

SESSION SEVEN

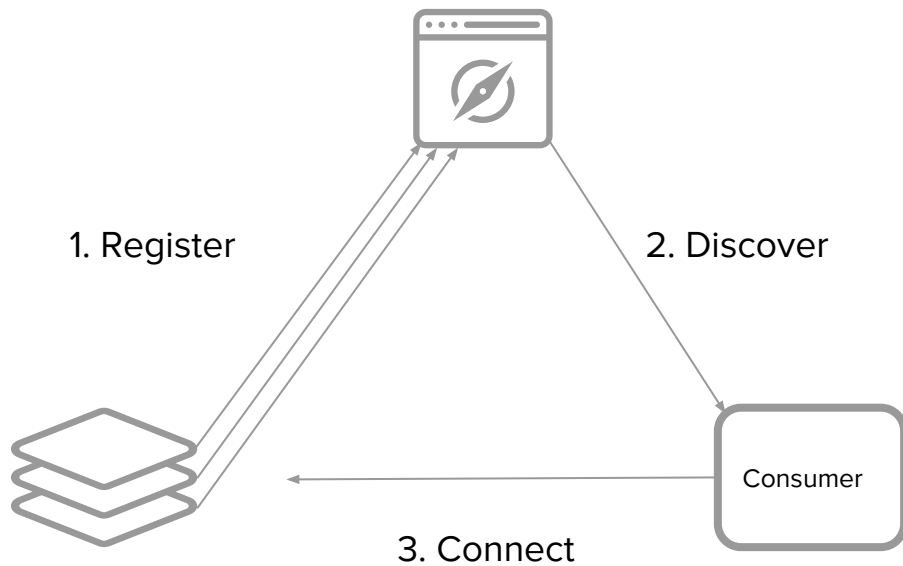
Spring Cloud Service Discovery

Distributed Service Challenges

Service Discovery

- Dependencies are not Inter-Process Method Calls
- Manual Configurations are difficult
- Past Attempts
 - Service Locators
 - Dependency Injection
 - Service Registries

Service Discovery Pattern



Spring Cloud Service Registry

Features

- HTTP Interface
 - Client Libraries
 - Client Registry
- Registry Server
 - Heartbeats
 - Service Catalogue
 - Exchange

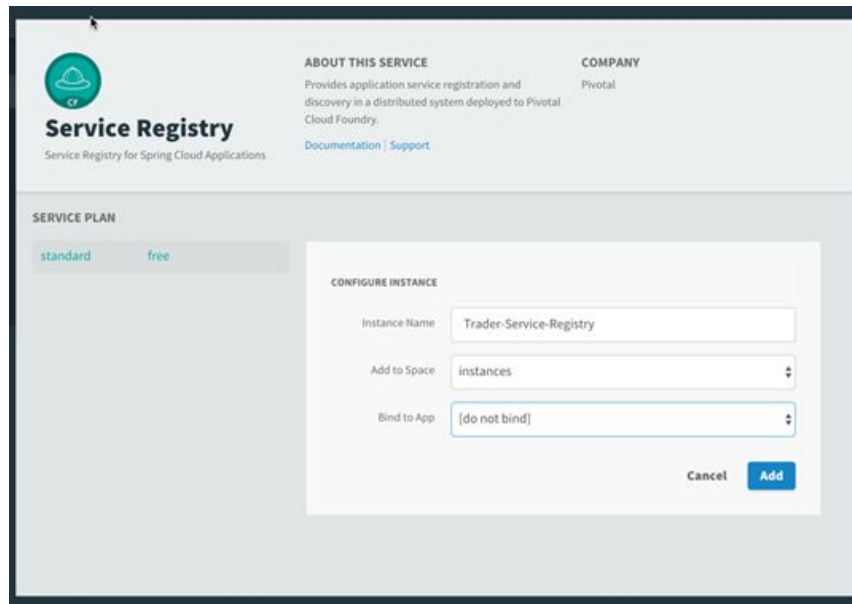
Capabilities

- Service Details
 - Name
 - Port
 - Health
 - URLs
- Embeddable with Spring Boot
 - `@EnableEurekaServer`
 - `@EnableDiscoveryClient`

Spring Cloud Service Discovery for Pivotal Cloud Foundry

Better Together

- Native Support for Automated Service Registry Server Deployment
- Security-Optimized Eureka Service Instance with OAuth2
- CF Service Binding Ready
- Cloud Connectors for Automatic Reconfiguration



The screenshot displays the Pivotal Service Registry configuration page. At the top left is the Pivotal logo and the text "Service Registry" with the subtitle "Service Registry for Spring Cloud Applications". To the right, under "ABOUT THIS SERVICE", it states: "Provides application service registration and discovery in a distributed system deployed to Pivotal Cloud Foundry." with links for "Documentation" and "Support". Further right, under "COMPANY", it lists "Pivotal".

The main section is titled "SERVICE PLAN" and contains two tabs: "standard" (selected) and "free". Below this is a "CONFIGURE INSTANCE" form with the following fields:

- Instance Name:
- Add to Space: - Bind to App:

At the bottom right of the form are "Cancel" and "Add" buttons.

Spring Cloud Client-Side Features

Sidecar Designs

- Run As Separate Process
- Spring Cloud Ribbon
 - Client-Side Load Balancing HTTP Client
 - Multiple LB Algorithms for Consumption
 - Cloud-Aware with Support for Zones, Circuit Breakers
- Spring Cloud Zuul
 - Reverse Proxy Support
 - API Gateway

Gateway Design

- Authentication
- Stress Testing
- Canary Testing
- Dynamic Client-Side Routing
- Service Migration
- Security
- Active/Active Management

Client Services

```
@EnableDiscoveryClient
@EnableZuulProxy // <- for Zuul Reverse Proxy
@EnableConfigServer // <- for built-in Config Server
@SpringBootApplication
public class QuotesService {

    public static void main(String[] args) {
        SpringApplication.run(QuotesService.class, args);
    }
}
```

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Questions?

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Lab: Spring Cloud Service Discovery