



DevOpsDays

Shanghai

— 2017.8.18-8.19 —

上海龙之梦酒店（长宁区延安西路1116号）

主办单位： 高效运维社区
GreatOPS Community  Best Practice
最佳实践





海外大型互联网房地产广告公司的 DevOps之路

马博文

关于我: 马博文



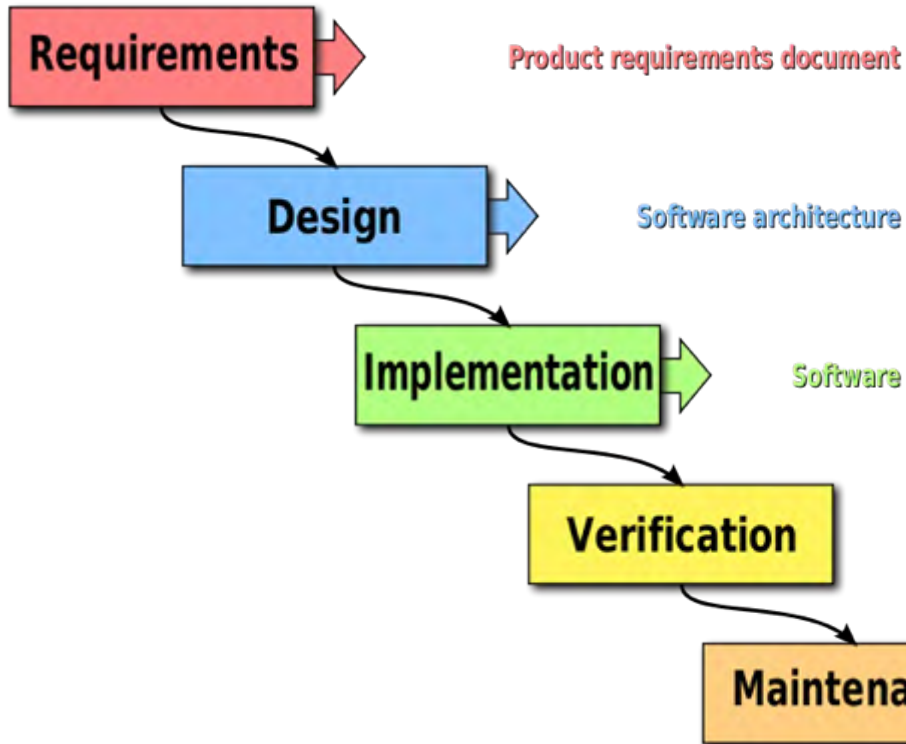
- ex-{ThoughtWorker, Developer}, DevOps
- 熟悉持续交付, 微服务, AWS等
- 熟悉大型网站的运维
- 参与翻译有《Scala编程实战》、《DevOps实践》、《DevOps Handbook》等书
- 斯达克学院《微服务架构与实践》课程高级篇讲师
- 目前关注CloudNative, 函数式编程, Serverless, 安全等
- 简书: <http://www.jianshu.com/u/206a6b0af1c5>



目录

- ➔ **1** What's DevOps
- 2** REA的DevOps之路
- 3** DevOps转型的一些建议
- 4** What's Next

The Big Waterfall



敏捷软件开发宣言

我们一直在实践中探寻更好的软件开发方法，
身体力行的同时也帮助他人。由此我们建立了如下价值观：

个体和互动 高于 流程和工具

工作的软件 高于 详尽的文档

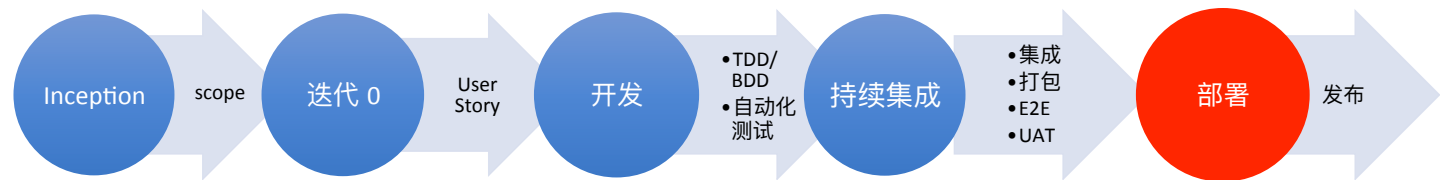
客户合作 高于 合同谈判

响应变化 高于 遵循计划

也就是说，尽管右项有其价值，
我们更重视左项的价值。

Kent Beck	James Grenning	Robert C. Martin
Mike Beedle	Jim Highsmith	Steve Mellor
Arie van Bennekum	Andrew Hunt	Ken Schwaber
Alistair Cockburn	Ron Jeffries	Jeff Sutherland
Ward Cunningham	Jon Kern	Dave Thomas

软件交付 == 价值交付



快速交付 VS 稳定



DEV

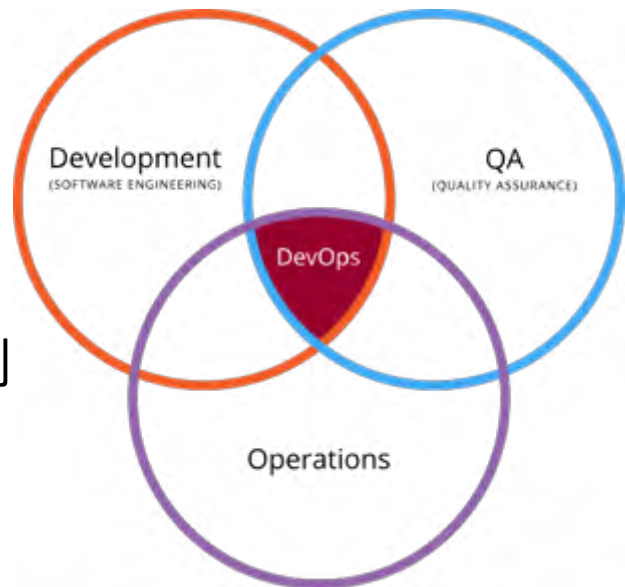


扎心了，老铁呀



OPS

DevOps to Save



DevOps是**运维和开发**工程师参与到**整个服务生命周期**-从设计到开发过程到生产环境维护的**的实践**。

- Agile Admin

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1 What's DevOps

➔ **2** REA的DevOps之路

3 DevOps转型的一些建议

4 What's After DevOps

背景

08年左右	现在
职能型IT组织结构	DevOps,全功能团队(类Sportify)
< 8个团队	40+团队
若干单块应用架构	微服务+容器化(500+)
两个数据中心	两个数据中心和100+AWS账户
Ops部署	持续交付/持续部署
瀑布式开发	精益/看板

-2008: 存在的问题

1. 瀑布式开发
 - 特性上线慢，反馈周期长
 - 沟通成本高
2. 业务逐渐增多，如何保证
 - 交付的质量
 - 交付的速度
3. 运维负责部署和维护
 - 人工部署、维护
 - 疲于奔命，时不时会出现重大事故

改进的方案

1. 在一个小的业务部门引入敏捷咨询
 - 敏捷实践，站会，迭代式开发
 - TDD, BDD, 持续集成(Jenkins/GoCD)
2. 使用puppet对生产环境做配置即代码管理

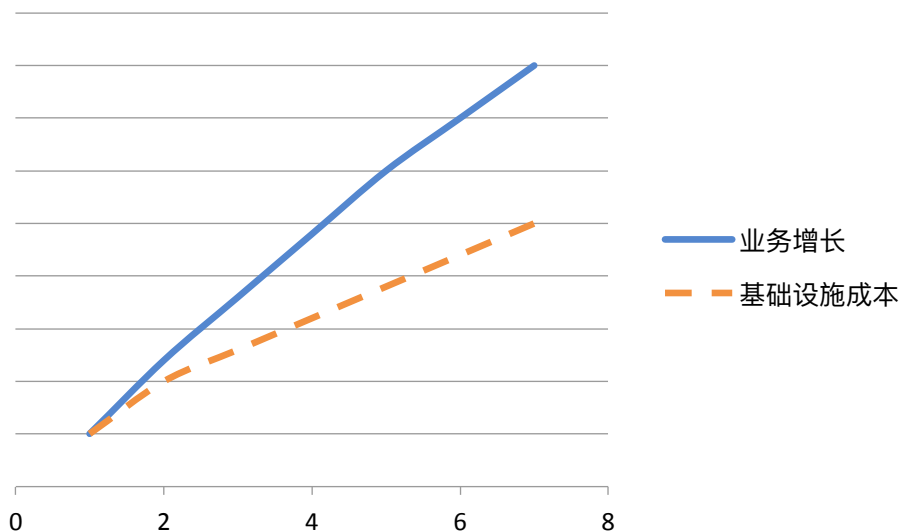
-2010 达到的目标

1. 部门内达到每两周交付，自动化测试，持续集成的
2. 对生产环境的管理成本降低
3. 敏捷实践、持续集成开始推广到其它部门
4. 每两周部署一次(CR)，由运维执行

新的问题

1. 业务发展快，项目团队快速增长，缺乏测试环境(成本+运维无力维护更多的服务器)
2. 2周一次的部署仍然不够快，业务需要更加快速的上线时间以及来自市场的反馈
3. 增长服务的部署成本对于运维的压力很大

基础设施成本也是个问题

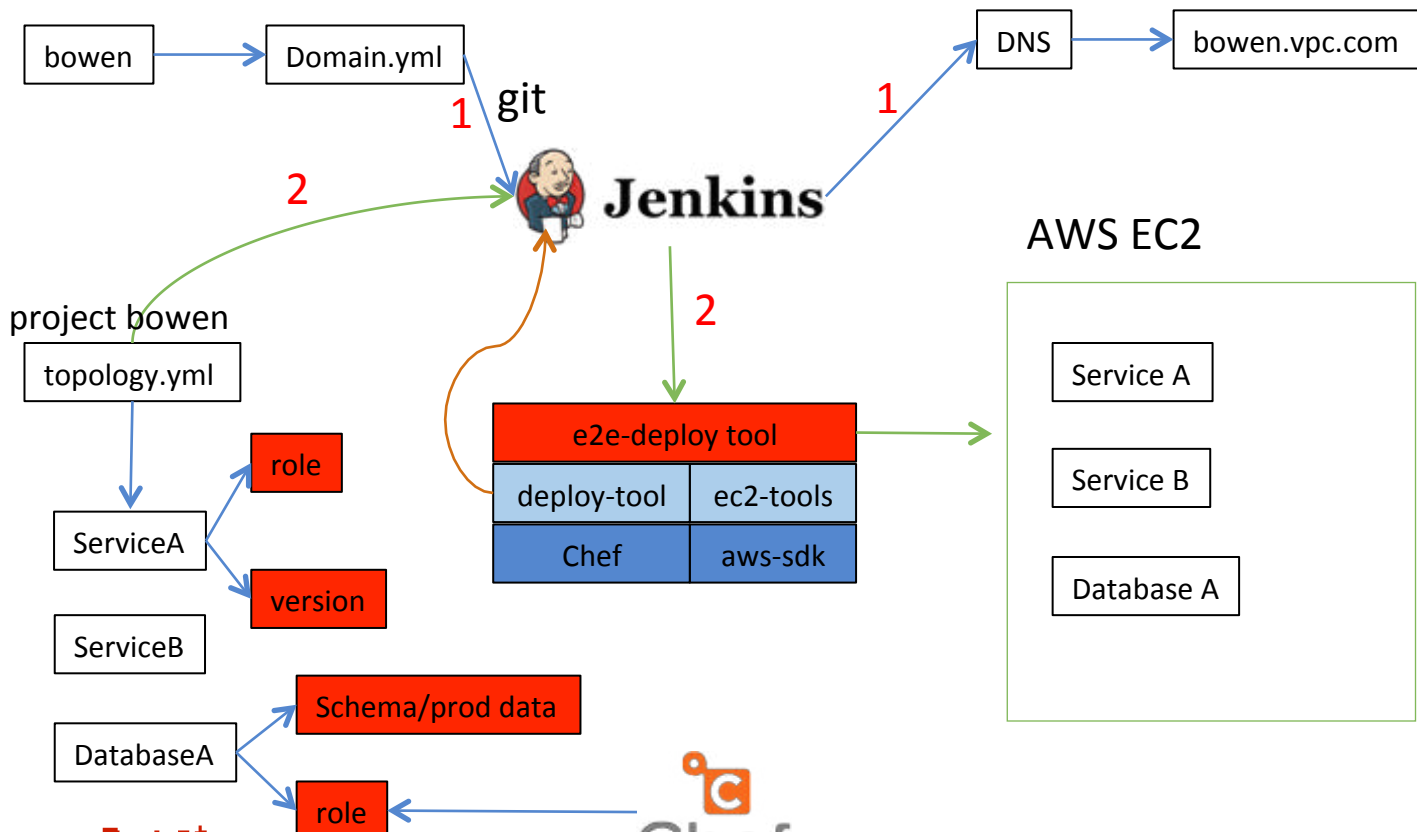


Gandalf Project



We shall use AWS

Gandalf Project



全自动化测试



The screenshot shows a Jenkins build result summary page. On the left is a sidebar with a list of stages and jobs under the heading 'Cucumber + Tests'. The main content area is titled 'Build result summary' and includes tabs for 'Build summary', 'Tests', 'Commits', 'Artifacts', 'Logs', and 'Metadata'. The 'Build summary' tab is active, showing 'Completed 06 Dec 2016, 4:32:34 PM - 8 hours ago', 'Duration 26 minutes', and 'Labels None'. Below this are three large '0' indicators for 'New failures', 'Existing failures', and 'Fixed'. The 'Code commits' section shows a table with columns 'Author' and 'Commit', listing two commits by 'Agent Admin'. The 'Error log' section shows a warning icon and the message: 'Agent "bamboo-agents-docker-1-12-i-0d96f7458944fb99e-10.47.4 (06 Dec 2016, 4:06:46 PM)'.

Stages & jobs

Cucumber + Tests

- ✓ Cucumber Bucket 1 Compose
- ✓ Cucumber Bucket 10 Compose
- ✓ Cucumber Bucket 2 Compose
- ✓ Cucumber Bucket 3 Compose
- ✓ Cucumber Bucket 4 Compose
- ✓ Cucumber Bucket 5 Compose
- ✓ Cucumber Bucket 6 Compose
- ✓ Cucumber Bucket 7 Compose
- ✓ Cucumber Bucket 8 Compose
- ✓ Cucumber Bucket 9 Compose
- ✓ JS Tests + DSXML Contracts + Quality
- ✓ Spec

Release

- ✓ Release

Promote to E2E

- ✓ Update in E2e

Promote to Production

- ⊙ Update in prod

Build summary Tests Commits Artifacts Logs Metadata

Build result summary

Details

Completed 06 Dec 2016, 4:32:34 PM - 8 hours ago

Duration 26 minutes

Labels None

Show more

0 New failures 0 Existing failures 0 Fixed

Code commits

Author	Commit
Agent Admin	[REDACTED]
Agent Admin	[REDACTED]

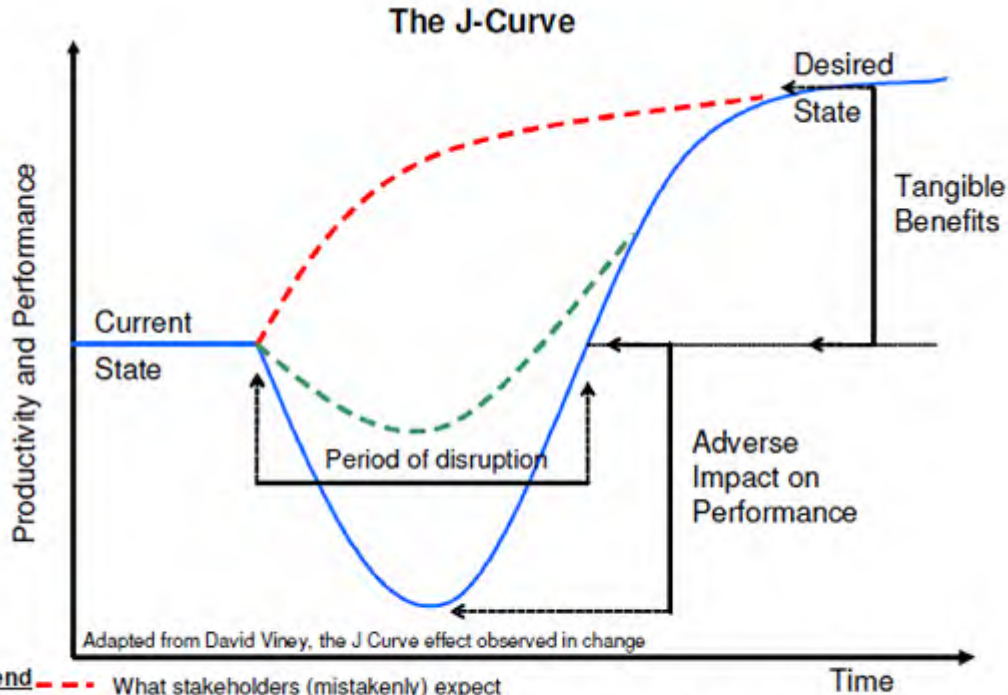
AA e2e

Author	Com
[REDACTED]	325

Error log

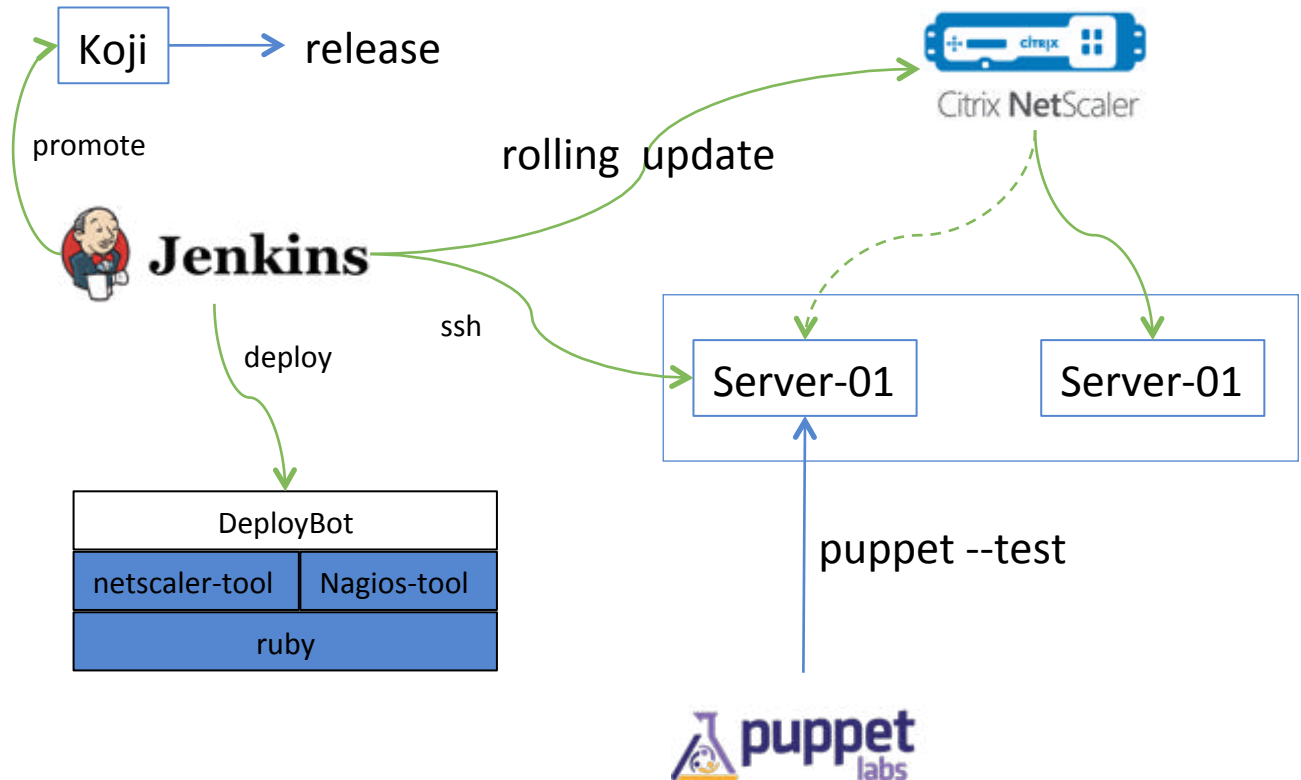
⚠ Agent "bamboo-agents-docker-1-12-i-0d96f7458944fb99e-10.47.4 (06 Dec 2016, 4:06:46 PM)

The J-Curve



- Legend**
- - - What stakeholders (mistakenly) expect
 - - - What stakeholders can expect with good Organizational Change Management activities like: targeted communications, focused education and training, and reliable assessments
 - What actually happens in most cases

DeployBot: handover deployment to devs



得到的好处

1. 快速获得E2E测试环境
2. 通过持续集成工具做一键式自动化部署
3. 团队可以轻松获得这些能力，几乎不依赖运维

-2012

1. 部署仍然需要一定的权限，经过“批准”
2. 对于单块应用，维护成本高，部署上线的时间仍然很可观

持续交付

- 软件开发原则，软件可以在任何时刻发布到产品环境。

- Martin Fowler

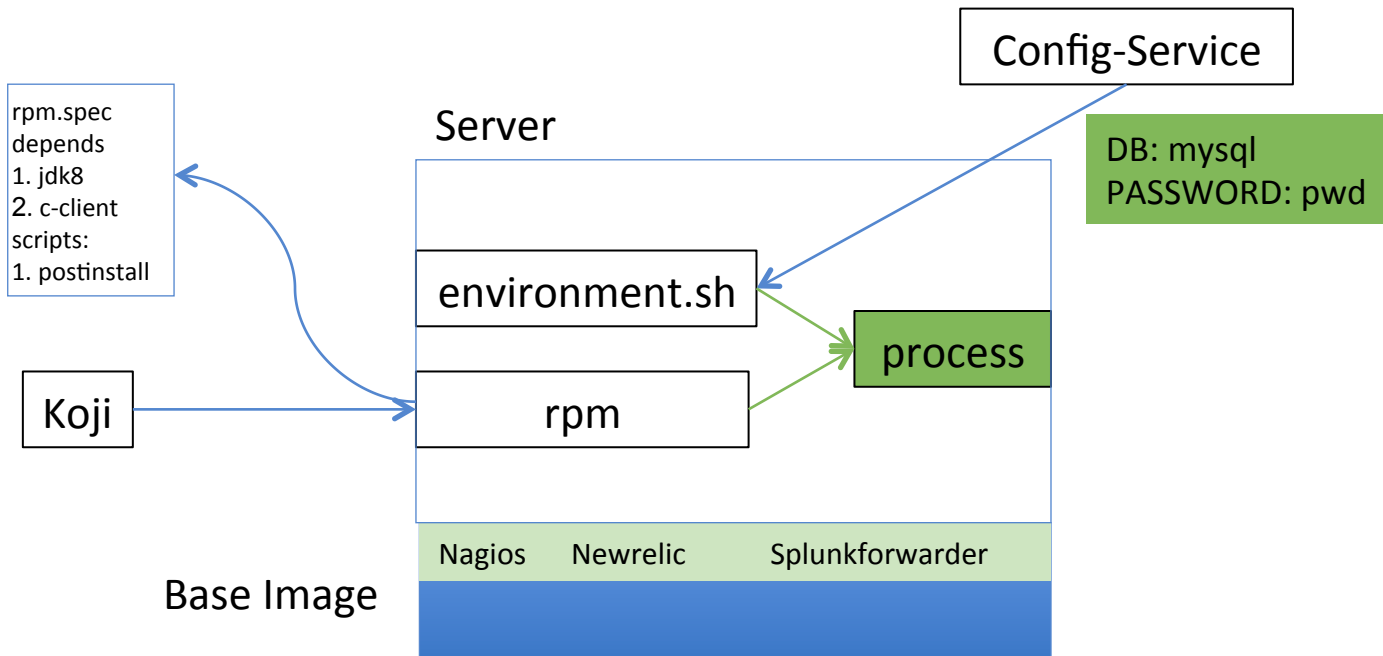
- 目的是减小交付用户需求的成本，时间。

- Jez Humble

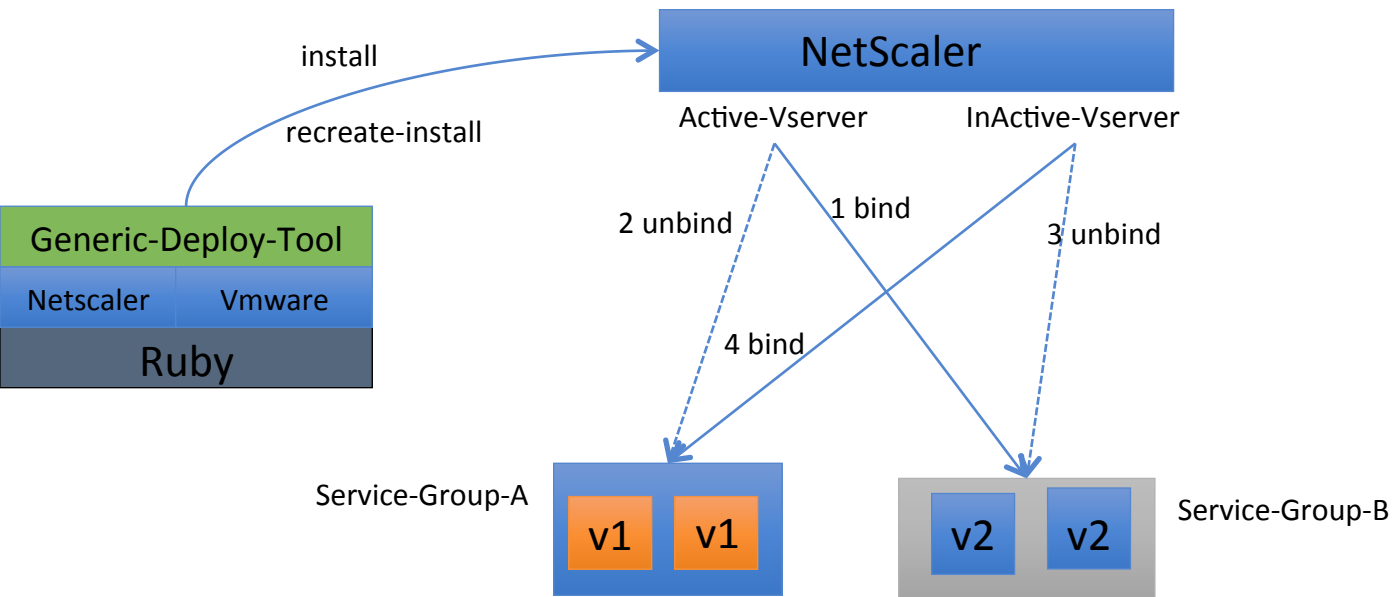


发布从**技术决策**变为**业务决策**

标准化部署方式(In DC)



标准化部署方式(In DC)



流水线案例

🟢 #585 was successful – Manual run from the stage: **Deploy to Inactive Prod**

Stages & jobs

- Test and publish test RPM
 - ✔ Create RPM
 - ✔ Java Unit Tests
 - ✔ Pact Tests
 - ✔ Upload dependency file
- Deploy
 - ✔ Deploy to EC2
- E2E tests
 - ✔ Compare Old And New Sold Results
 - ✔ Run tests on EC2
- Deploy to Inactive Prod
 - ✔ Deploy to inactive prod

Build summary Tests Commits Artifacts

Build result summary

Details

Completed 04 Mar 2016, 12:23:55 PM – 1 v

Duration 43 minutes

Labels None ✎

Show more

0	0
New failures	Existing failures

Write a comment...

微服务

- 单一应用程序划分成一组小的服务
- 服务运行在其独立的进程中
- 服务与服务间采用轻量级的通信机制互相沟通
- 独立部署，自治，去中心化

采用/移植微服务架构

1. 单块应用逐步解耦为微服务(绞杀者模式)
2. 新的服务直接采用微服务架构

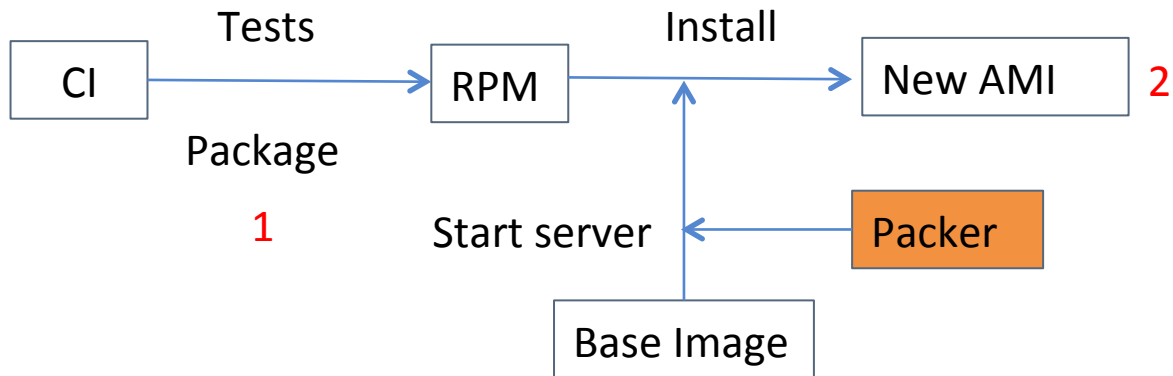
-2013

1. 基础设施的初始配置仍需运维帮助
2. 服务过多，基础设施增长速度快，需控制成本

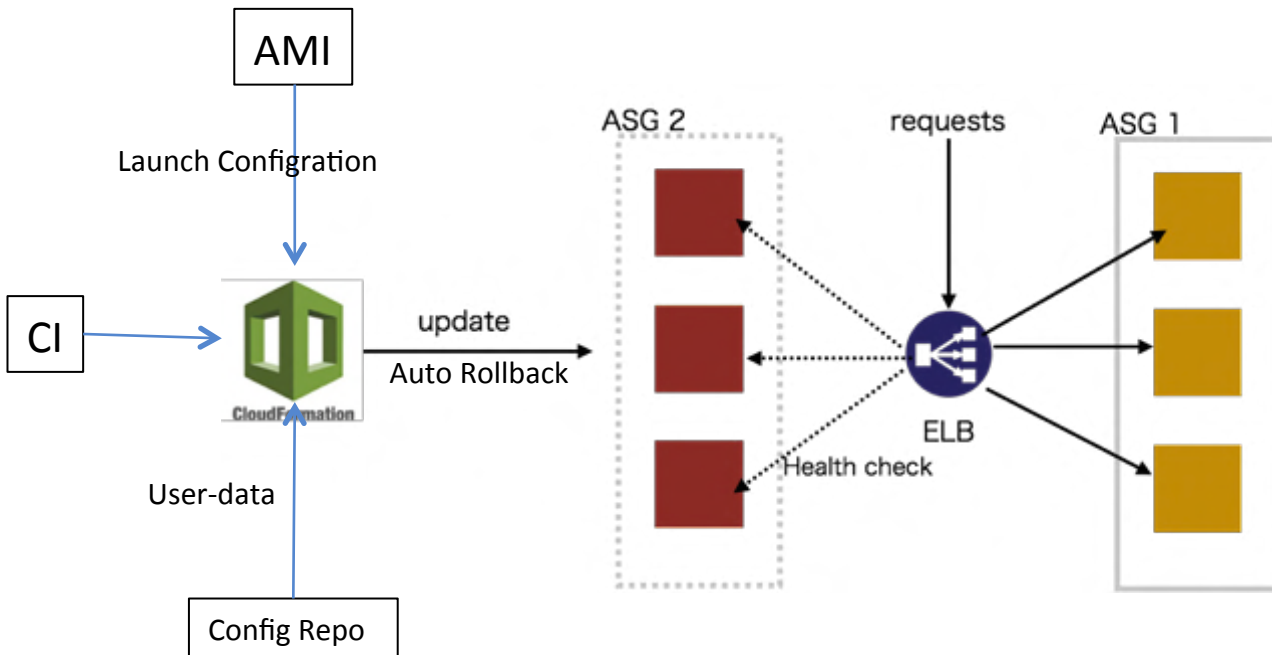


Migrate to AWS

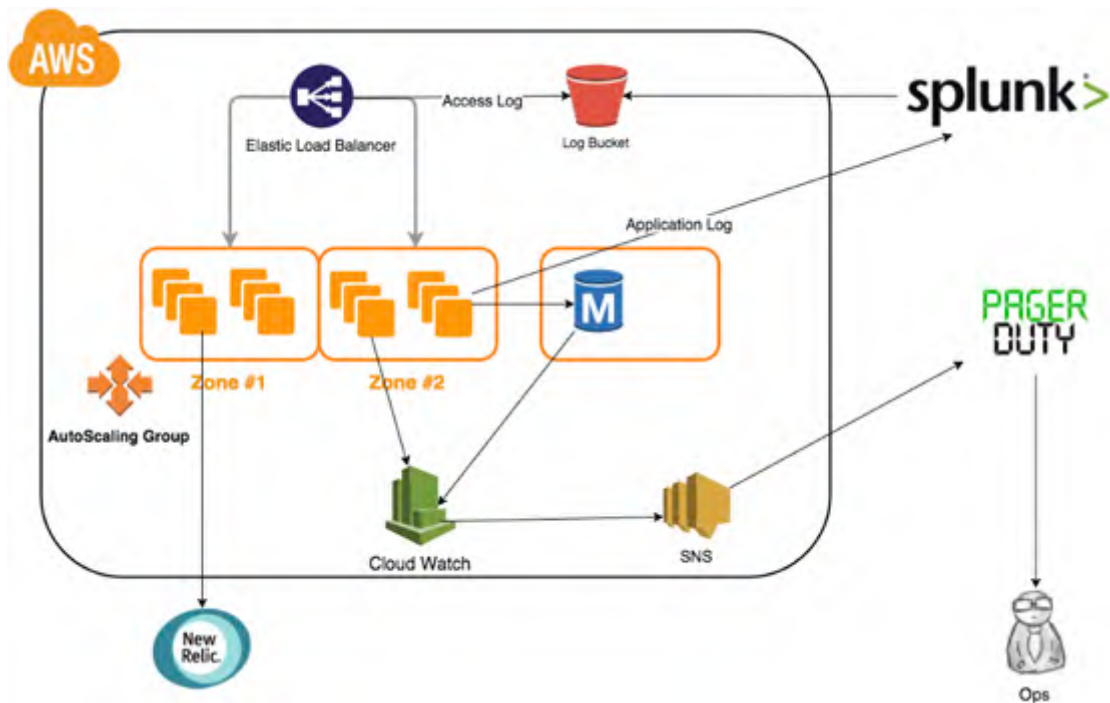
新的打包方式



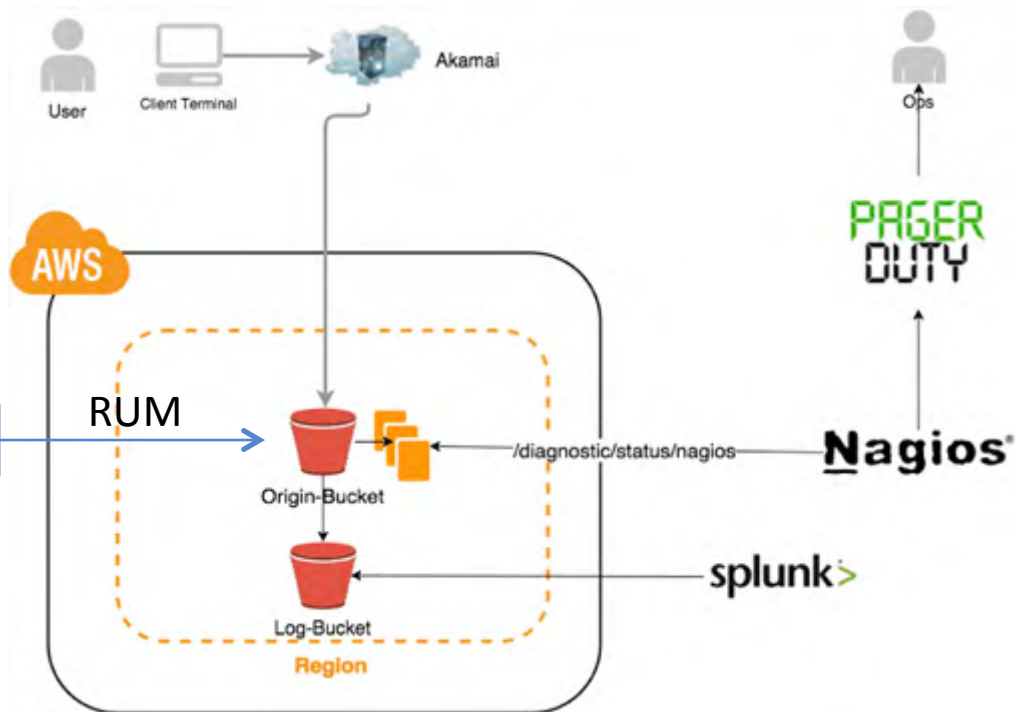
基于CloudFormation的不可变部署



高可用/自恢复的架构



前后端分离



持续部署

Stages & jobs

- Build and Test**
 - Build, test
- Deploy to Staging**
 - Deploy to staging
- Deploy to production**
 - Deploy to production
- Performance Test for Prod**
 - Performance Test for Production
- Upload Dependencies**
 - Upload bower dependencies
 - Upload npm dependency

Build summary Tests Commits Artifacts Logs Metadata

Build result summary

Details

Completed 29 Jul 2016, 3:34:59 PM – 6 days ago

Duration 41 minutes

Labels None

Show more

Write a comment...

Code commits



-2015

1. 可移植性
2. Dev/Prod Parity
3. AMI构建耗时/耗钱



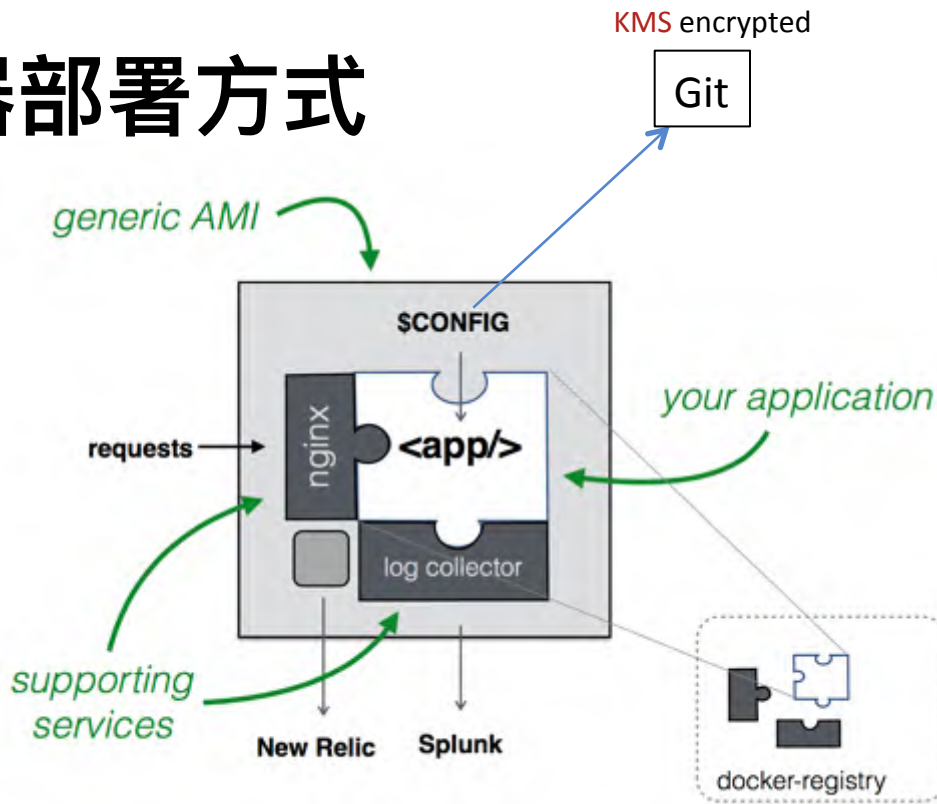
Docker! Docker! Docker!

12factor apps

- Codebase
- Dependencies
- Config
- Backing services
- Build, release, run
- Processes
- Port binding
- Concurrency
- Disposability
- Dev/prod parity
- Logs
- Admin processes

<https://12factor.net/>

容器部署方式



类paas的部署工具



```
app:
  image: 'iambowen/ciao:alpine'
  health_check:
    path: "/"
aws:
  region: ap-southeast-2
  vpc: vpc-f6a76c92
  instances:
    max: 1
    type: t1.micro
    subnets: ...
  auto_scaling:
    timeout: PT10M
  load_balancer:
    subnets: ...
    scheme: internet-facing
  listeners:
    80:
      to: 80
      protocol: http
```

Authenticate

CloudFormation

- Immutable
- Blue/Green
- 0-Downtime
- Auto Rollback

Deploy

容器化后的流水线

🟢 #100 was successful – Manual run from the stage: **Deploy to Production** by

Stages & jobs
Test and Package
🟢 Package
🟢 Testing
🟢 Upload dependencies files
Build Docker Image
🟢 Build Docker Image
Deploy to Preprod
🟢 Deploy to Preprod
Deploy to Production ⏸
🟢 Deploy to Production


Build summary Tests Commits Artifacts

Build result summary


Details

Completed 19 Feb 2016, 3:07:52 PM – 3 weeks ago

Duration 29 minutes

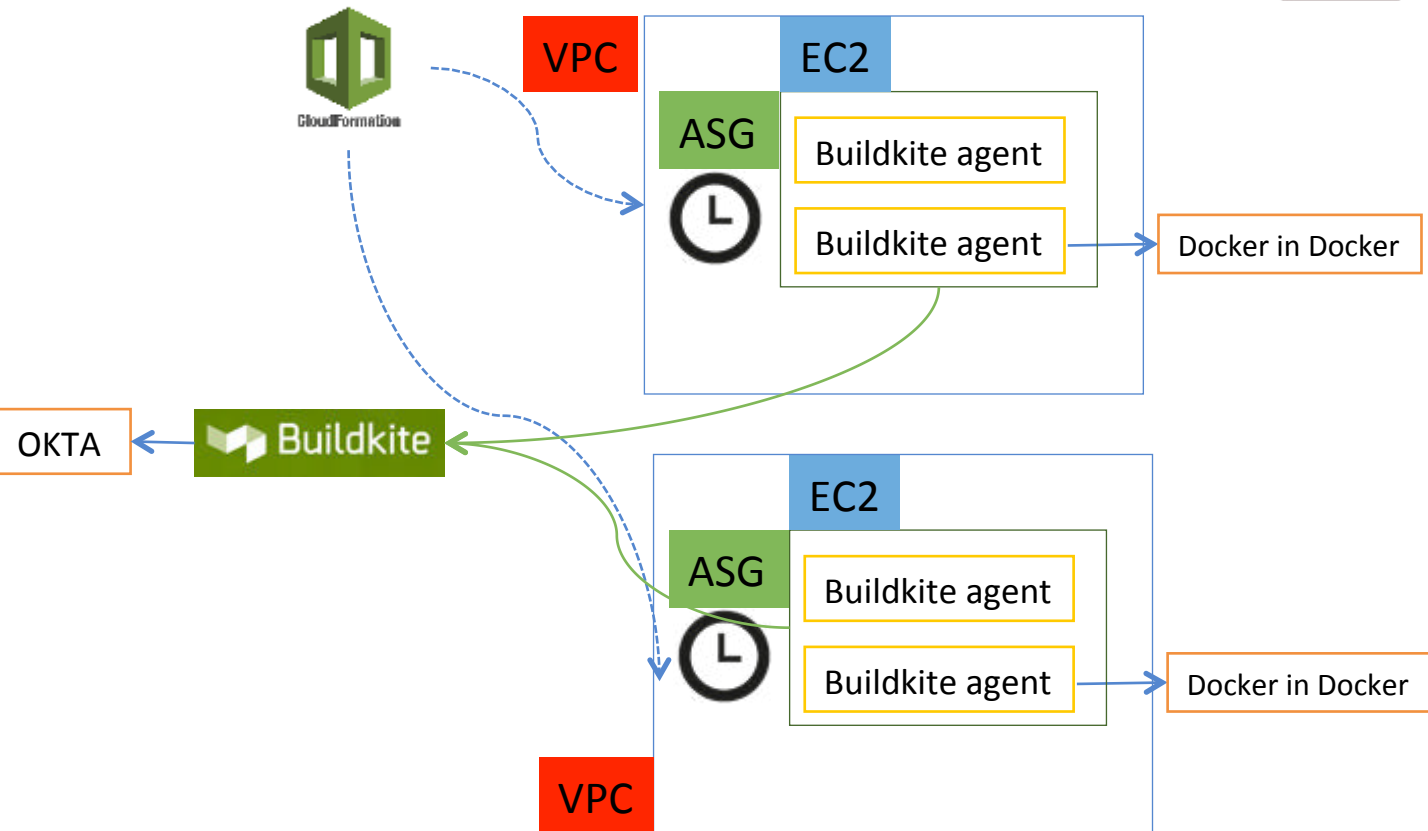
Labels None 

Show more

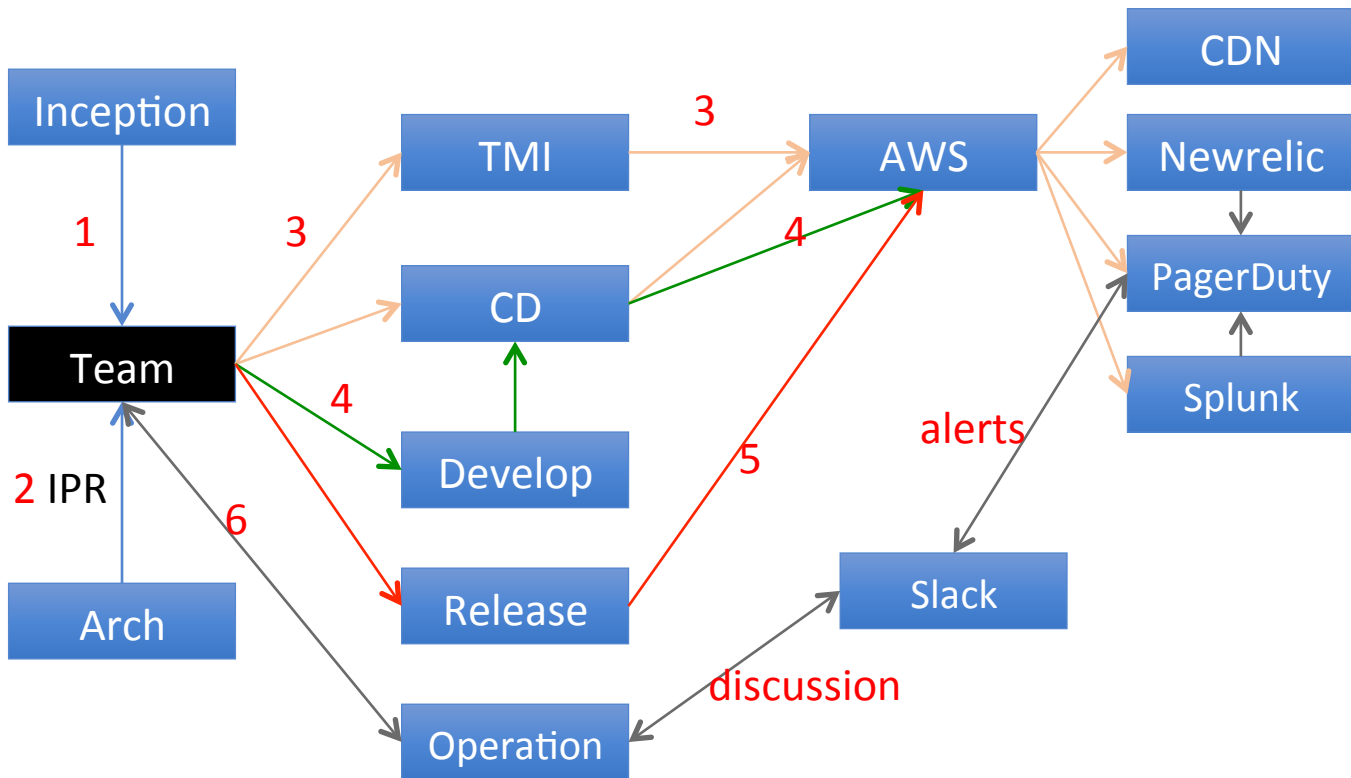
 Write a comment...



保证流水线的高可用性



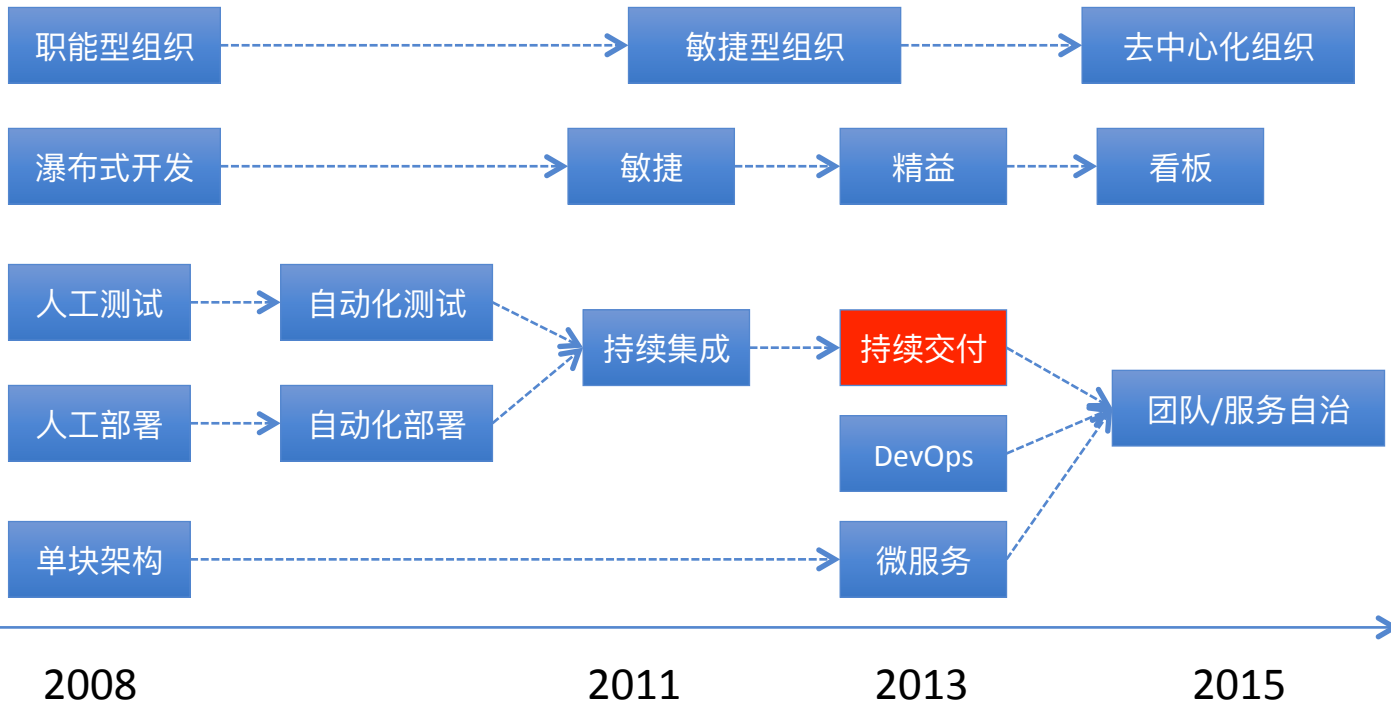
Build It, Run It – 服务/团队自治



Wrap UP

<http://www.yunweipai.com/archives/13501.html>

路漫漫其修远兮



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➔ 3 DevOps转型的一些建议

4 What's Next

自动化测试是前提



自动化用**软件工程**的思维自动化

以持续交付为目标

尽一切可能标准化

重视对人的培养和分享的文化

1. Embedded Ops -> CD
2. Pairing -> Cross Functional
3. On-Call -> Responsibility

<https://www.usenix.org/conference/srecon17asia/program/presentation/contad>

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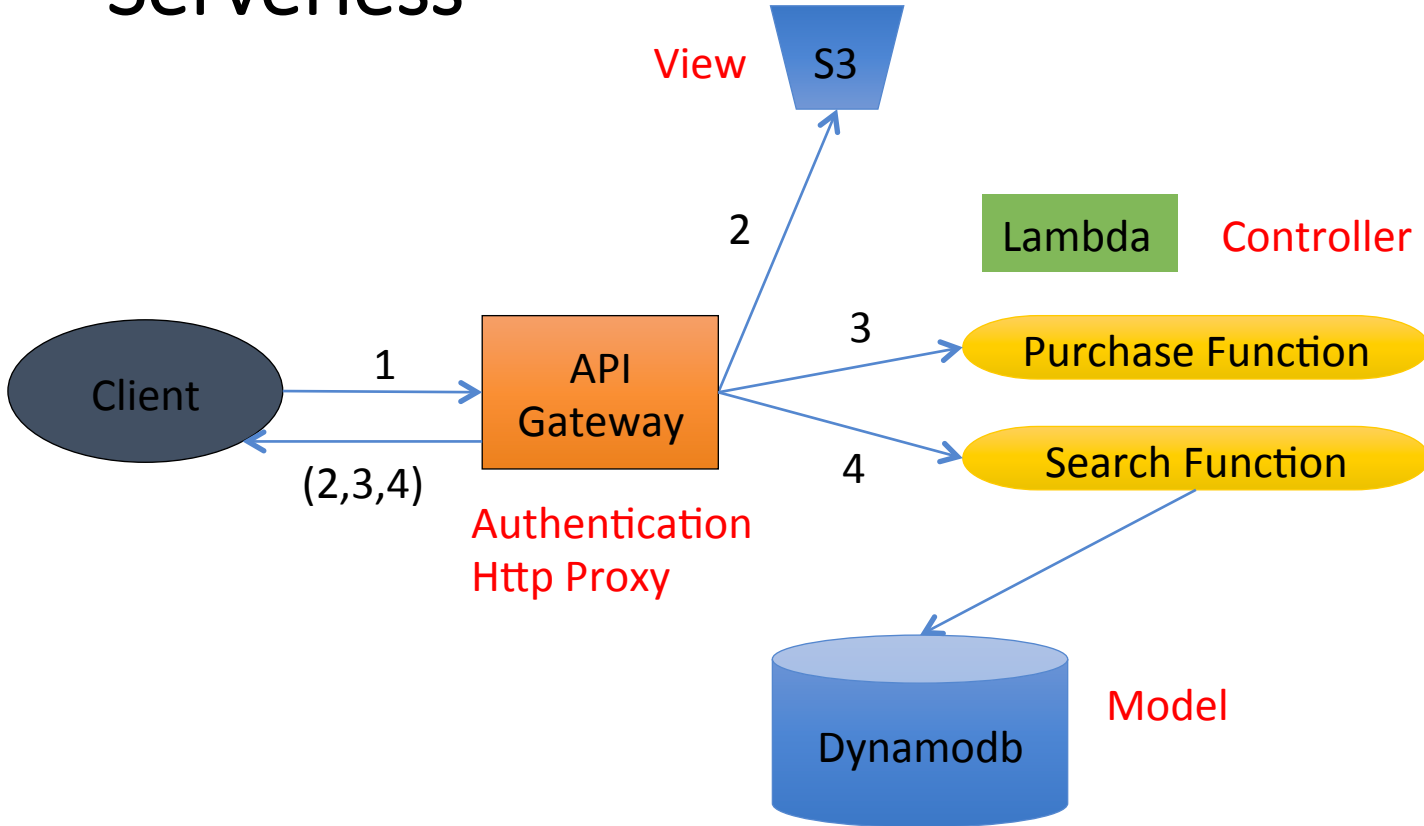
1 What's DevOps

2 REA的DevOps之路

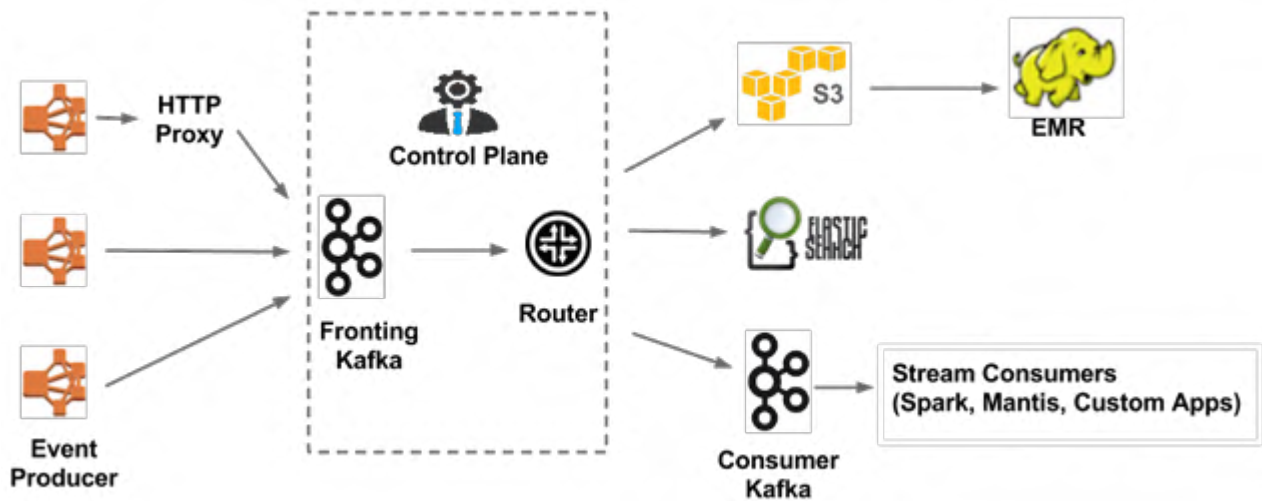
➔ 3 DevOps转型的一些建议

4 What's Next

Serverless



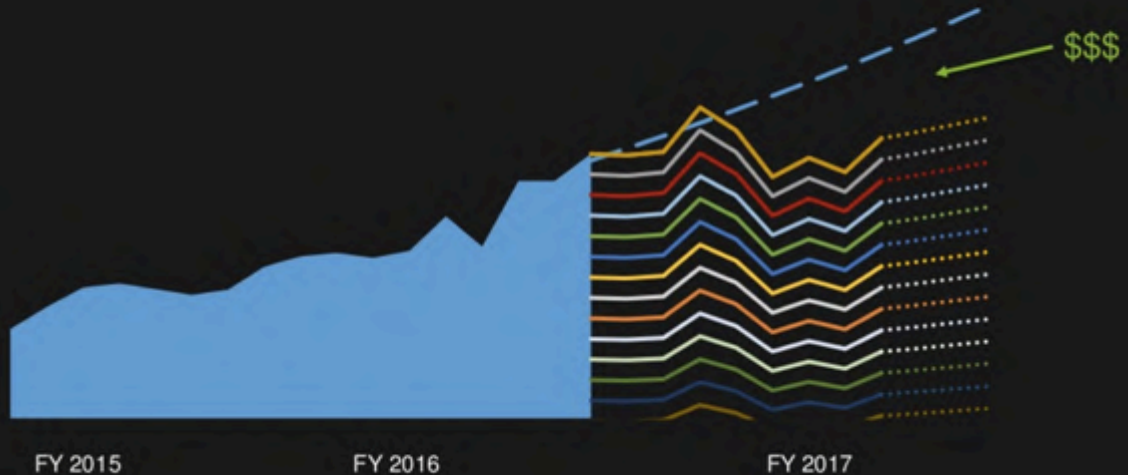
SRE, e.g The Data Pipeline



<https://medium.com/netflix-techblog/evolution-of-the-netflix-data-pipeline-da246ca36905>

DevOps other Silo, e.g FinOps

Results: Savings!!!



<https://www.slideshare.net/AmazonWebServices/finops-at-rea-innovation-in-finance-operations>

Thanks & QA



Great Thanks



荣誉出品

高效运维社区

国际最佳实践管理联盟



想第一时间看到
高效运维社区公众号
的好文章吗?

请打开高效运维社区公众号，点击右上角小人，如右侧所示设置就好

