



Micro-Services Patterns Part1

Prakash Badhe
prakash.badhe@vishwasoft.in

Monolith De-composition

Decompose by Business Capability

Decompose by application domain

Decompose by database design/separation

--Database per service

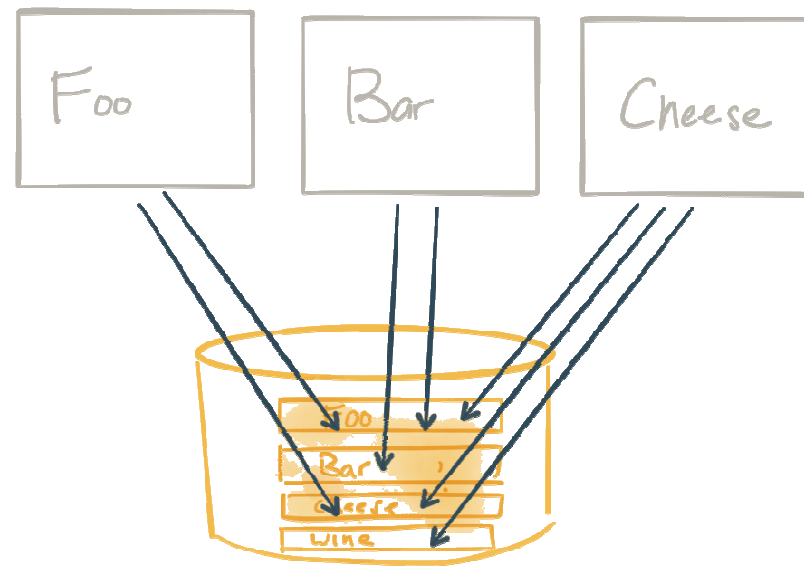
--Shared database per service

Decompose by user locations/categories

How to de-compose

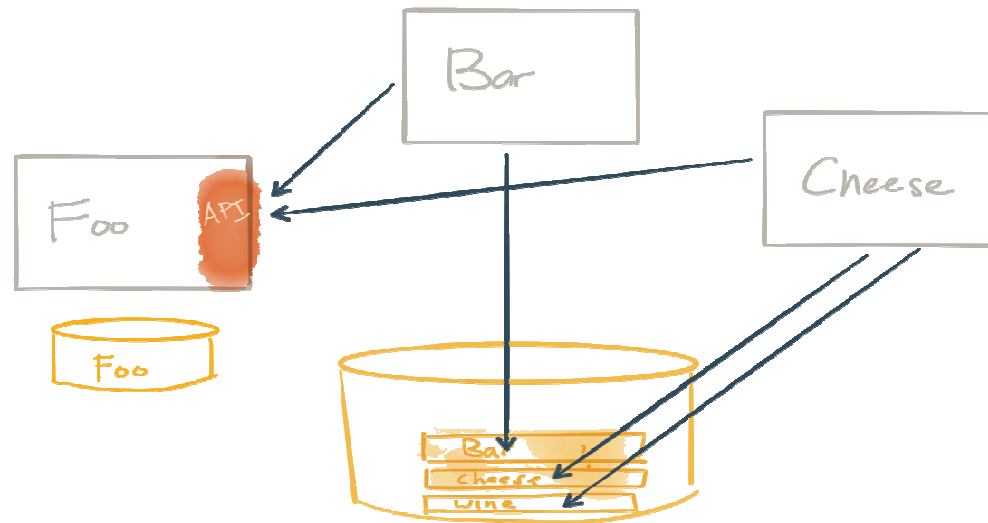
3

Identify Modules by domain, categories, business use, related dependencies.



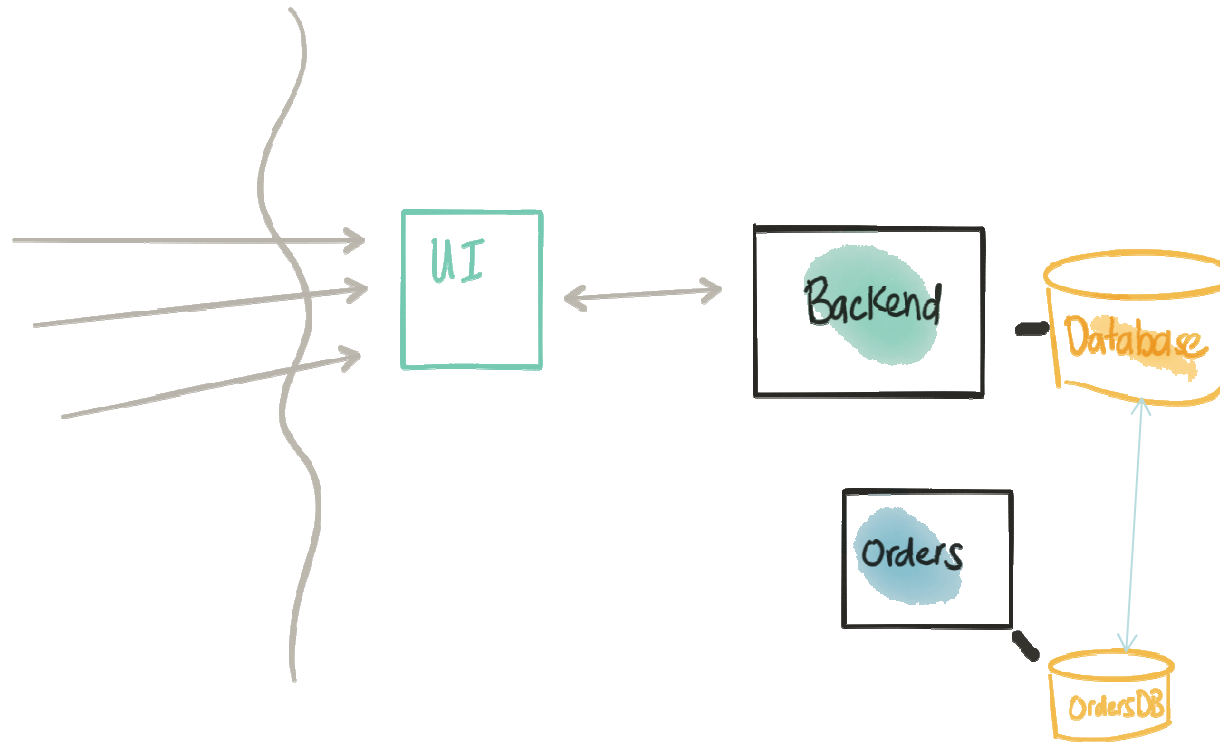
Database break-up

Break out database tables, wrap with service and update dependencies



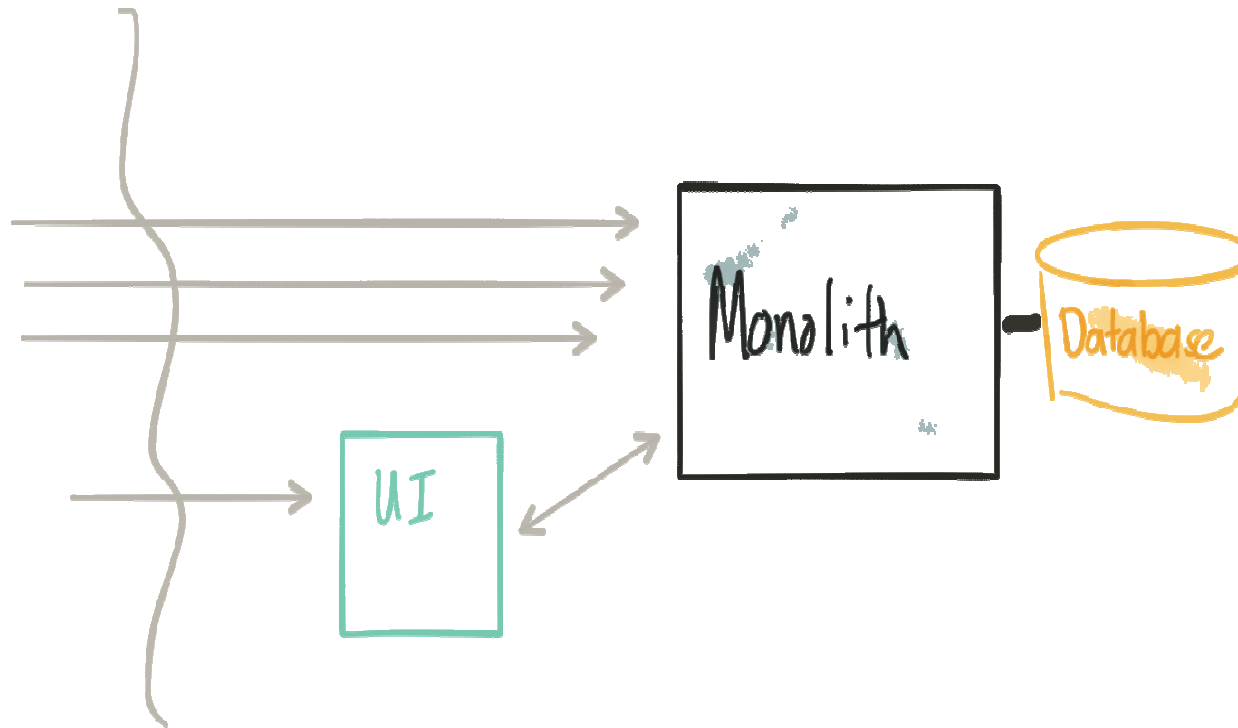
Service Modules

5



UI Separation

6



MicroService Design Principles⁷

- ✓ Scalability
- ✓ Availability
- ✓ Resiliency: ability to recover quickly from difficulties
- ✓ Flexibility
- ✓ Failure isolation
- ✓ Loose coupling
- ✓ Independent, autonomous
- ✓ Decentralized
- ✓ Failure isolation
- ✓ Auto-Provisioning of Nodes
- ✓ Continuous Delivery

Integration Patterns

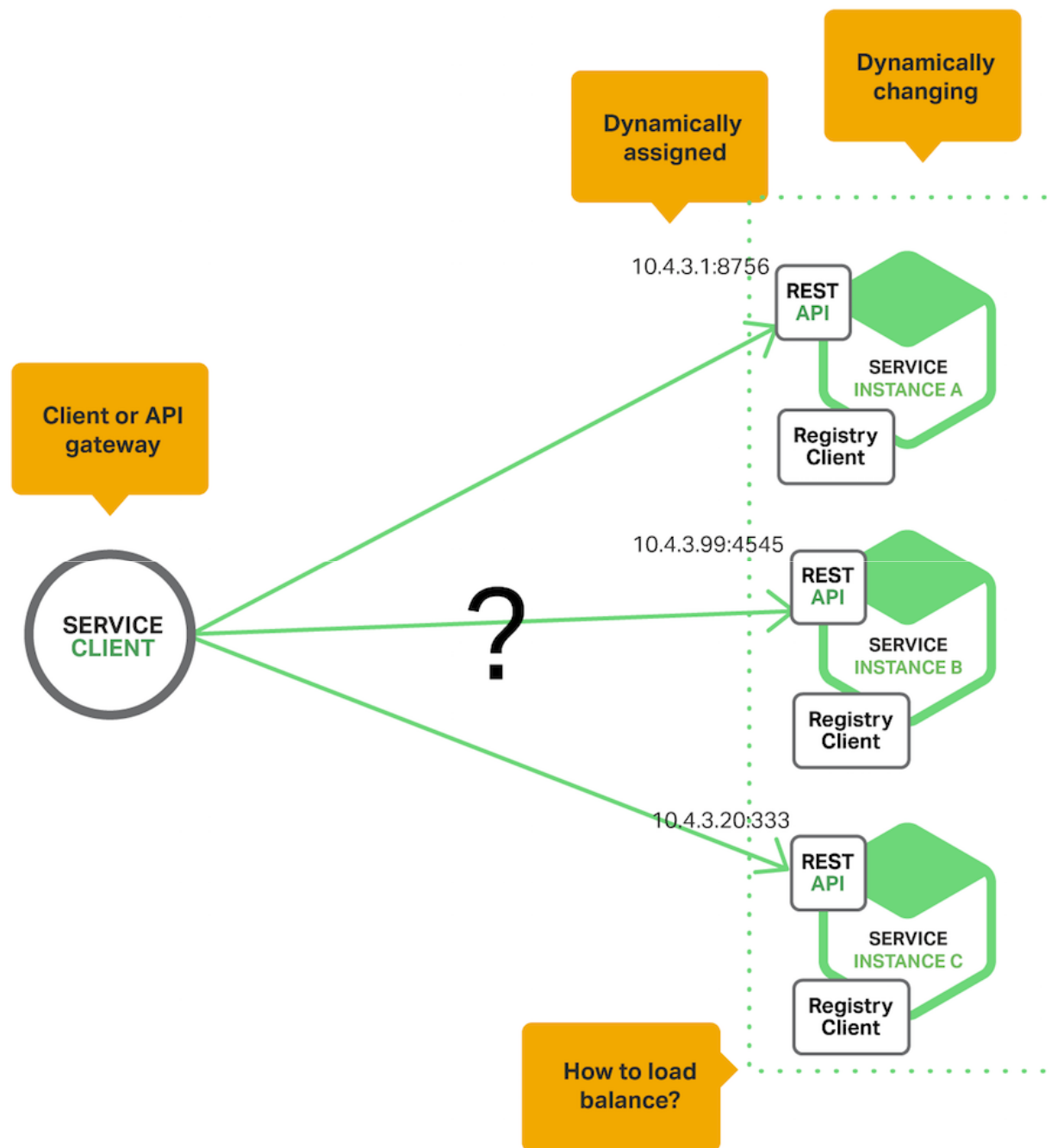
- ❖ **Aggregator Pattern**
- ❖ **Splitter**
- ❖ **UI separation**
- ❖ **Monitoring patterns**
 - ❖ **Log Aggregation**
 - ❖ **Performance Metrics for analysis**
 - ❖ **Distributed Tracing**
 - ❖ **Health Check**
- ❖ **Command Query Responsibility Segregation(CQRS)**

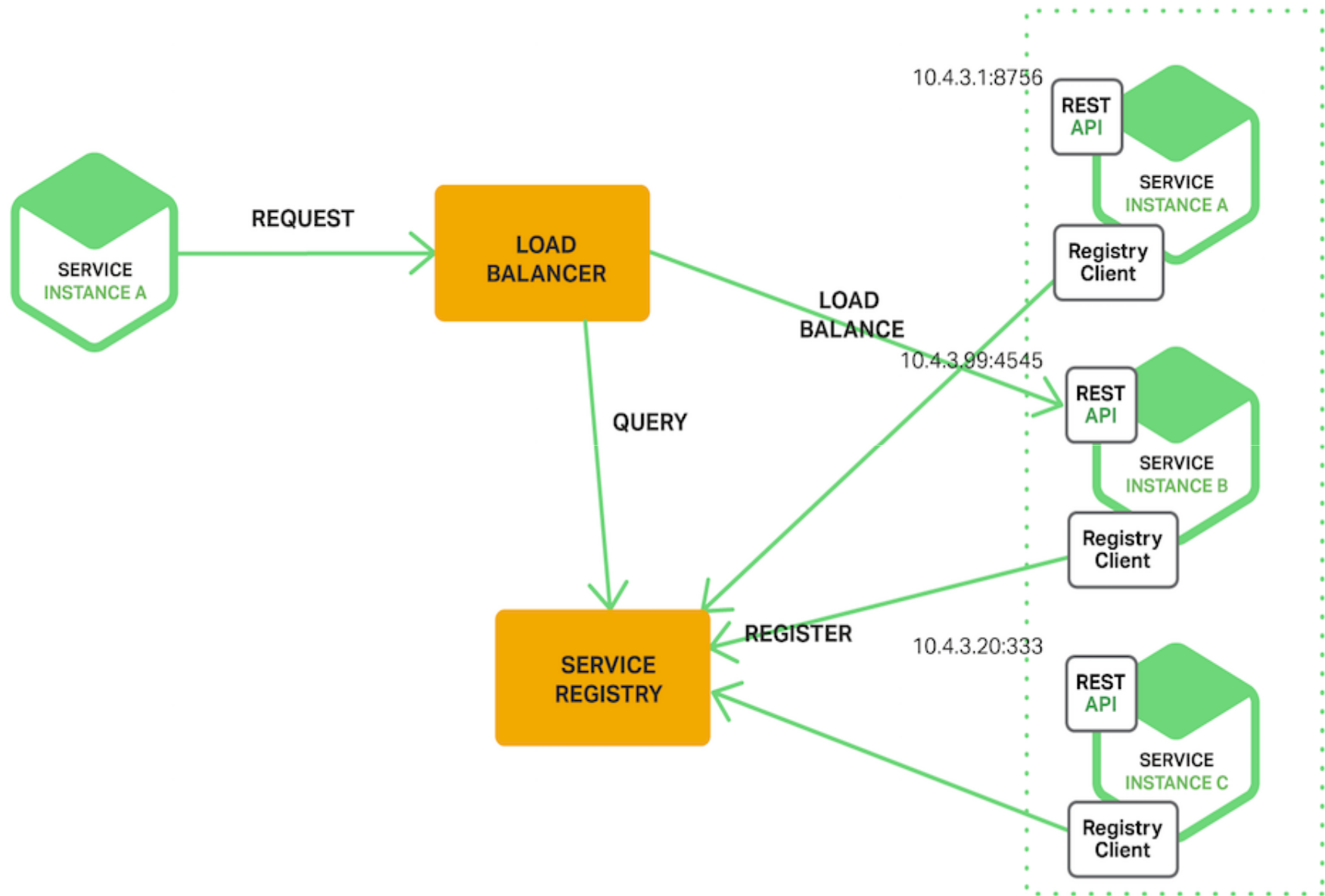
Deployment Patterns

- ❖ **External Configuration**
- ❖ **Service Discovery**
- ❖ **API Gateway**
- ❖ **Circuit Breaker**
- ❖ **Blue-Green Deployment**
- ❖ **Saga for consistency**
- ❖ **Load balancing**
- ❖ **High availability**

Service Registry and Discovery¹⁰

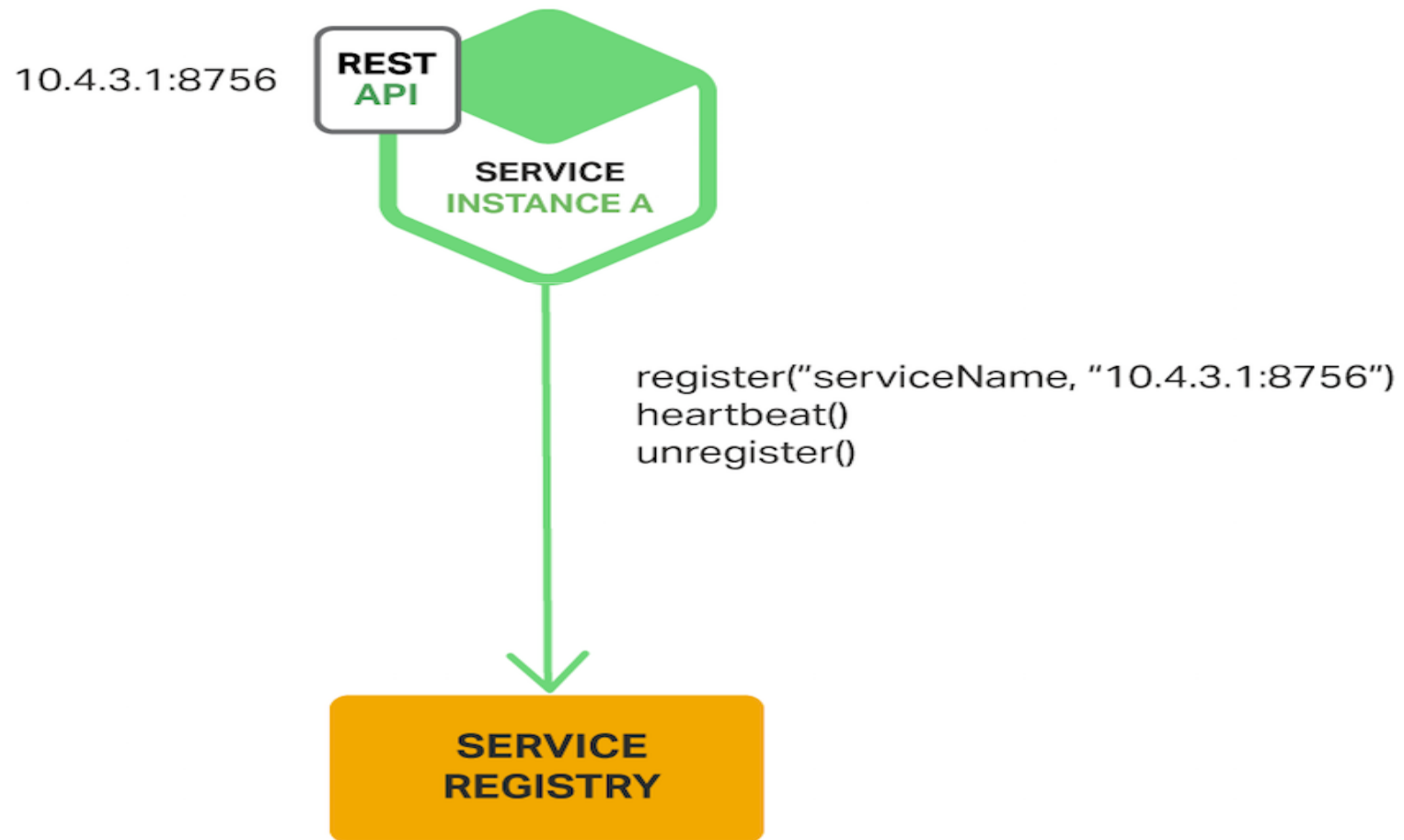
- Services should be isolated and independent.
- Services should NOT have hard coded references to other services.
- **Services should be able to register and discover from external environment.**





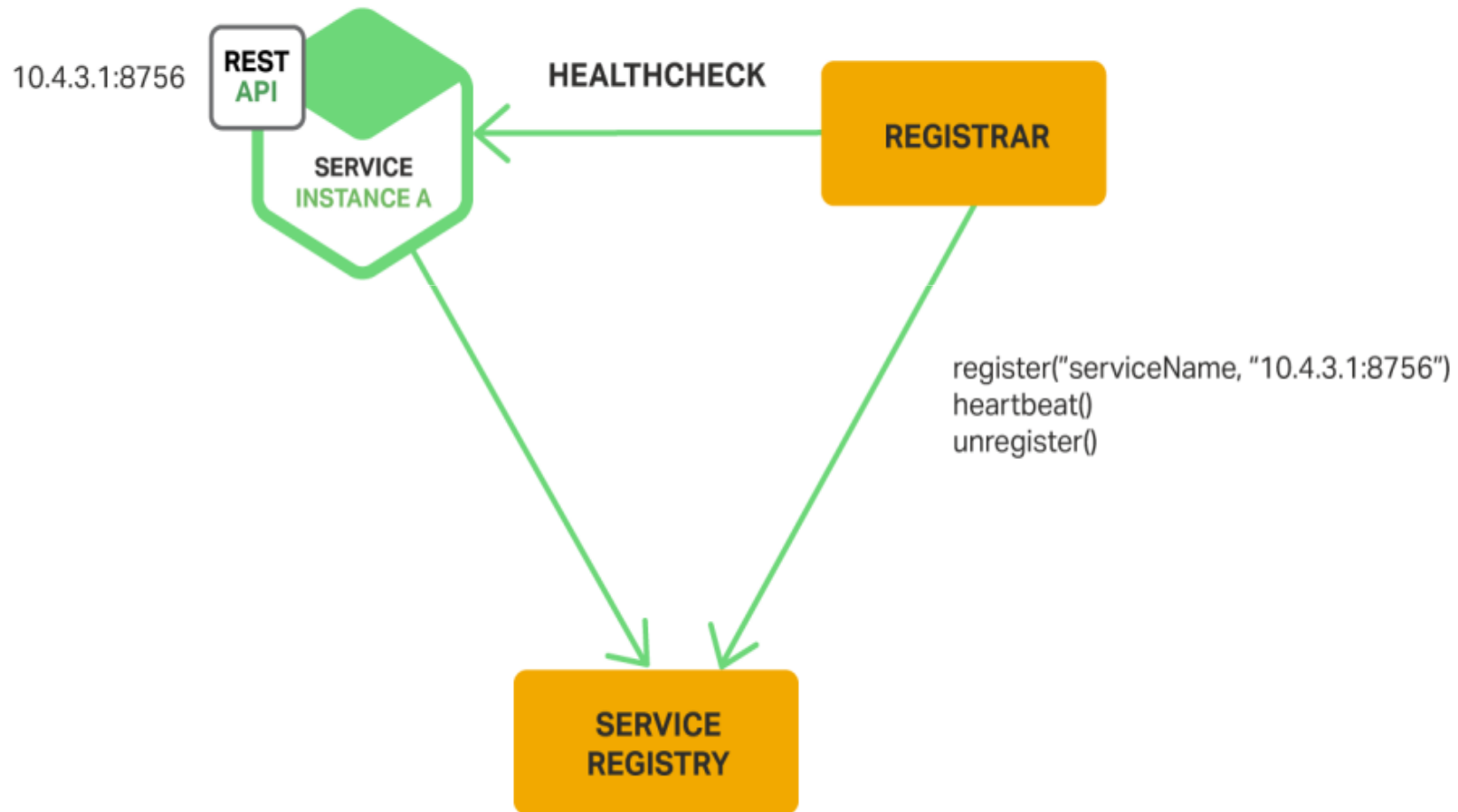
Self Registration

13



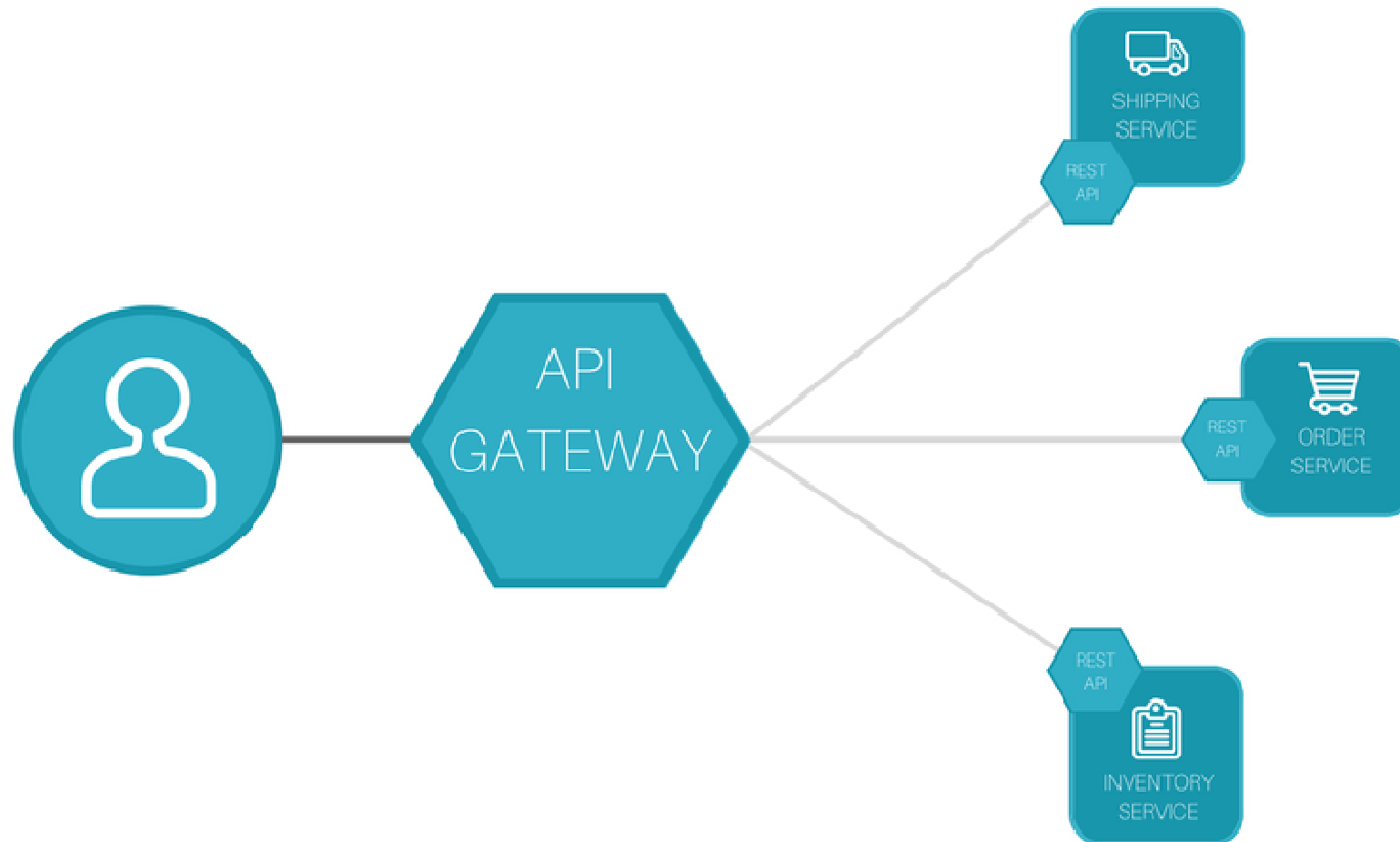
Third Party Registration

14



API Gateway

15



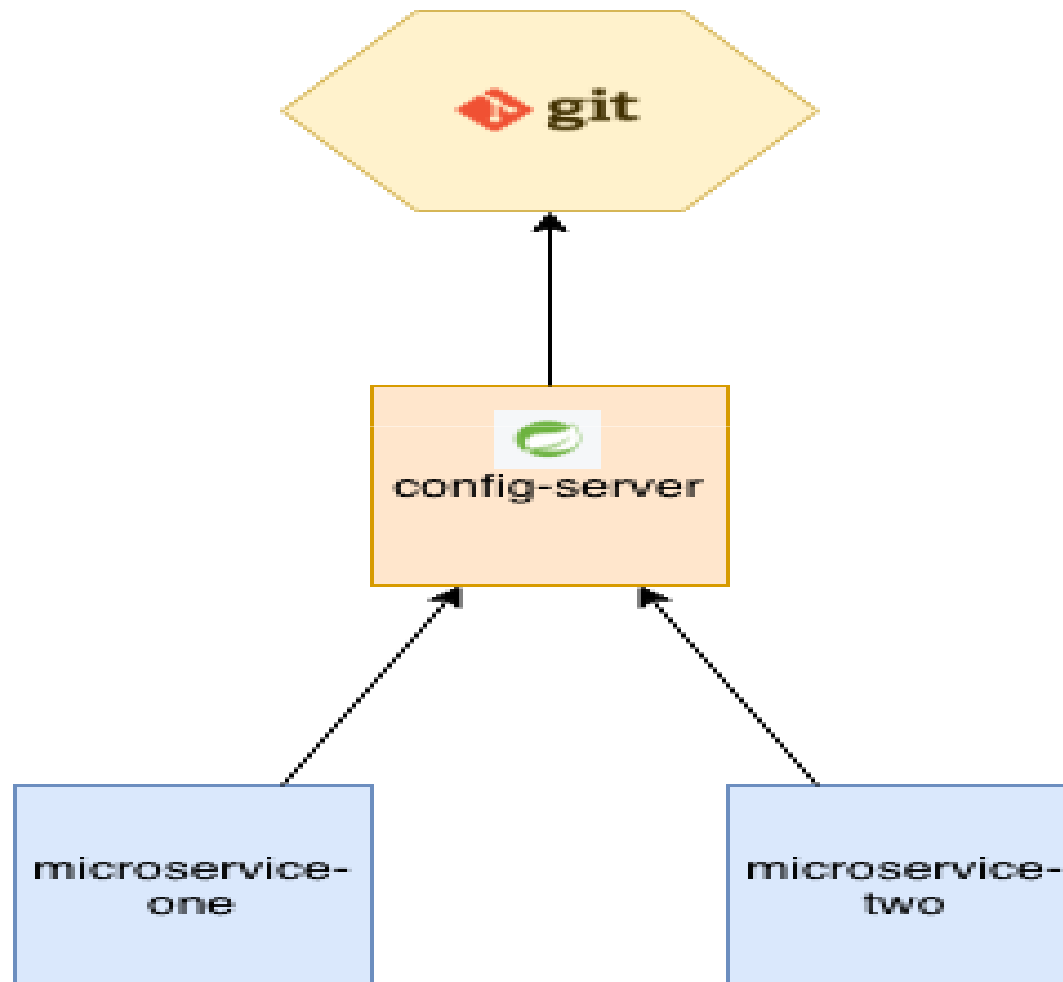
API Gateway Responsibilities

16

- Routing of requests to specific machine/node
- Security authentication and authorize for access control
- Load balance the requests across nodes/machines

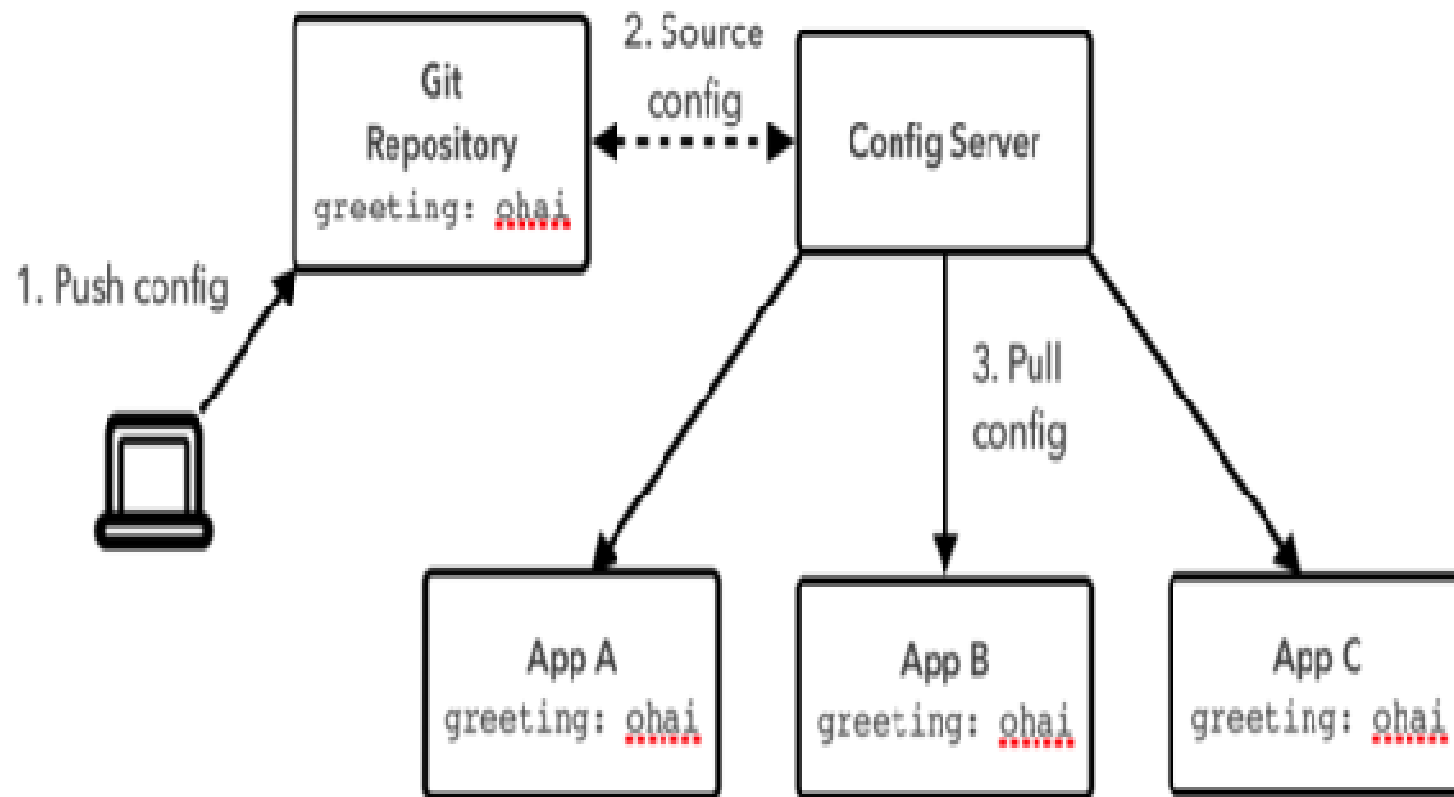
Config Server

17



Getting the configuration

18



Load Balancing

19

