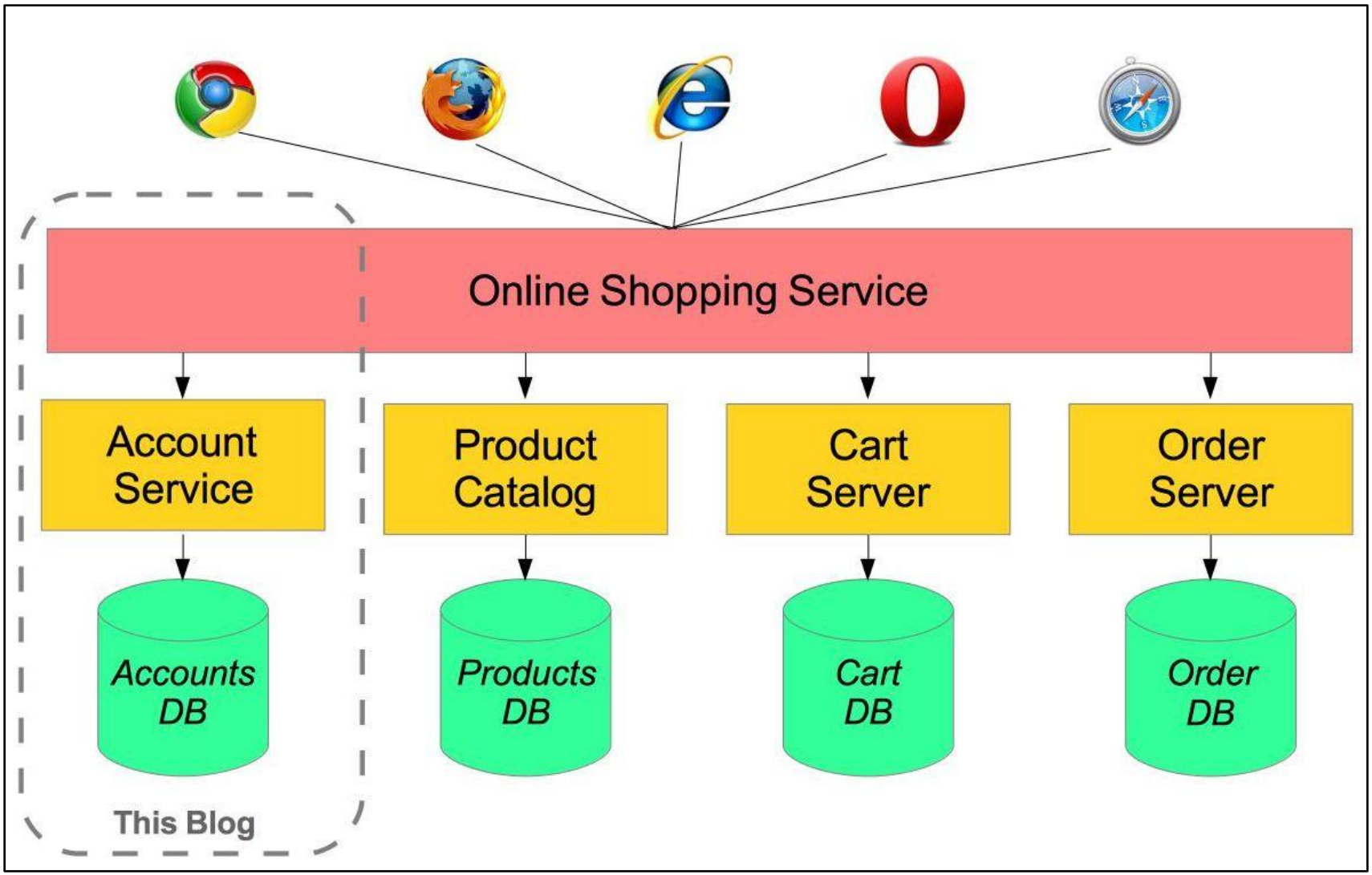
By

Anand Kulkarni

Microservices Architecture



Microservices in Shopping Cart App



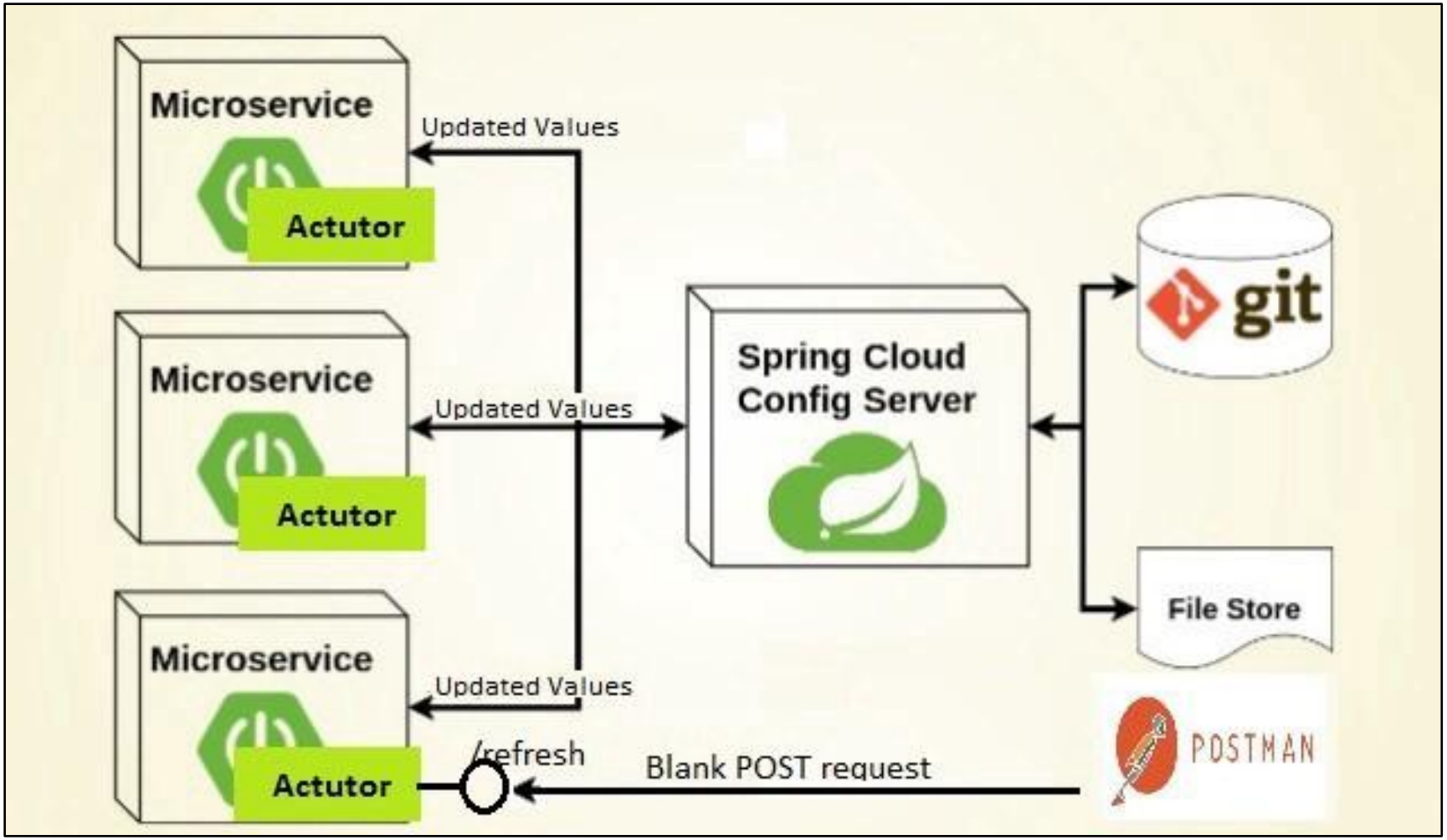
What is Spring Cloud?

- Coordination of distributed systems leads to boiler plate patterns, and using Spring Cloud, developers can quickly stand up services and applications that implement those patterns.
- Spring Cloud provides tools for developers to quickly build some of the common patterns in distributed systems (e.g. configuration management, service discovery, circuit breakers, intelligent routing, cluster state etc).

Spring Cloud Features

- Configuration management (Config Server)
- Service registration and discovery (Eureka Server)
- Routing

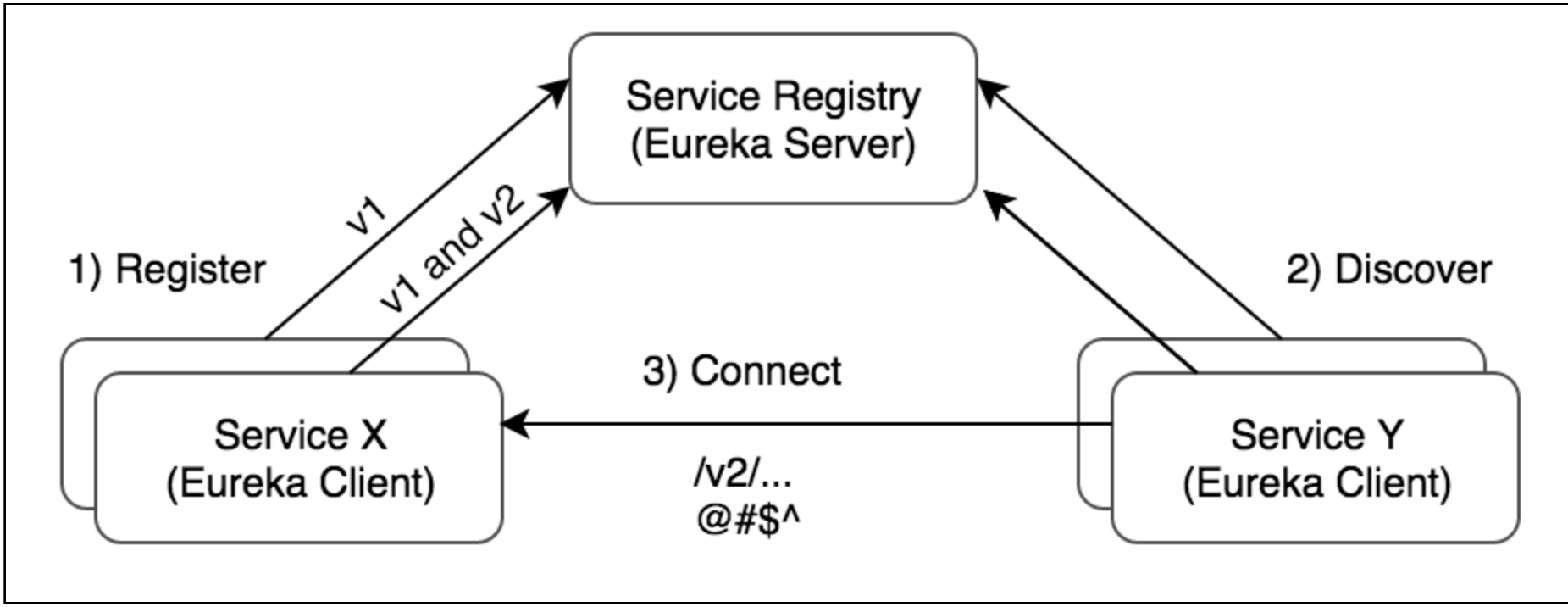
Configuration Management using Config Server



Configuration Management using Config Server

- Spring Cloud Config is Spring's client/server approach for storing and serving distributed configurations across multiple applications and environments.
- This configuration store is ideally versioned under Git version control and can be modified at application runtime.

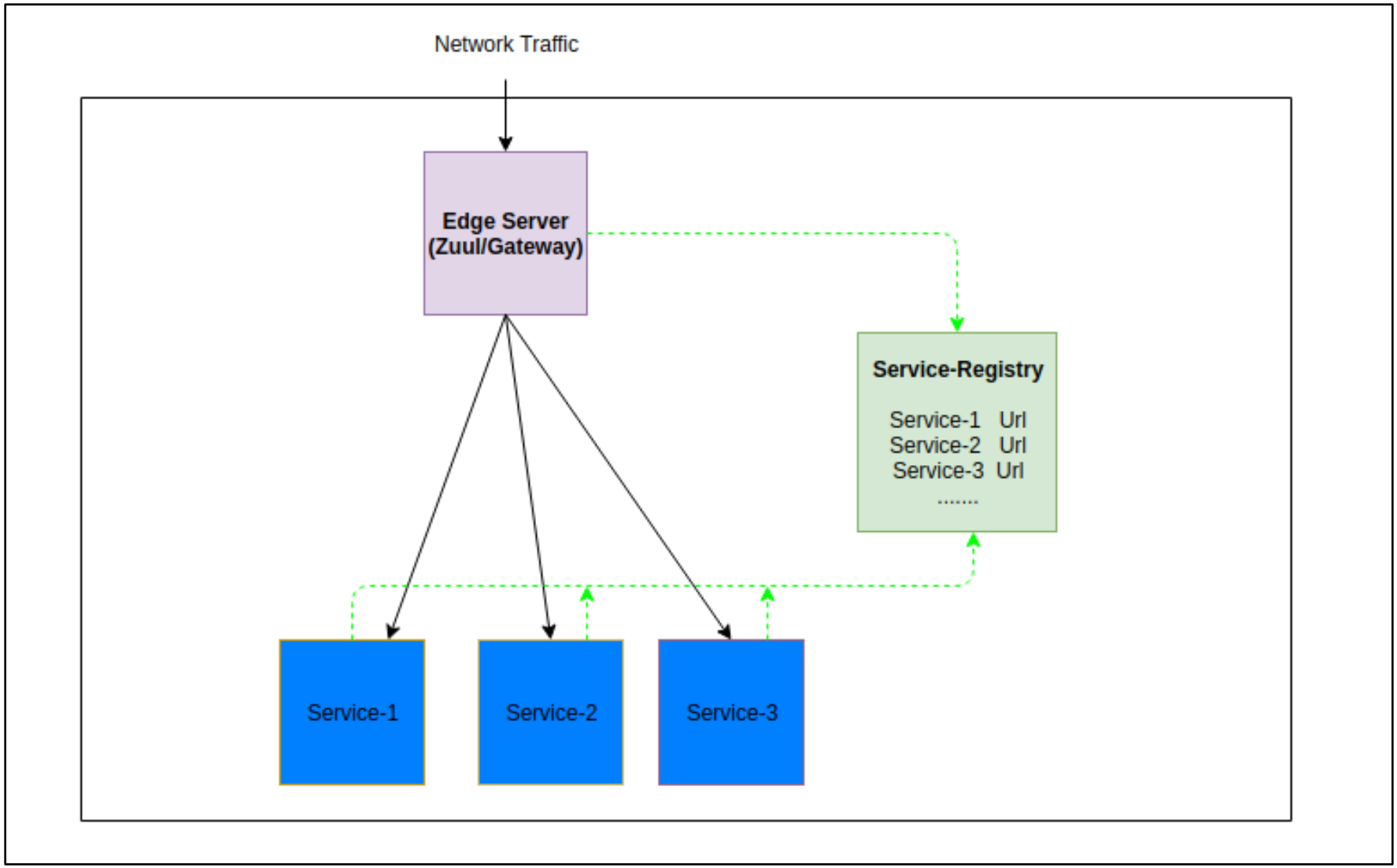
Service Registration & Discovery



Service Registration & Discovery

- Spring Cloud provides Service Registry and Discovery feature in the form of Eureka Server.
- In the microservices world, Service Registry and Discovery play an important role because we most likely run multiple instances of services and we need a mechanism to call other services without hardcoding their hostnames or port numbers.

Routing


Network Traffic
Edge Server
(Zuul/Gateway)
Service-Registry
Service-1 Url
Service-2 Url
Service-3 Url
.....
Service-1
Service-2
Service-3

Routing

- In microservice architecture we have many small applications running on different hosts and ports. The problem in this type of architecture is how clients can access these end microservices without knowing their hosts and ports? For this, we need routing feature of Spring Cloud.
- Spring Cloud implements routing through Zuul Server.