



# Dubbo/Spring Cloud – Spring Cloud 服务调用新选择

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Spring Cloud Alibaba PMC, 阿里云产品 EDAS 研发

# 大纲

- Spring Cloud 微服务框架
- Dubbo 融入 Spring Cloud 体系
- Demo 演示
- Spring Cloud 未来展望



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# SPRING FRAMEWORK







**SPRING BOOT**

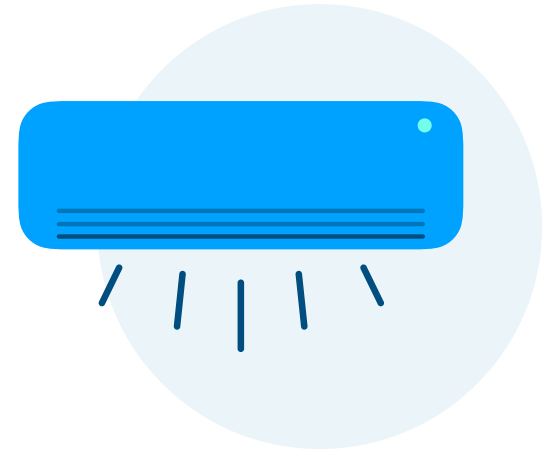






# Spring Cloud Features

<https://spring.io/projects/spring-cloud>



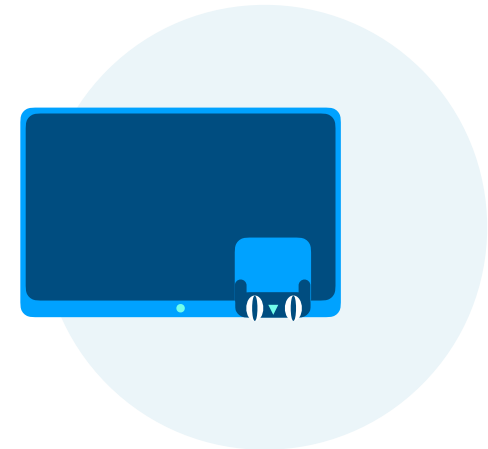
## 分布式配置

Distributed/versioned configuration



## 服务路由

Routing



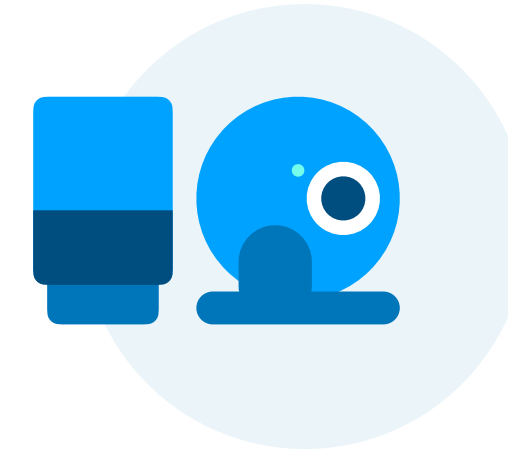
## 负载均衡

Load balancing



## 分布式消息

Distributed messaging



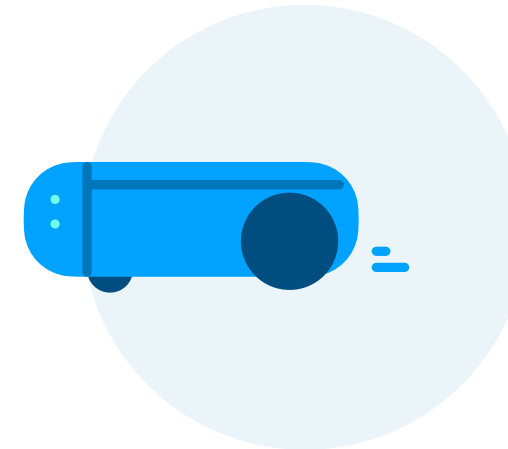
## 服务注册/发现

Service registration and discovery



## 服务调用

Service-to-service calls



## 服务熔断

Circuit Breakers

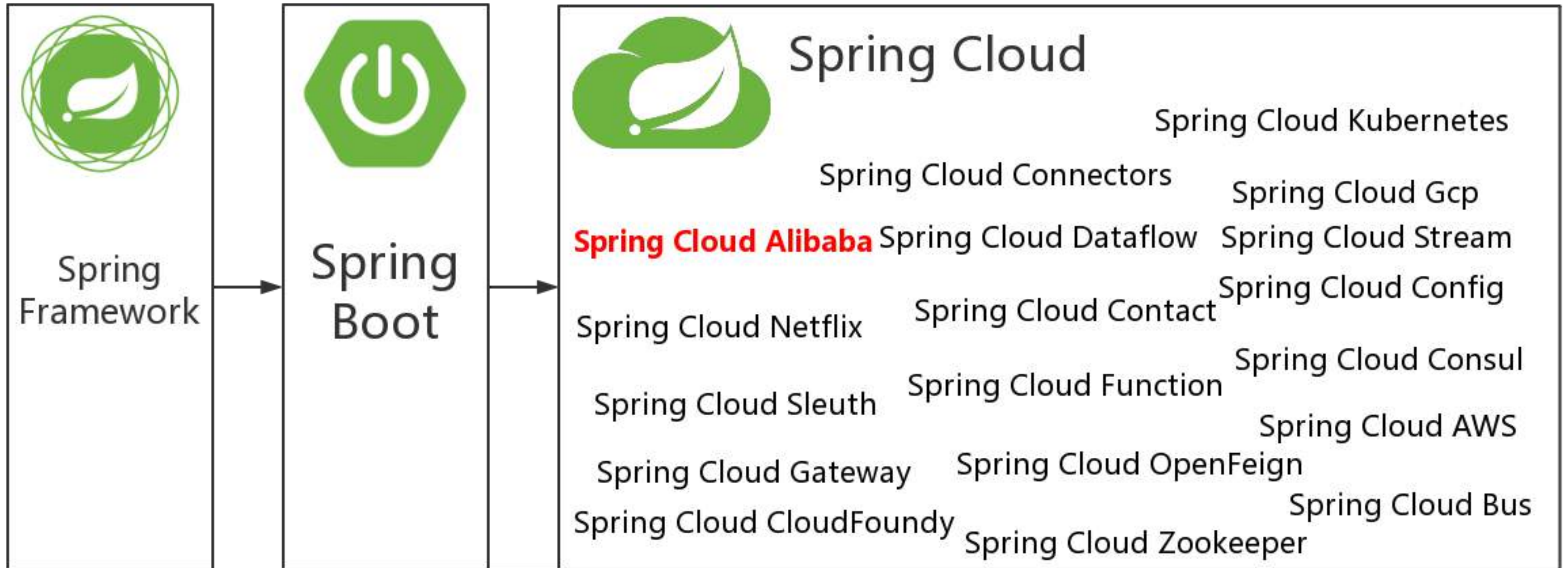


## leader 选举/集群状态

Leadership election and cluster state

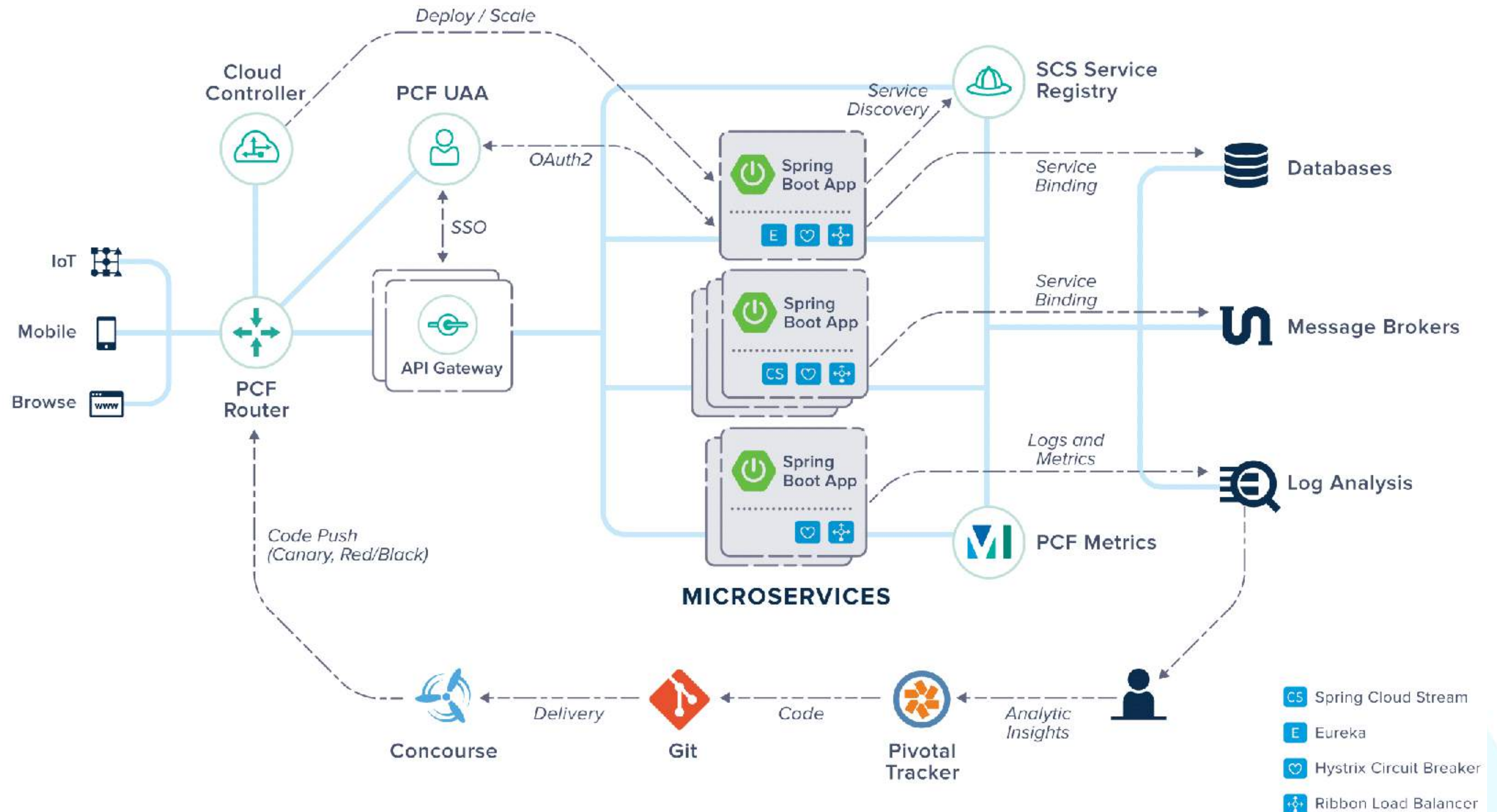
# Spring Cloud Projects

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



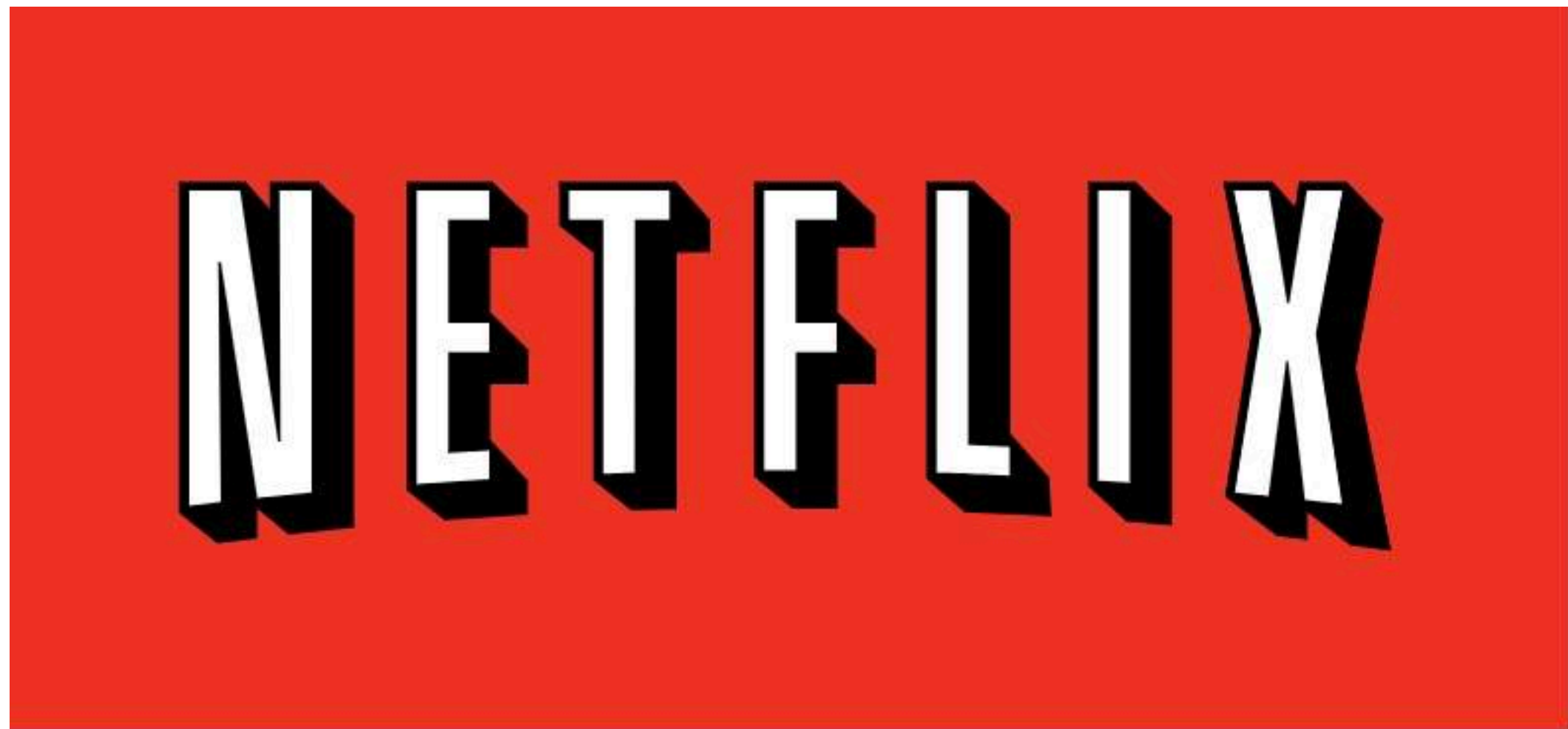


# Spring Cloud Architecture





# Spring Cloud Netflix



|         | Netflix OSS |
|---------|-------------|
| 分布式配置   | Archaius    |
| 服务注册/发现 | Eureka      |
| 服务熔断    | Hystrix     |
| 服务调用    | Feign       |
| 服务路由    | Zuul        |
| 分布式消息   | —           |
| 负载均衡    | Ribbon      |



# Netflix 开源现状

[https://cloud.spring.io/spring-cloud-static/Greenwich.SR2/multi/multi\\_\\_modules\\_in\\_maintenance\\_mode.html](https://cloud.spring.io/spring-cloud-static/Greenwich.SR2/multi/multi__modules_in_maintenance_mode.html)

spring-cloud-netflix-eureka-server

spring-cloud-netflix-eureka-client

spring-cloud-netflix-archaius

spring-cloud-netflix-hystrix-contract

spring-cloud-netflix-hystrix-dashboard

spring-cloud-netflix-hystrix-stream

spring-cloud-netflix-hystrix

spring-cloud-netflix-ribbon

spring-cloud-netflix-turbine-stream

spring-cloud-netflix-turbine

spring-cloud-netflix-zuul



# Netflix 开源现状



Eureka

1.x 继续维护  
2.x 维护模式



Hystrix

维护模式



Zuul

官方不再对接  
推荐 Spring Cloud  
Gateway



Archaius

维护模式



Ribbon

维护模式



# Netflix 维护模式

- 没有新 Feature
- 只会修复 block 和 security 相关的 issue
- 只会考虑 merge 社区提供的很小的 PR





# Spring Cloud Netflix 替换方案

|         | Spring Cloud Netflix | Spring Cloud 官方           | Spring Cloud Zookeeper | Spring Cloud Consul | Spring Cloud Kubernetes | Spring Cloud Alibaba |
|---------|----------------------|---------------------------|------------------------|---------------------|-------------------------|----------------------|
| 分布式配置   | Archaius             | Spring Cloud Config       | Zookeeper              | Consul              | ConfigMap               | Nacos                |
| 服务注册/发现 | Eureka               | —                         | Zookeeper              | Consul              | Api Server              | Nacos                |
| 服务熔断    | Hystrix              | —                         | —                      | —                   | —                       | Sentinel             |
| 服务调用    | Feign                | OpenFeign<br>RestTemplate | —                      | —                   | —                       | Dubbo RPC            |
| 服务路由    | Zuul                 | Spring Cloud Gateway      | —                      | —                   | —                       | Dubbo PROXY          |
| 分布式消息   | —                    | SCS RabbitMQ              | —                      | —                   | —                       | SCS RocketMQ         |
| 负载均衡    | Ribbon               | —                         | —                      | —                   | —                       | Dubbo LB             |
| 分布式事务   | —                    | —                         | —                      | —                   | —                       | Seata                |



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# Dubbo & Spring Cloud

请问哪位大神比较过spring cloud和dubbo，各自的优缺点是什么? - 知乎

<https://www.zhihu.com/question/45413135> ▼ Translate this page

May 4, 2016 - **dubbo**不限于**dubbo**本身，还有dubbox等。要是大神还能谈谈微服务未来的发展趋势那就更好了。

微服务框架**spring cloud** 和**dubbo** 有什么区别?

May 2, 2017

在未来几年**dubbo**和**spring cloud**哪个会成为分布式服务的主流?

May 9, 2018

More results from [www.zhihu.com](http://www.zhihu.com)

You visited this page on 7/14/19.

Java 微服务框架选型（Dubbo 和Spring Cloud? ） - 田园里的蟋蟀- 博客园

<https://www.cnblogs.com/xishuai/p/dubbo-and-spring-cloud.html> ▼ Translate this page

Apr 13, 2018 - Java 微服务框架选型（**Dubbo** 和**Spring Cloud**? ）微服务（Microservices）是一种架构风格，一个大型复杂软件应用由一个或多个微服务组成。系统中 ...

You visited this page on 7/14/19.

放弃Dubbo，选择最流行的Spring Cloud微服务架构实践与经验总结 ...

[developer.51cto.com/art/201710/554633.htm](http://developer.51cto.com/art/201710/554633.htm) ▼ Translate this page

Oct 19, 2017 - **Spring Cloud** 在国内中小型公司能用起来吗?从2016 年初一直到现在，我们在这条路上已经走了一年多。

阿里Dubbo疯狂更新，关Spring Cloud什么事? - 纯洁的微笑博客

[www.ityouknow.com/springcloud/2017/.../dubbo-update-again.ht...](http://www.ityouknow.com/springcloud/2017/.../dubbo-update-again.ht...) ▼ Translate this page

Nov 20, 2017 - 我上次在写放弃**Dubbo**，选择最流行的**Spring Cloud**微服务架构实践与经验总结这篇文章的时候，就有很多的网友给我留言说，**Dubbo** 又开始更新了 ...

You visited this page on 7/14/19.



# Dubbo & Spring Cloud



# Dubbo 如何融入 Spring Cloud 体系

## 1. 服务注册

- spring-cloud-starter-nacos-discovery
- spring-cloud-starter-consul-discovery
- spring-cloud-starter-zookeeper-discovery
- spring-cloud-starter-netflix-eureka-client

## 2. 服务调用

- RestTemplate
- OpenFeign

```
@Bean
@LoadBalanced
public RestTemplate restTemplate() {
    return new RestTemplate();
}
```

```
@FeignClient(name = "service-provider")
public interface EchoService {
    @RequestMapping(value = "/echo/{str}", method = RequestMethod.GET)
    String echo(@PathVariable("str") String str);
}
```

NACOS.







# Dubbo 如何融入 Spring Cloud 体系

SpringCloud 注册中心

NACOS.

 `spring-cloud://localhost` 



Dubbo Spring Cloud 服务调用

```
@Bean
@LoadBalanced
@DubboTransported
public RestTemplate restTemplate() {
    return new RestTemplate();
}
```

```
@FeignClient("${provider.application.name}")
@DubboTransported(protocol = "dubbo")
public interface DubboFeignRestService {
```





# @DubboTransported

## Dubbo Service & SpringMVC Controller

```
@Service(version = "1.0.0")
@RestController
public class SpringRestService implements RestService {

    private Logger logger = LoggerFactory.getLogger(getClass());

    @Override
    @GetMapping(value = "/param")
    public String param(@RequestParam String param) {
        log( url: "/param", param);
        return param;
    }

    @Override
    @PostMapping("/params")
    public String params(@RequestParam int a, @RequestParam String b) {
        log( url: "/params", result: a + b);
        return a + b;
    }
}
```

## @DubboTransported FeignClient Consume

```
@FeignClient("dubbo-provider")
@dubboTransported(protocol = "dubbo")
public interface DubboFeignRestService {

    @GetMapping(value = "/param")
    String param(@RequestParam("param") String param);

    @PostMapping("/params")
    String params(@RequestParam("b") String paramB,
        @RequestParam("a") int paramA);
}
```

## Dubbo & Rest protocol Service

```
@Service(version = "1.0.0", protocol = {"dubbo", "rest"})
@Path("/")
public class StandardRestService implements RestService {

    private Logger logger = LoggerFactory.getLogger(getClass());

    @Override
    @Path("param")
    @GET
    public String param(@QueryParam("param") String param) {
        log( url: "/param", param);
        return param;
    }

    @Override
    @Path("params")
    @POST
    public String params(@QueryParam("a") int a, @QueryParam("b") String b) {
        log( url: "/params", result: a + b);
        return a + b;
    }
}
```



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# Demo 演示

<https://github.com/spring-cloud-alibaba-group/dubbo-meetup-20190720>



 **SpringCloud 注册中心**

 **Dubbo 服务调用**



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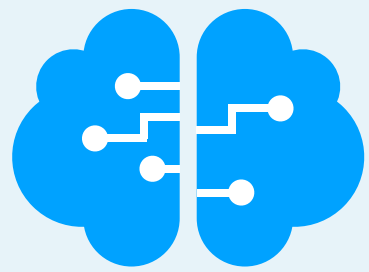
04



Spring Cloud  
未来展望



# Spring Cloud 未来展望



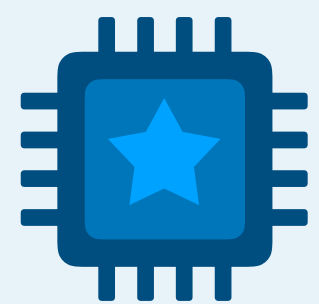
## Netflix OSS 几乎所有项目进入维护模式

维护注定未来会被淘汰。Spring Cloud 适配的 starter 也进入了维护模式



## Spring Cloud Zookeeper & Consul & Kubernetes

只实现了 Spring Cloud 体系内配置&注册功能，功能不完善



## Spring Cloud Alibaba

基本实现 Spring Cloud 体系内所有的功能，并扩展了服务调用功能(dubbo spring cloud)



# Spring Cloud 规范定义



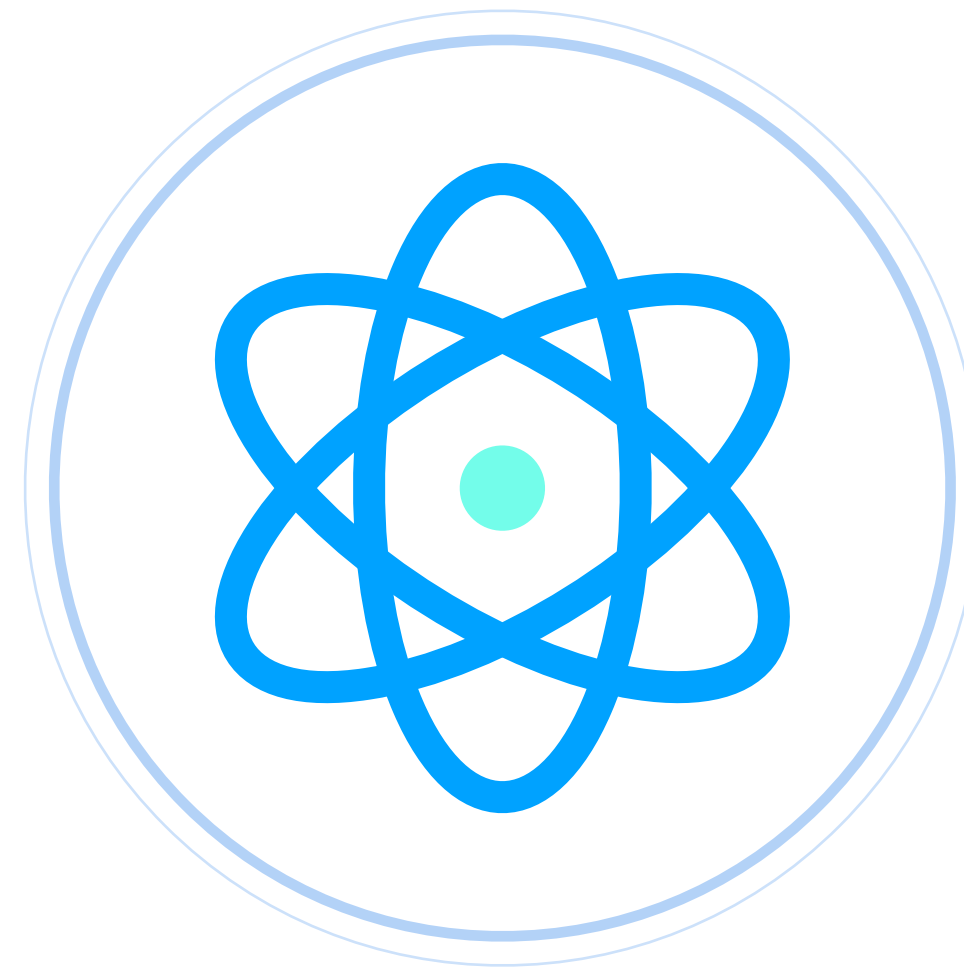
**commons**

服务注册/发现 &  
配置管理



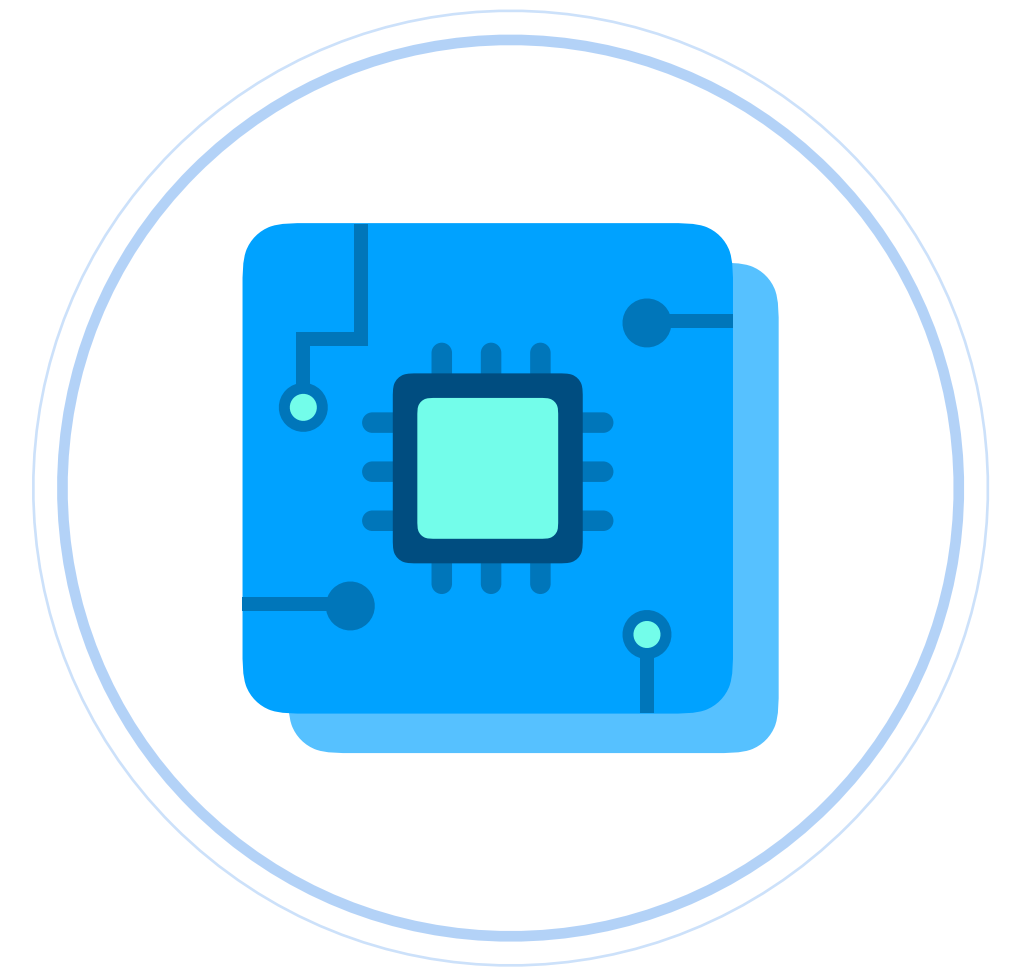
**loadbalancer**

负载均衡



**circuitbreaker**

服务熔断



**spring-cloud-stream**

统一消息模型

<https://github.com/spring-cloud-incubator/spring-cloud-circuitbreaker>

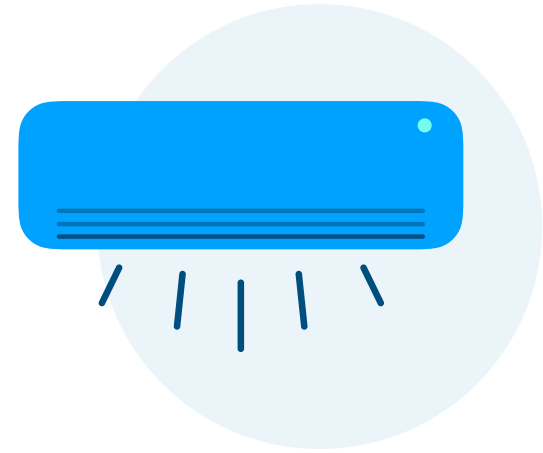
<https://github.com/spring-cloud-incubator/spring-cloud-loadbalancer>

<https://github.com/spring-cloud/spring-cloud-commons>

<https://github.com/spring-cloud/spring-cloud-stream>

# Spring Cloud Alibaba

<https://github.com/alibaba/spring-cloud-alibaba>



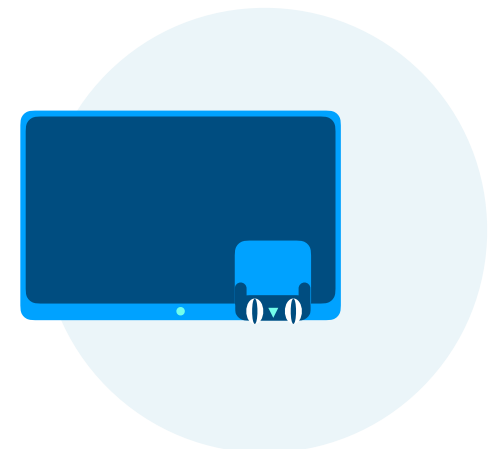
## Nacos Config

Distributed/versioned configuration



## Dubbo Proxy

Routing



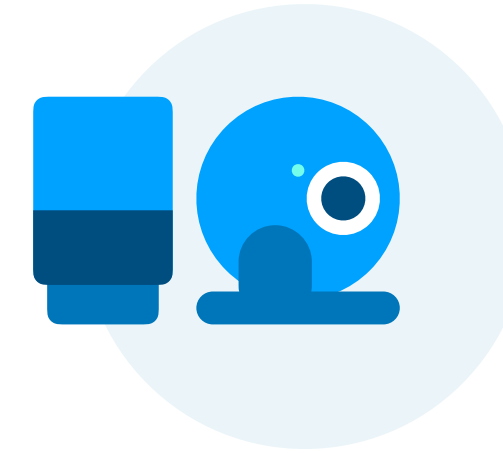
## Dubbo LB or Ribbon

Load balancing



## RocketMQ Binder

Distributed messaging



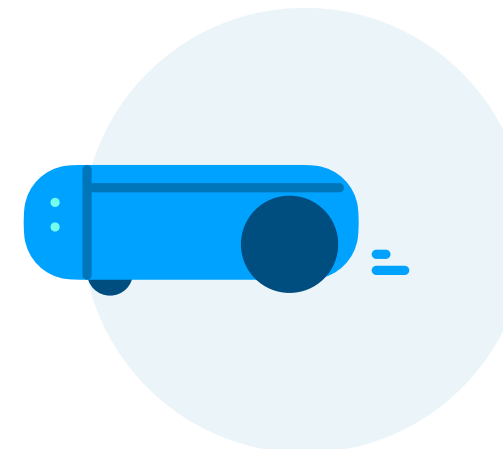
## Nacos Discovery

Service registration and discovery



## Dubbo Rpc

Service-to-service calls



## Sentinel

Circuit Breakers



## RocketMQ Bus

message bus



# Contributors are welcome

## 激励

- 技术成长
- 贡献者物质奖励
- 核心贡献者成为 Committer

文档改进  
与修改

文章分享

bug report  
or bug fix

test case  
补充

新 features  
添加/讨论

issue 处理

# Contact US

Spring Cloud Alibaba 开...

6人



扫一扫群二维码，立刻加入该群。

Github: <https://github.com/alibaba/spring-cloud-alibaba>

企业用户欢迎留言: <https://github.com/alibaba/spring-cloud-alibaba/issues/301>



DBBO

Thank you !

01010101