

微服务简介

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大纲

- 1 Introduction
- 2 Microservices
- 3 总结

Monolith

- 10 年历史, Rails 2.3 + Ruby 1.8
- 若干 Rails 应用
- 超大代码仓库
- 超大数据库系统
- Shared code

Maintaining a Rails application



Origin

痛点

- 测试耗时长
- 开发周期长
- 上线: Dev/QA/OPS/SE, 10 人 1 天

尝试: Service Layer

- Auth with OAuth2
- REST
- Message Queue
- NoSQL
- Workers

低效

- 每个请求都需要认证和授权
- REST: 粒度太细
 - ① `/users/1 -> User.find(1)`
 - ② `/users/1/machines/1 -> User.find(1).machines.find(1)`
 - ③ `/users/1/machines/1/files/1 -> User.find(1).machines.find(1).files.find(1)`

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必然趋势

- 容器化
- Mobile
- Centralized logging
- DevOps: IaaS, PaaS
- NoSQL

Docker, Go and Kubernetes

- Docker: Process is a service
- Go: built for server programming
- Go: cross compiling
- Kubernetes: Replication, Labels and Volumes

API Gateway

- Facade pattern
- Security
- Load balancing
- Circuit breaker

服务发现和配置

- etcd
- consul
- eureka
- 自定义

自管理数据库

- 选择合适的数据库
- 其实 PostgreSQL 足矣
- 去中心化

Conway's Law

来自 Wikipedia

*organizations which design systems ...
are constrained to produce designs
which are copies of the communication
structures of these organizations*
– M. Conway

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缺陷

- 调试、日志
- 粒度
- 集成测试
- 服务之间的兼容性

Focus

- Monolith and microservices are both successful models
- Focus on your business