



**RELEASE FAST <sup>®</sup> OR DIE!**

世界领先的DevOps平台



-- 官方微信公众号 --



- JFrog 公司和产品介绍
- 产品演示 ( Jenkins , Ansible , Junit 等DevOps工具集成 )
- 大客户案例分享



- 全球唯一的全语言包管理平台
- CNCF 金牌会员
- 开源版：12万个企业用户
- 地点：硅谷，以色列，法国，**中国北京市**
- 400+员工
- 5000+ 企业付费用户
- 世界500强 93%以上已购买
- [www.jfrogchina.com](http://www.jfrogchina.com)



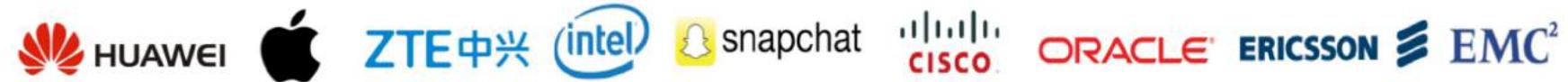
# 全球用户 5000+



## 互联网 & 软件



## 科技 & 电信



## 银行 & 金融



## 工程 & 航空



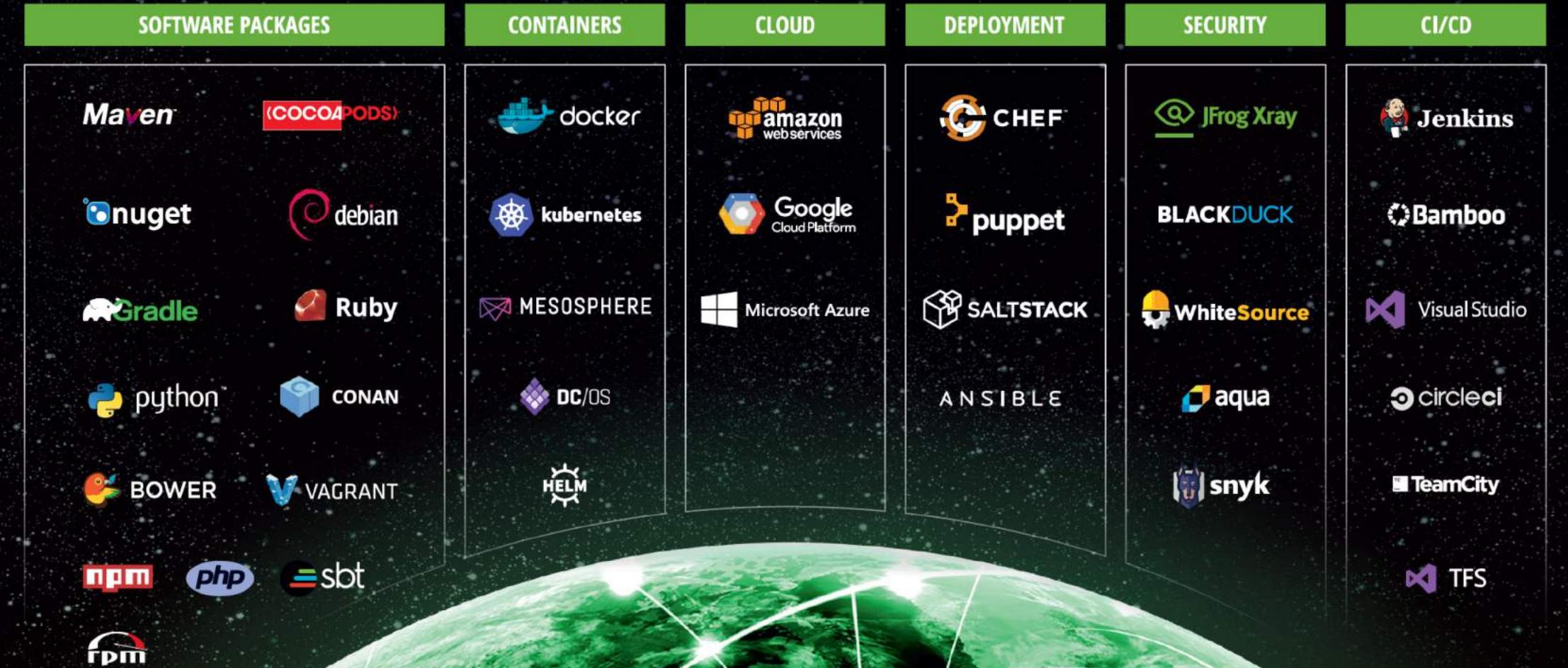
## 零售 & 消费



## 教育 & 研究



# JFrog DevOps 生态





## 全语言制品仓库

- 支持Maven , Docker , NPM等
- 支持产品文档等任意类型文件

## DevSecOps漏洞扫描

- 支持自动化的依赖漏洞扫描
- 自动生成漏洞报告
- 全球最大CVE漏洞库

## CICD 过程可视化

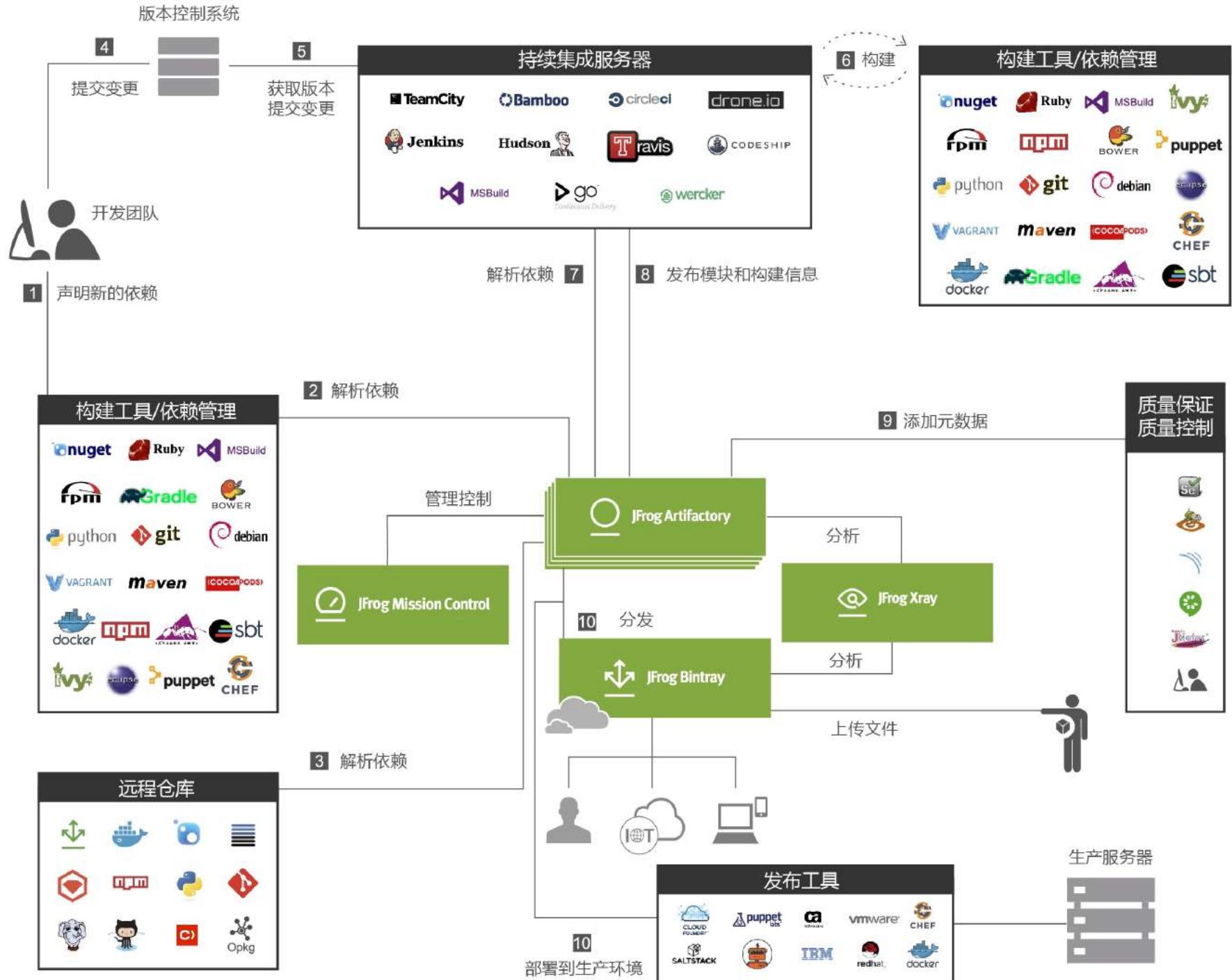
- 和主流工具集成Jenkins , Jira Ansible , Kubernetes 等等
- 记录软件交付的元数据
- 使用图标将 CICD元数据可视化

## 制品多地分发

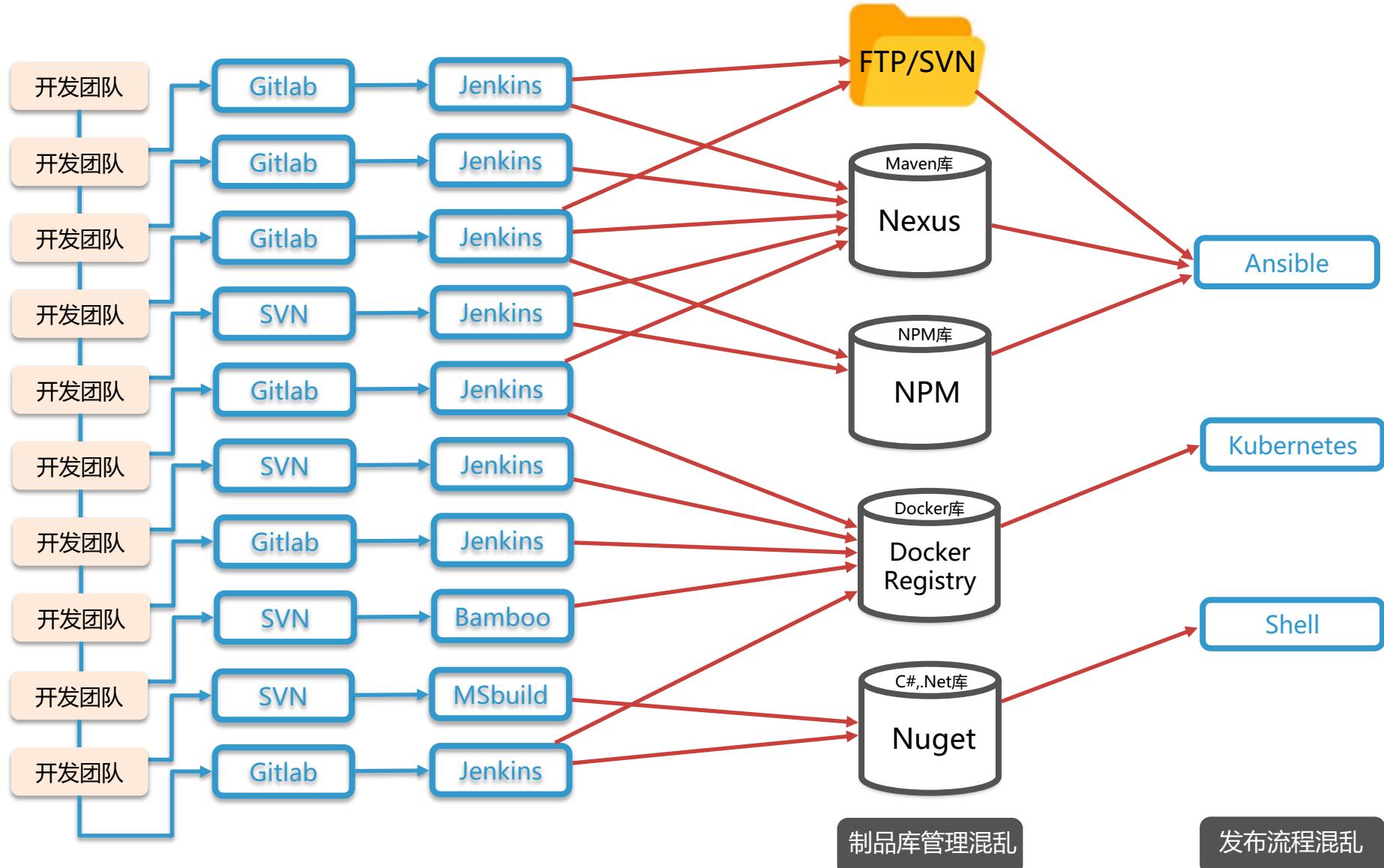
- 跨研发中心协调开发
- 多机房部署制品



# JFrog DevOps



# 痛点 - 制品库管理混乱, 发布流程混乱



容易  
宕机

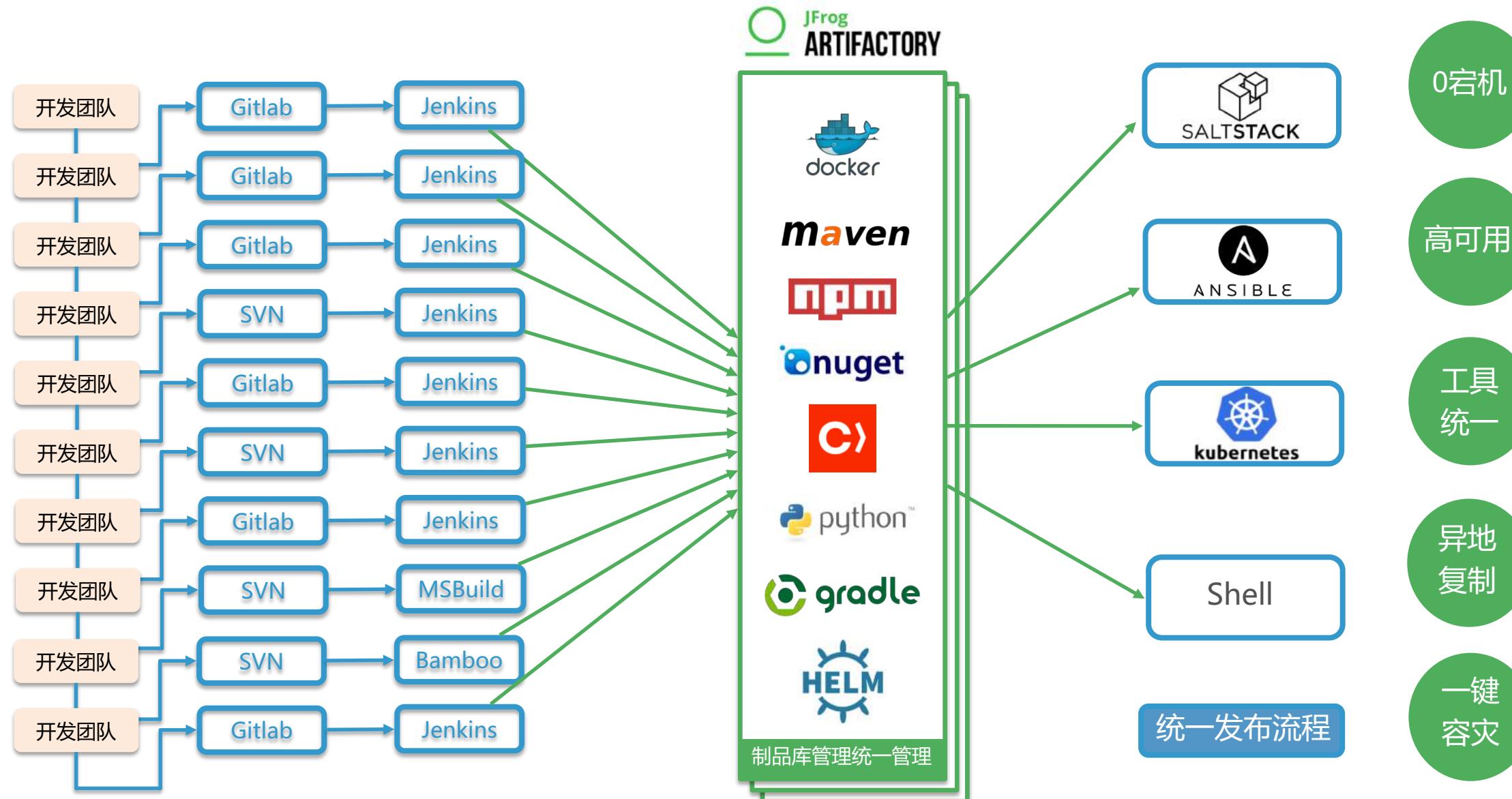
不支持  
高可用

工具碎  
片化

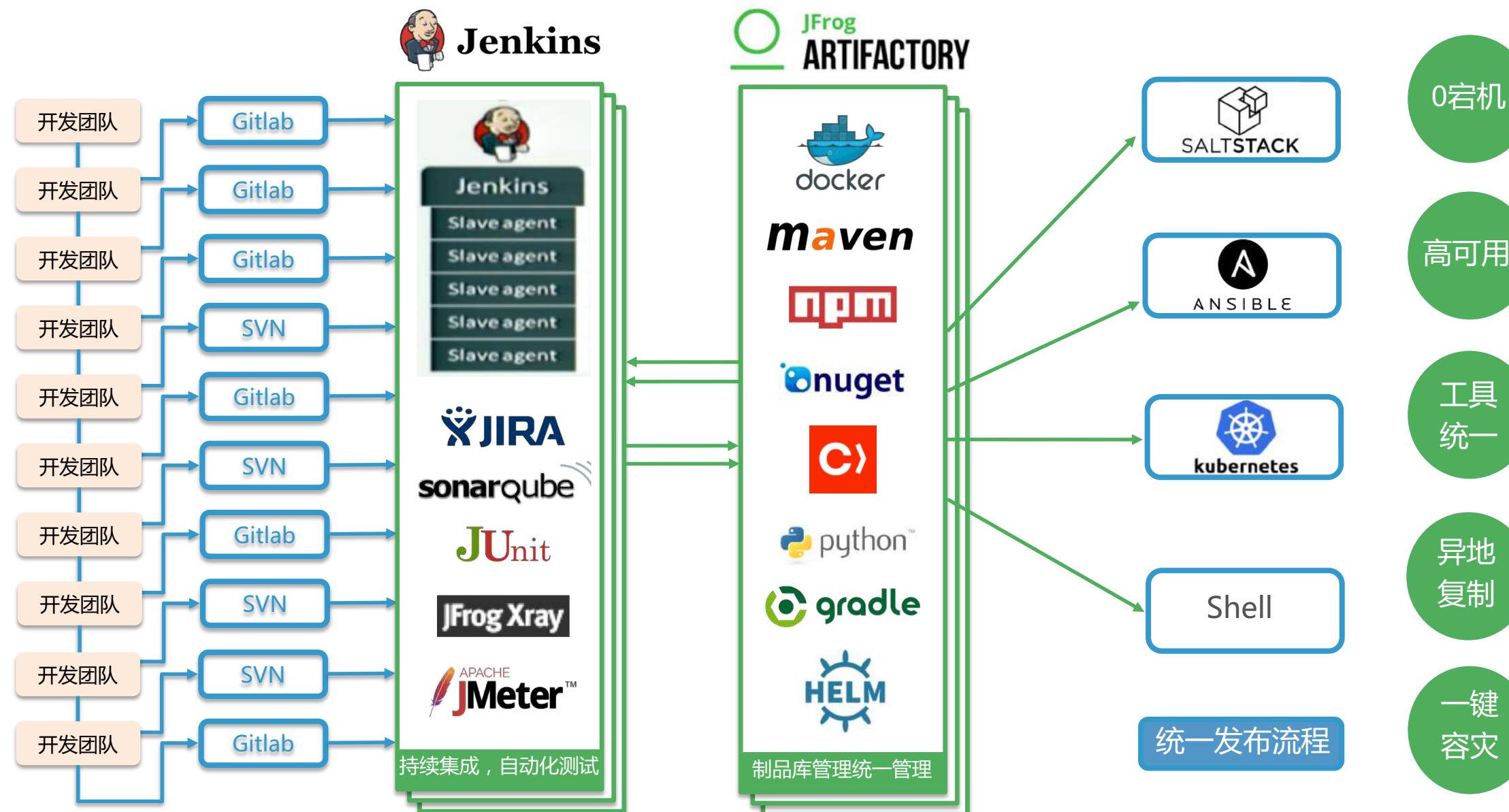
不支持  
多地复制

不支持  
容灾

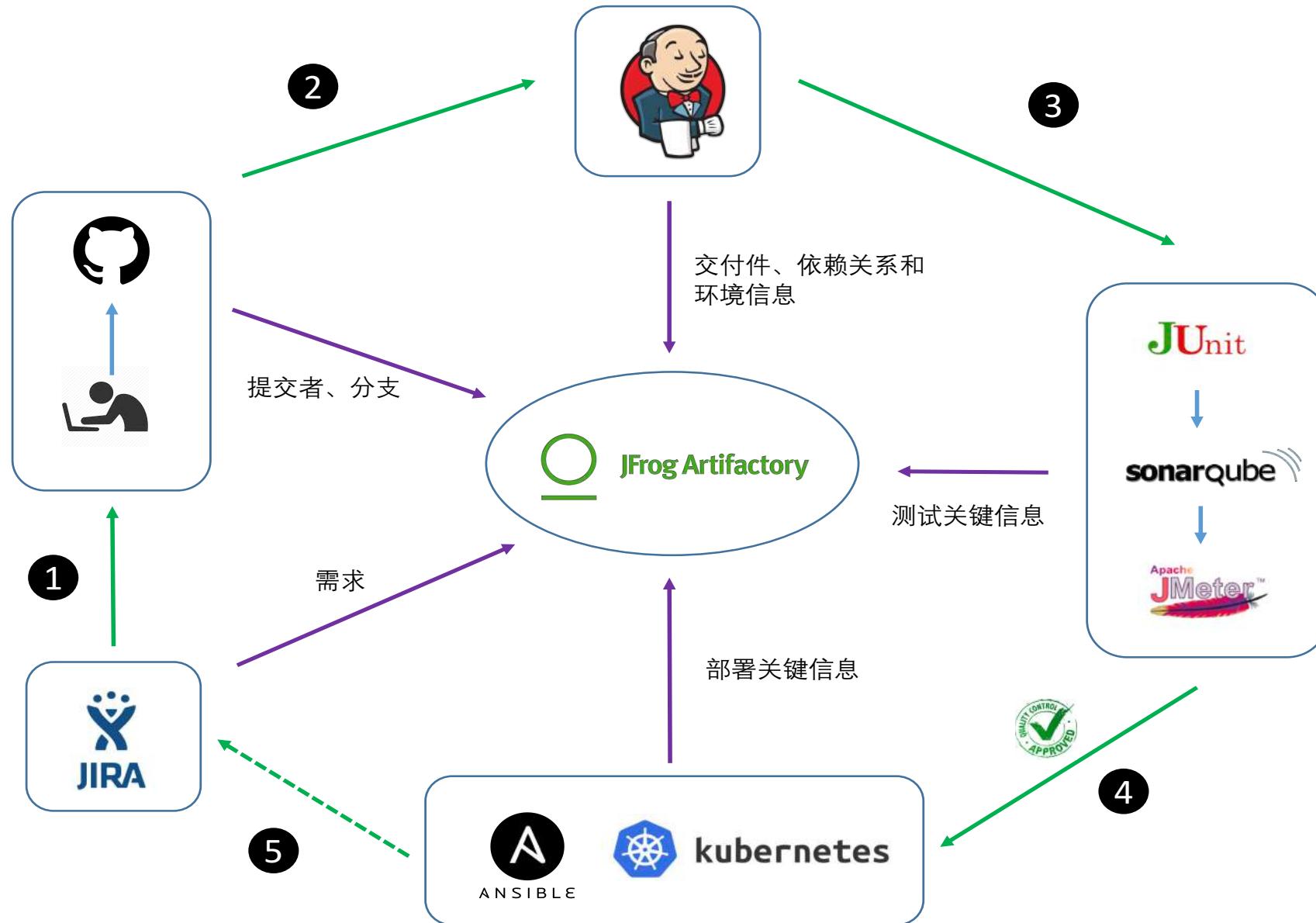
# 使用 Artifactory 管理所有语言的制品仓库



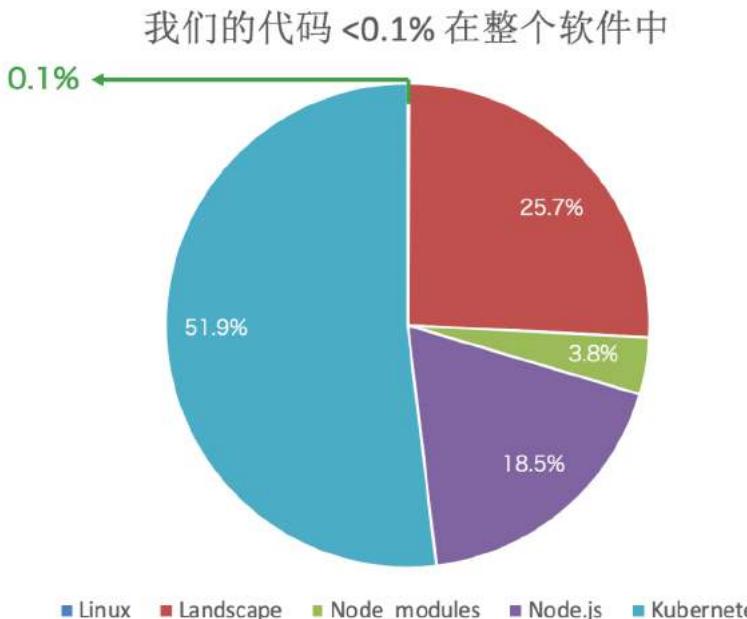
# CI/CD 统一流程管理



# 统一软件交付流水线数据展示



## Open Source != Secure



30 % Docker 镜像包含已知漏洞

14 % Npm package 包含已知漏洞

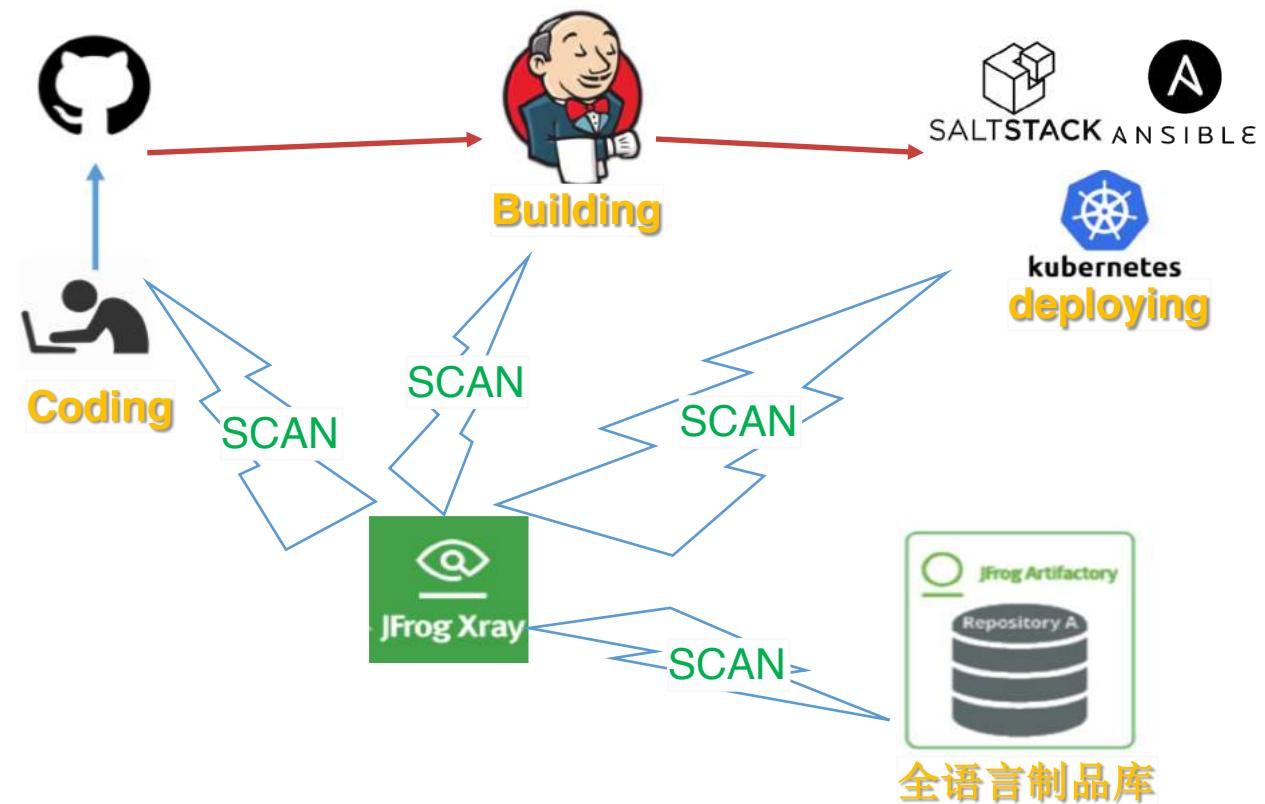
59 % Maven 依赖包含已知漏洞

### 扫描完整性

- 全球最大漏洞数据库，支持 **NVD**、**VulnDB** 两大漏洞扫描
- 支持 **Maven**、**npm**、**Debian**、**NuGet**、**Pypi**、**Docker** 等制品扫描  
对接其他漏洞数据源

### 功能特性

- 支持对多层组件包的深度分解检测
- 具备强大的**影响性分析能力**
- 可定制的安全策略
- 可自动生成漏洞报告
- 可提供漏洞修复建议
- 高可用部署方式



# 漏洞扫描Xray ( DevSecOps )



## 漏洞影响范围分析

JFrog Xray  
Package 'docker-app'  
Violation on docker-app:60  
Impact  
docker-app:60 >  
↳ docker-app:60  
↳ sha256\_c1f9524f1dc923d9fe/a4c47a46e36b38098ec3...  
↳ swampup.war  
↳ m org.codehaus.plexus:plexus-utils:1.5.1

## 自动生成安全风险报告



### Security Export

Thu May 30, 2019

Exported by: admin

Package type: Docker

Component name: docker-app:60

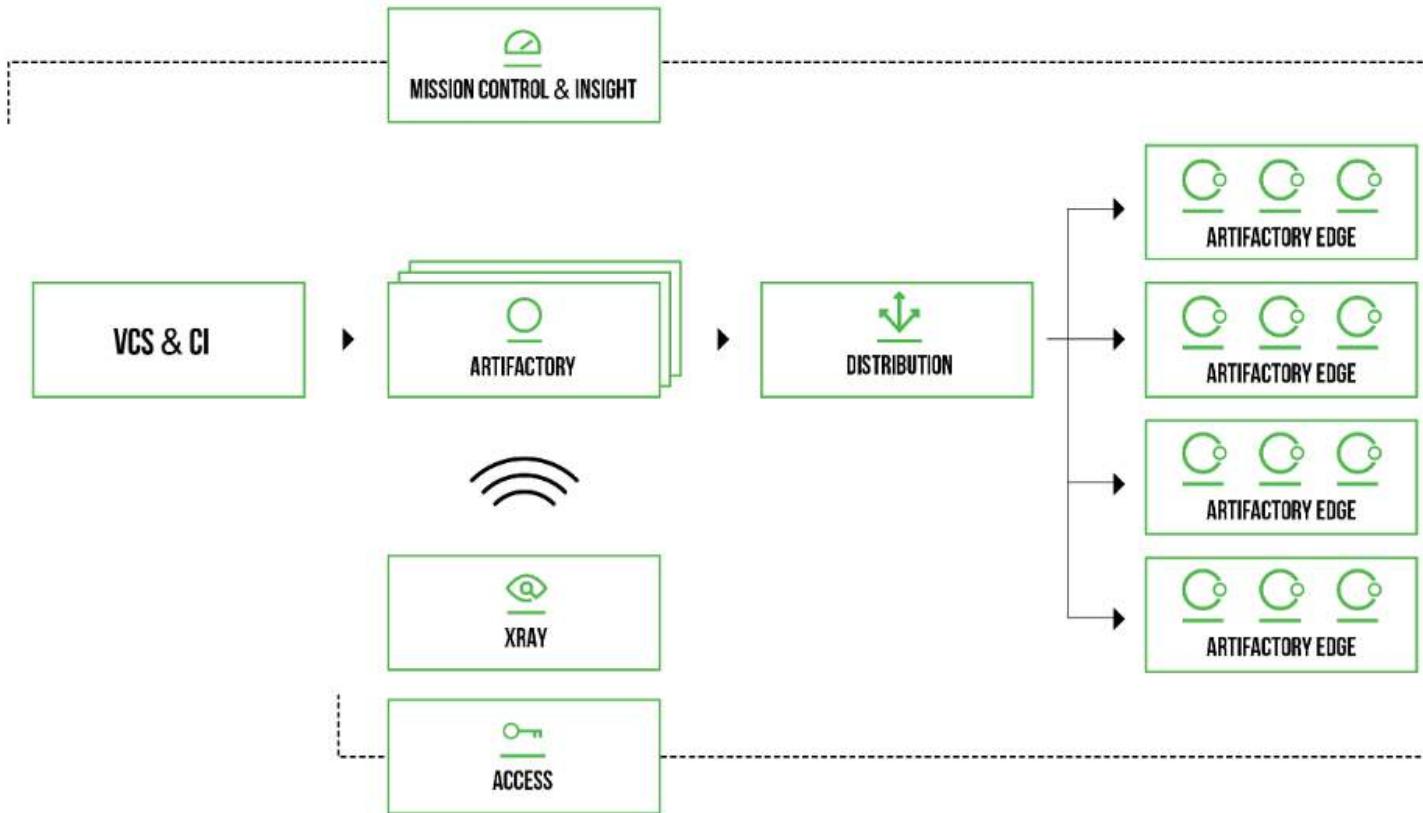
Summary	Severity	Type	Provider	Component	Infected Version	Fix Version	Edited
libseccomp before 2.4.0 did not correctly generate 64-bit syscall argument comparisons using the arithmetic operators (LT, GT, LE, GE), which might able to lead to bypassing seccomp filters and potential privilege escalations.	High	security	JFrog	ubuntu:bionic:libseccomp	All Versions		2019-05-14T09:47:07Z
In Eclipse Jetty Server, versions 9.2.x and older, 9.3.x (all non HTTP/1.x configurations), and 9.4.x (all HTTP/1.x configurations), when presented with two content-lengths headers, Jetty ignored the second. When presented with a content-length and a chunked encoding header, the content-length was ignored (as per RFC 2616). If an intermediary decided on the shorter length, but still passed on the longer body, then body content could be interpreted by Jetty as a pipelined request. If the intermediary was imposing authorization, the fake pipelined request would bypass that authorization.	High	security	JFrog	org.eclipse.jetty:jetty-http	< 9.2.25.v20180606.9.3.0.M0 <= Version < 9.3.24.v20180605.9.4.0.M0 &gt;= Version < 9.4.11.v20180605	9.2.25.v20180606.9.3.24.v20180605.9.4.11.v20180605	2018-10-04T02:46:23Z
In occurs 6.0, there is a format string vulnerability in the fzr_entry function. A crafted input will lead to a remote arbitrary code execution attack.	High	security	JFrog	ubuntu:bionic:ncurses	All Versions		2019-05-14T09:46:54Z
Incorrect sanitization of the 302 redirect field in HTTP transport method of apt versions 1.4.8 and earlier can lead to content injection by a MITM attacker, potentially leading to remote code execution on the target machine.	High	security	JFrog	ubuntu:bionic:apt	< 1.6.6ubuntu0.1	>= 1.6.6ubuntu0.1	2019-05-14T09:47:06Z

## 优势:

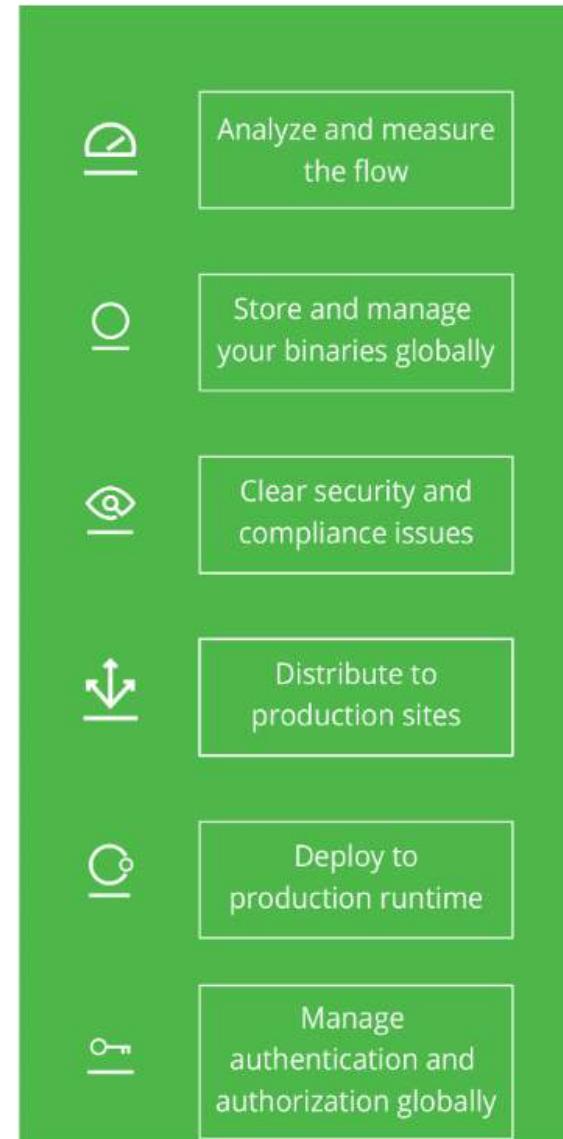
1. 漏洞发现能快速定位影响范围，精准通知到对应责任人。
2. 每日生成安全风险报告，大大减少人工制作报告的时间。

## JFrog **ENTERPRISE+**

### ► DATA CENTER



### ► PRODUCTION



# 交付件 Release Bundle



通过 AQL + Release Bundle 打包所有交付内容：  
程序包，配置文件，数据库脚本，文档，质量元数据，Release Notes 等

The screenshot shows the JFrog Artifactory web interface. On the left is a dark sidebar with navigation links: Home, Artifacts, Packages, Search, Bundles (which is selected), and Admin. The main content area has a header "Release bundles". Below it, there's a table with columns: Versions, Version ID, Creation Date, and Size. Two rows are listed: Version 1.0 (Version ID 2.0, created 15 Mar, 2018, size 531.3 kB) and Version 2.0 (selected). Under "List of artifacts", there's a tree view with "Files" expanded, showing several artifact names. To the right, a detailed view of the selected artifact (curl\_7.26.0-1+wheezy14\_armhf.deb) is shown with fields: Name, Path, Created, Path, and Size. The bottom of the sidebar shows the Artifactory engine version: Artifactory Engine 5.1.0 (Build 3514) (Running on Jetty 9.0.29).

Versions	Version ID	Creation Date	Size
1.0	2.0	15 Mar, 2018	531.3 kB
2.0			

List of artifacts

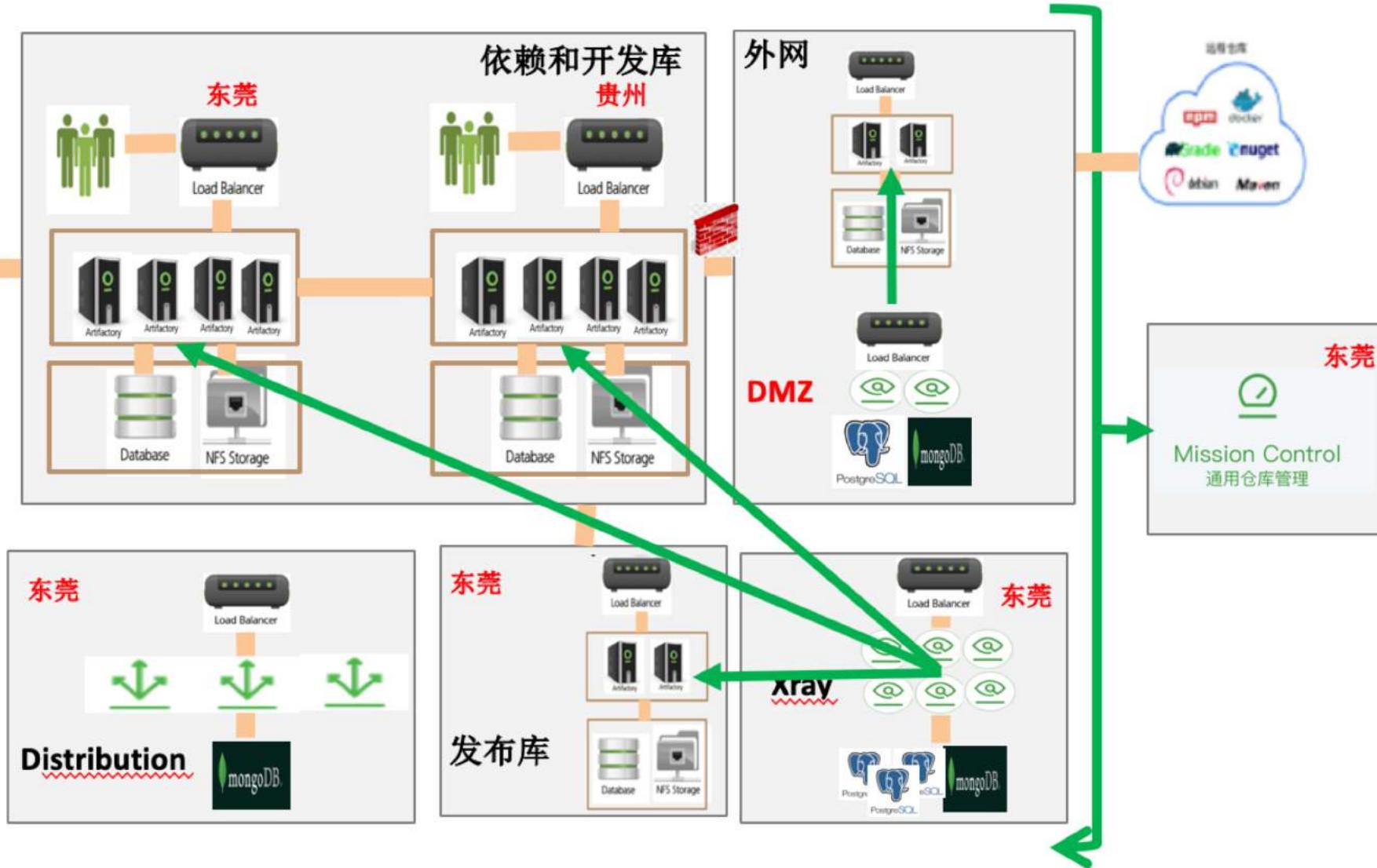
Files

- 1d3dbe8a28c4184e14c829e5c15f73f981fdbf3
- 64a543afbb5f4bf728636bdccbe7a2ed0804adc2
- curl\_7.26.0-1+wheezy14\_armhf.deb
- 71d99629715227ac1069c6e60481997cc384b34780257fed1a9f1a580c2a2282
- 50ea4767a5f36542945019bcfcfb9d115e97ebb
- e3b0c44298fc1c149afb4c8996fb92427ae41e4649b934ca495991b7852b855
- 33b7424294c7bbc8815e7b30875fe15e
- 65af85caa5935240d14ef23a4d734af5bd511fbda938bedc18c8b25d1267b15
- c4974eb590f0e790f3a258a22de9aea97951b8ce176adb412d8a37da50f95cb1
- 746192008f2dc5f45a968907d4c80d11
- d41d8cd98f00b204e9800998ecf8427e
- e3b0c44298fc1c149afb4c8996fb92427ae41e4649b934ca495991b7852b855
- 3970e82605c7d109bb348fc94e9eecc0
- 97206a00e1fe23416a0301f13ead6331f50e734ae13a4e7a6458f6f27422f07e

Name: curl\_7.26.0-1+wheezy14\_armhf.deb  
Path: debian-local/pool/curl\_7.26.0-1+wheezy14\_armhf.deb  
Created: token:replicator  
Path: debian-local/pool/curl\_7.26.0-1+wheezy14\_armhf.deb  
Size: 264598

Artifactory Engine 5.1.0 (Build 3514) (Running on Jetty 9.0.29)

## 部署架构图



## 现状评估

- **访谈计划**
- 产品 | 配置 | 开发
- 测试 | 运维 | 运营
- **现状痛点分析**
- **痛点评分**

## 目标方案制定

- 建设持续评估模型
- 结果导向目标
- 工程能力型目标
- 软件工程软实力提升  
建设计划
- 软件生命周期改造计划

## 试验田实施

- 选择1-3个试点项目
- 分阶段改造
- 持续评估
- 持续改进
- 输出规范
- 内训课程

## 整理落地方案

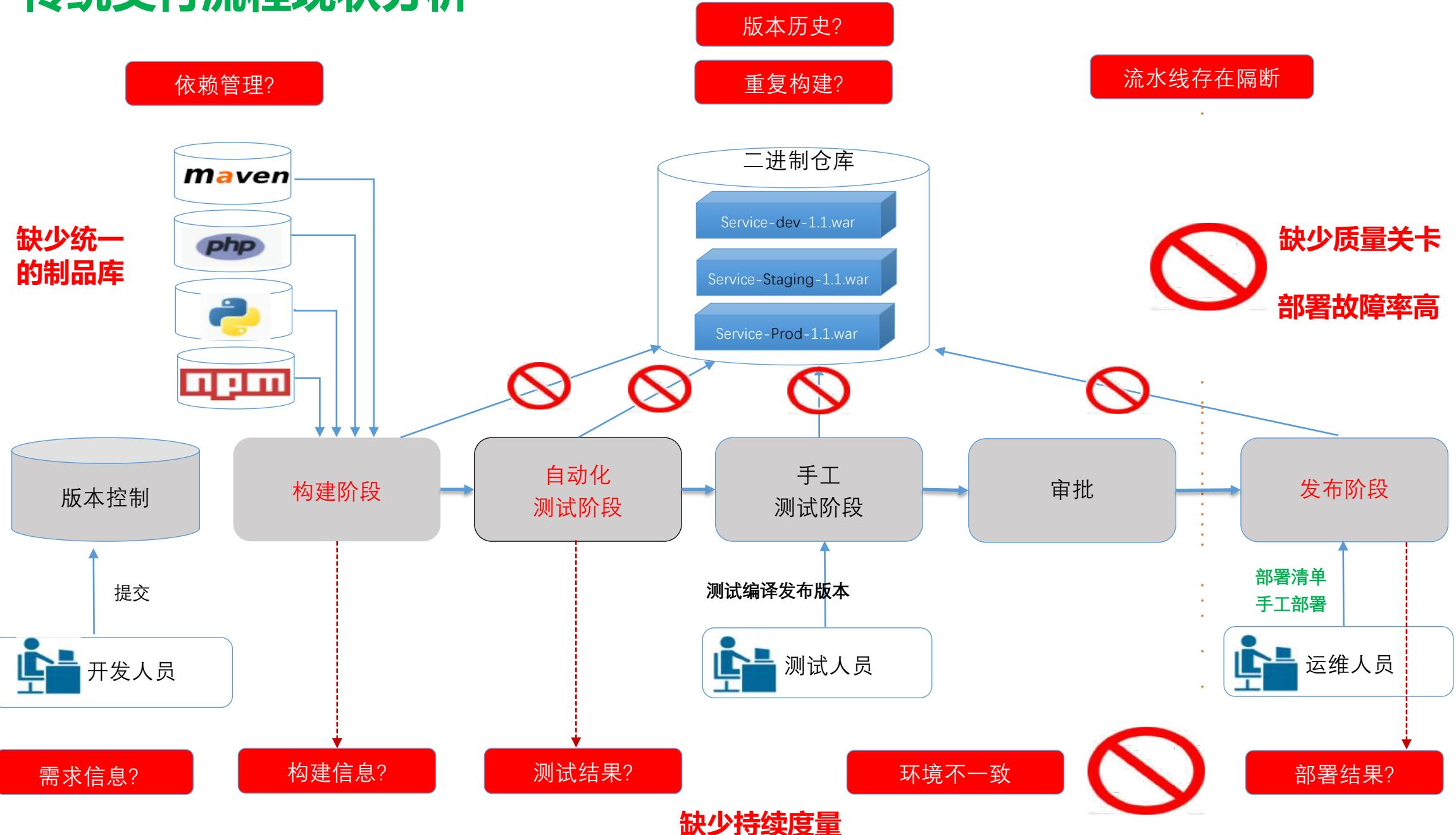
- 按项目分类
- 按项目重要性
- 按项目所处阶段
- 按所处成熟度
- 按技术栈

## 扩展阶段

- 引入新的项目
- 中台建设
- 抽象服务能力
- 门户平台



# 传统交付流程现状分析

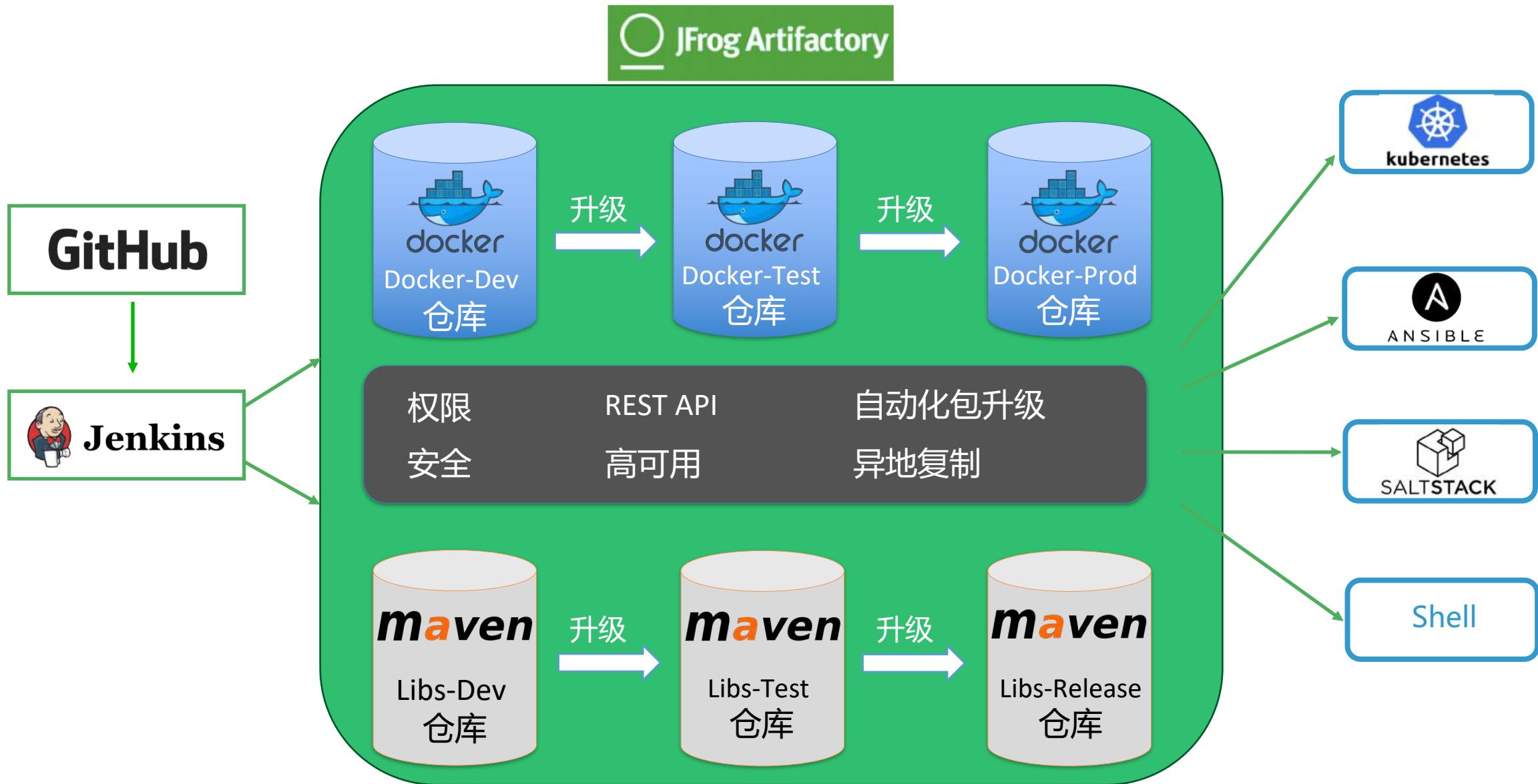


# Metadata 如何助力自动化发布流程 ?

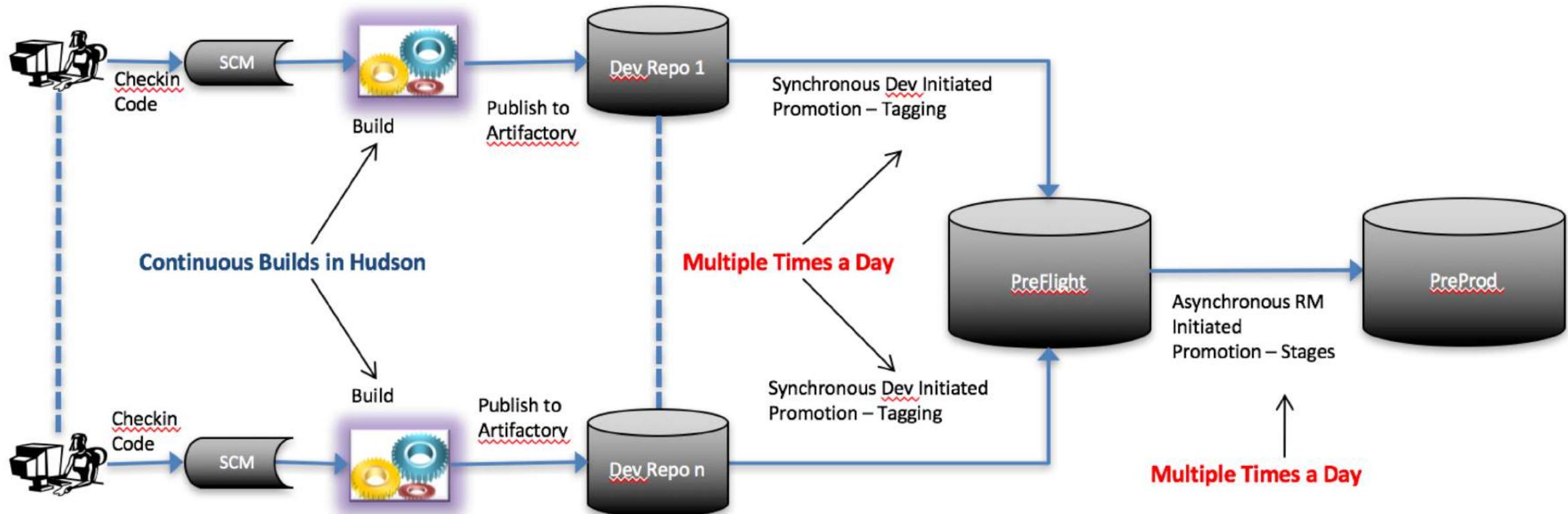


# Metadata 如何助力自动化发布流程？

持续交付流程标准化



# 多团队协作



# 持续交付流水线模型 - 单服务

自动



自动反馈



手工



人工反馈

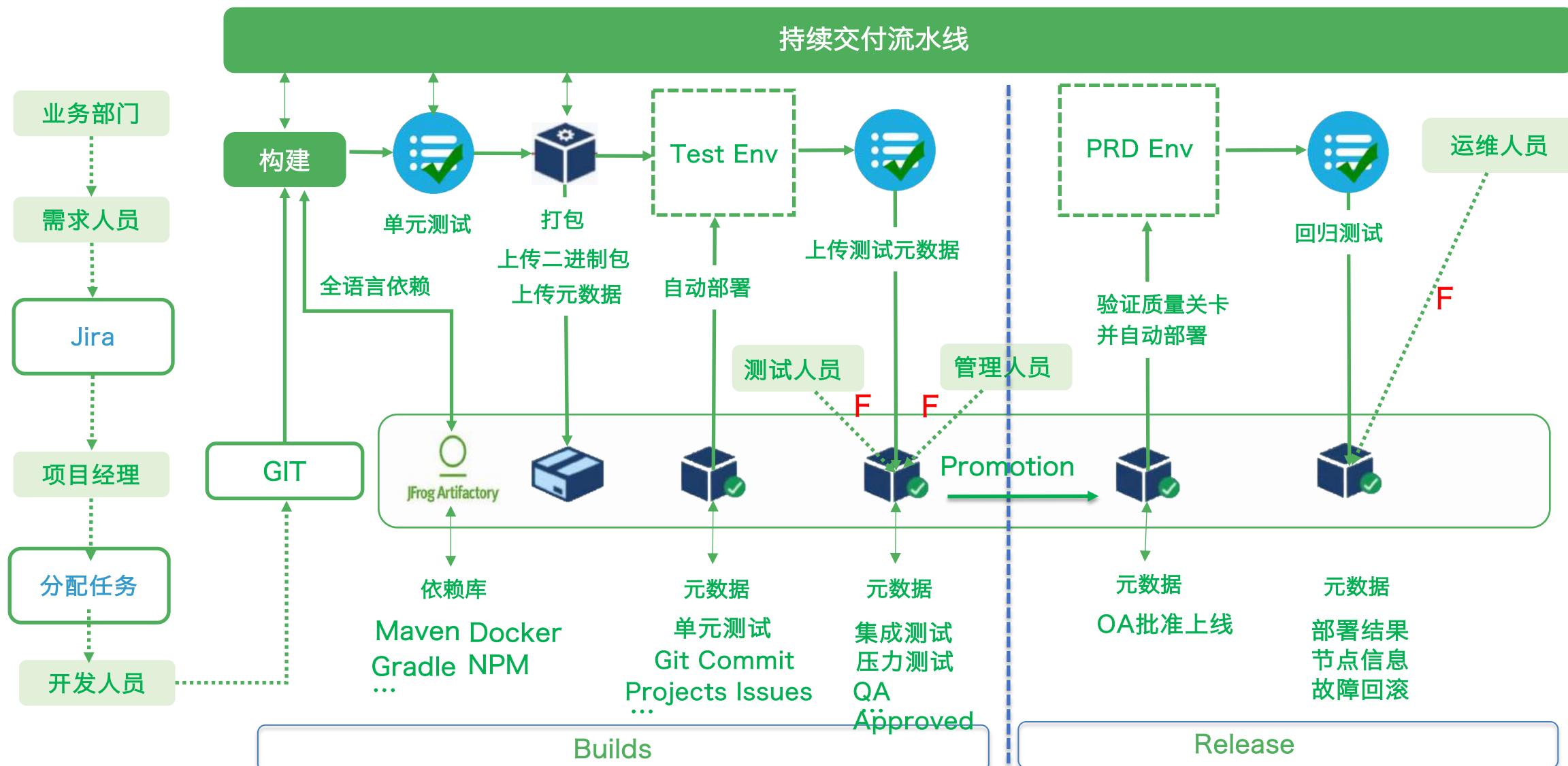


开发

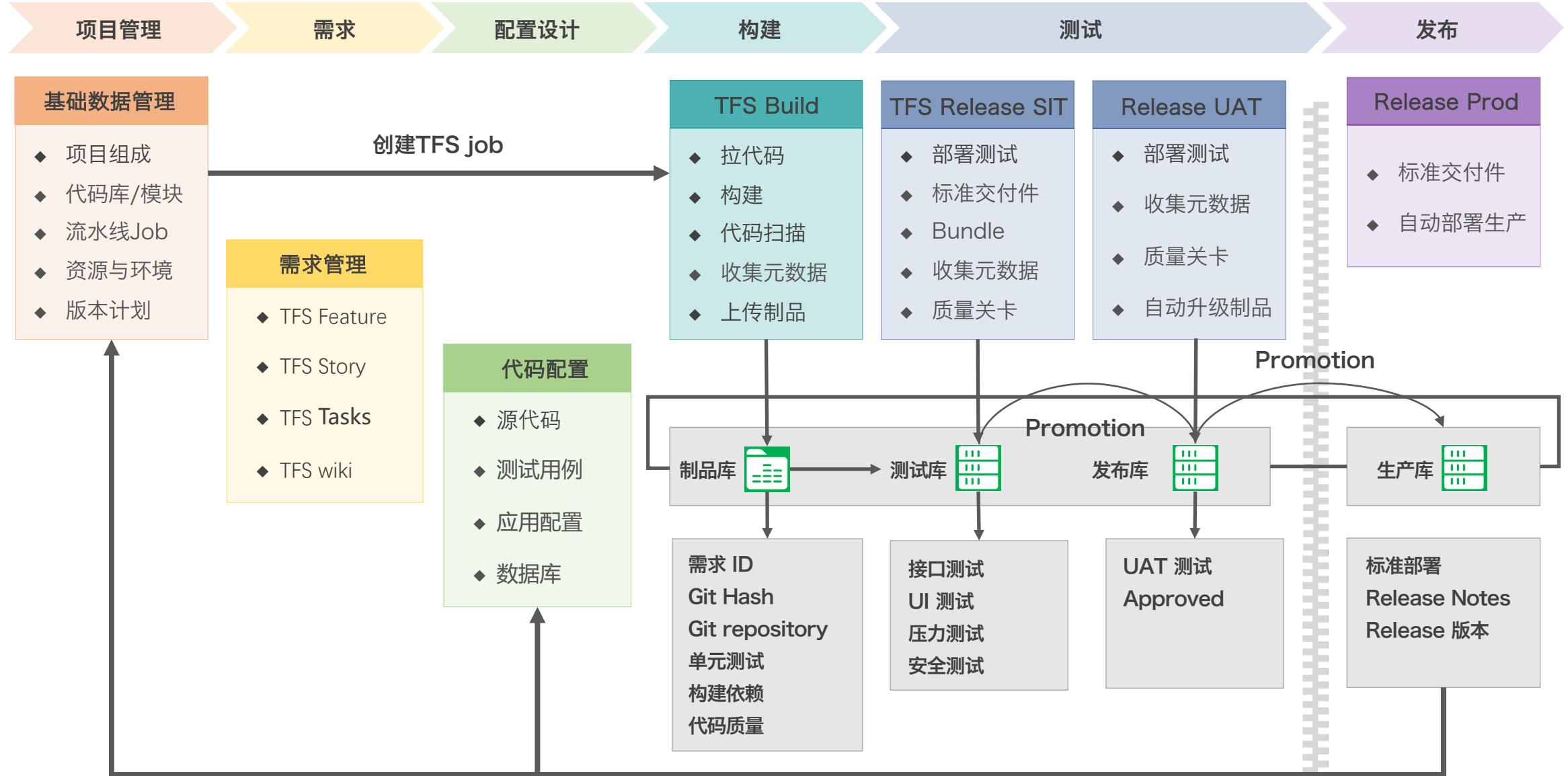
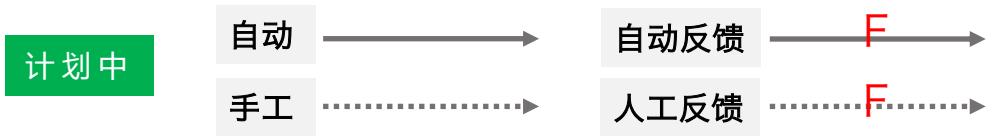
持续集成

持续发布

持续运维



# CICD 建设 Overview



Release Notes

Release Tag

# 交付件分级持续交付模型

周期

weeks

**App-pipeline**

app-bundle-1.0  
 Micro-A-bundle-1.0  
 Micro-B-bundle-2.0  
 Metadata: app-1.0.qa.test.result = OK

UAT -> Pre-Prod->Prod

分级Metadata

days

**Micro-A-pipeline**

Micro-A—bundle-1.0  
 Front-1.0.tar  
 Backend-2.0.jar  
 Metadata: micro-a-1.0.qa.test.result = OK

SIT -> UAT -> Pre-Prod->Prod

分级Metadata

Hours

**Backend-A-pipeline**

...

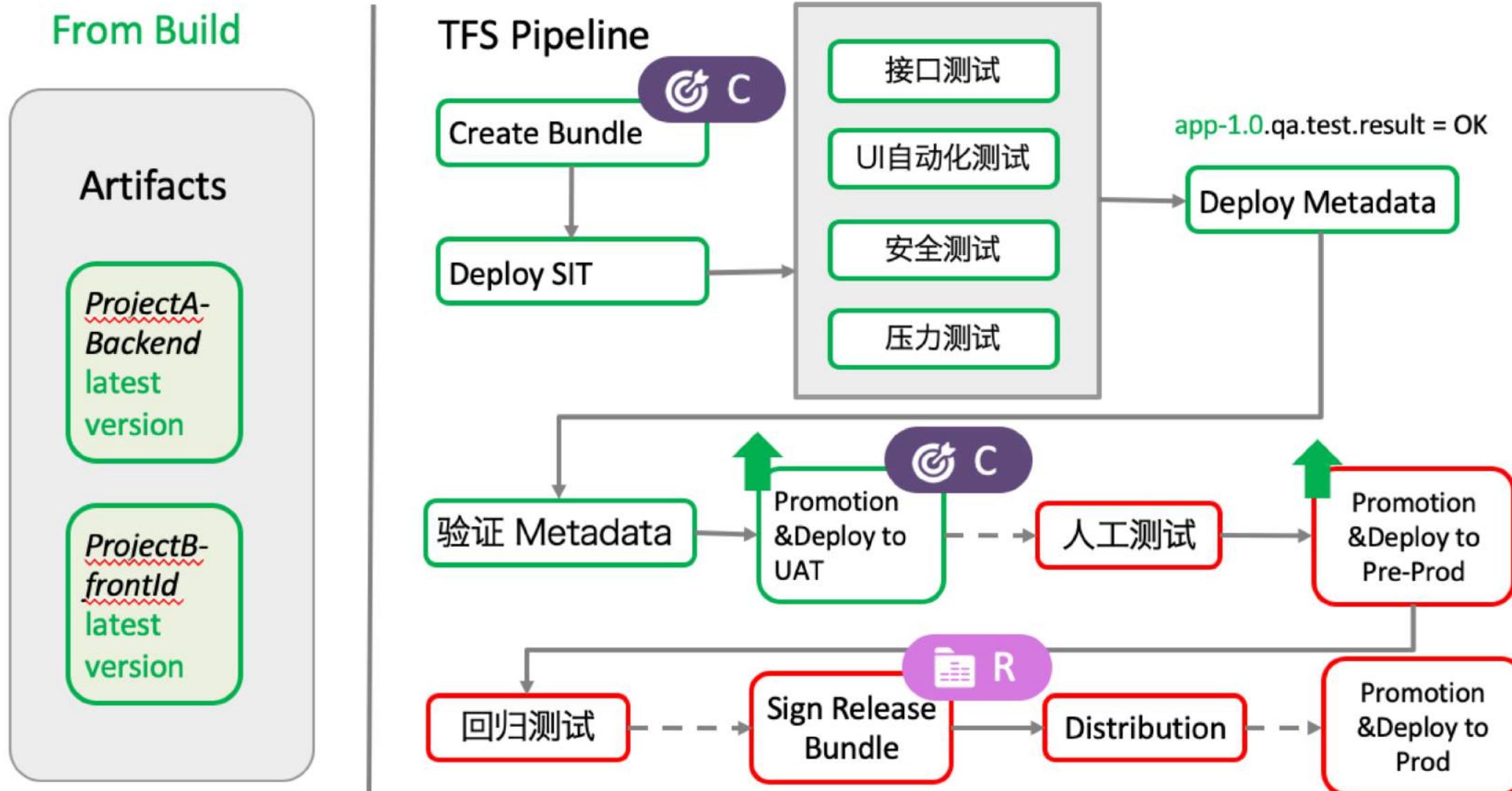
backend-1.0.jar  
 Metadata:  
 qa.test.result = OK  
 qa.code.result = OK  
 project.revision = ASDASSAC  
 binary.config.path=backend/dev/1.0  
 deploy.pre-prod.result=OK

Local -> Dev

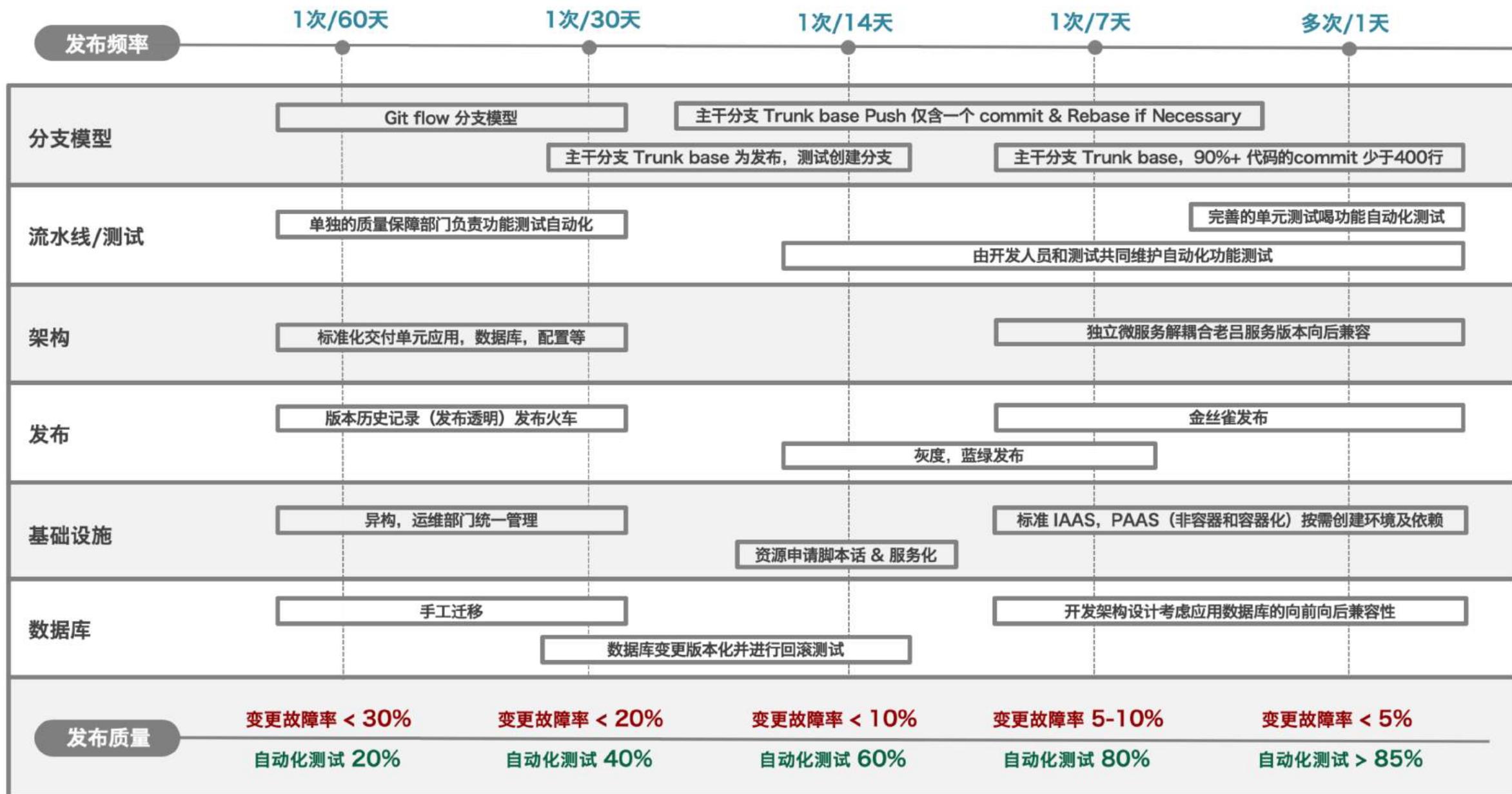
DevOps 包管理规范 Release History

# 持续交付流水线分级 Project 设计 - App Service

自动  
手工



# CI/CD 建设计划及目标



# 统一软件交付流水线数据展示



JFrog Artifactory

Home

Artifacts

Search

Builds

Admin

JFrog Artifactory  
5.3.0 rev 50045  
Licensed to Waterway  
© Copyright 2017 JFrog Ltd

## Artifact Repository Browser

- Tree Simple Search
- ▶ npm-virtual
- ▶ pip-virtual
- ▶ conan-local
  - ↳ docker-dev-local
- ▶ docker-dev-local2
  - ↳ docker-local
  - ↳ docker-prod-local
  - ↳ docker-release-local
- ▶ docker-release-local2
  - ↳ docker-test-local
  - ↳ docker-webinar-local
- ▶ generic-local
- ▶ git-lfs-local
- ▶ gradle-dev-local
- ▶ libs-release-local
- ▶ libs-snapshot-local
- ▶ libs-test-local
- ▶ maven-local-2
- ▶ maven-releases-local
  - ↳ org

Trash Can

multi3-6.238.war



Welcome, admin

Help

Set Me Up Deploy

Download Actions

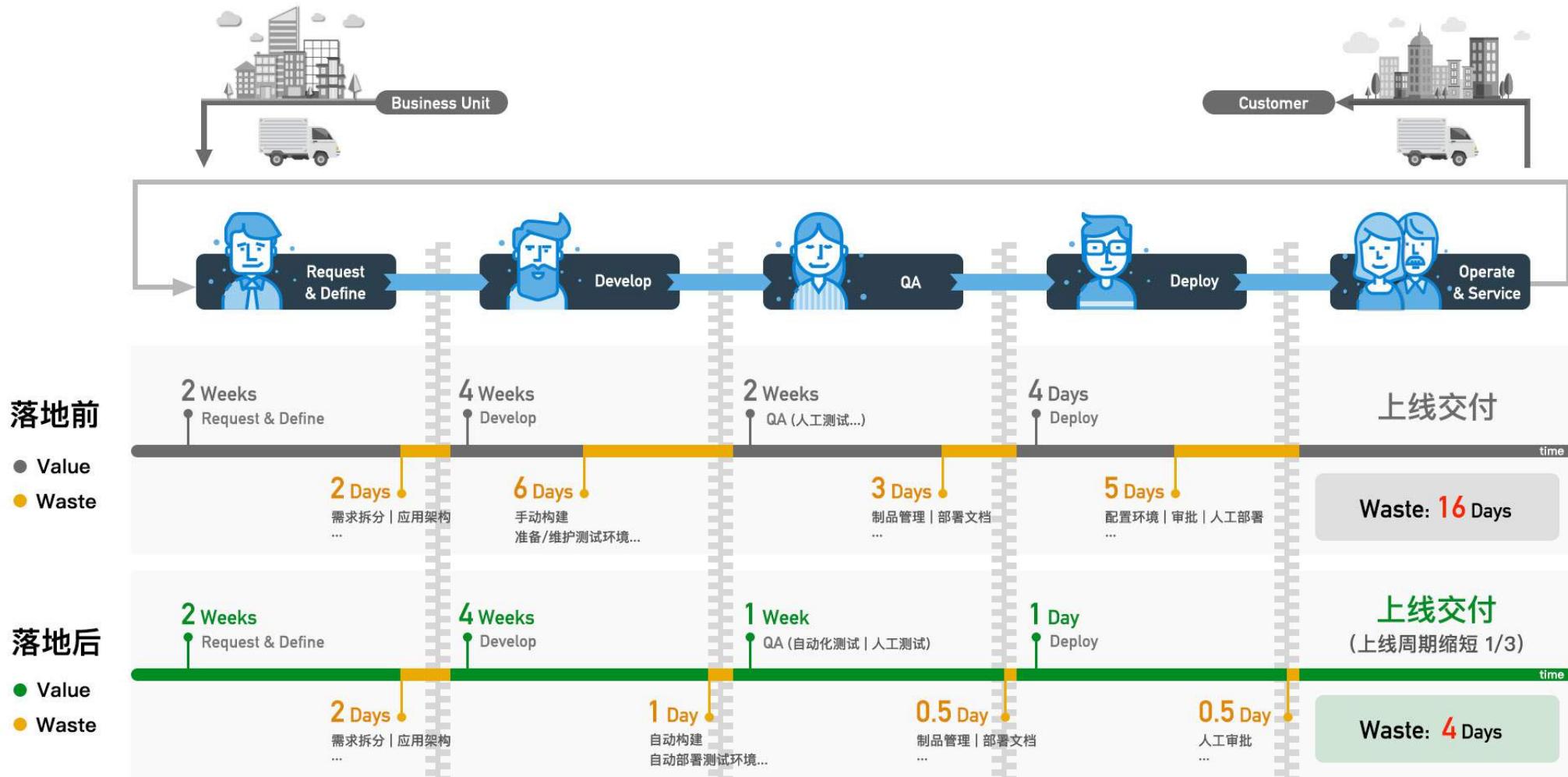
Property	Value(s)
qa	done
passRate	1
platforms	osx win386 win64 debian
vcs.revision	251ab9ba9bea19fdaa48622b43c8fe2da155df17
qaType	unitTest,sonar
testType	junit
build.timestamp	1502195316210
build.name	mvn-pro-webinar
build.number	80
chef.env	TestEnv1,ProdEnv1
env	TESTING
buildStatus	RC
sonarUrl	http://47.93.114.82:9000/dashboard/index/jfrog:multi3
sonarIssue	2

发布包 (.war)

各阶段关键数据回写

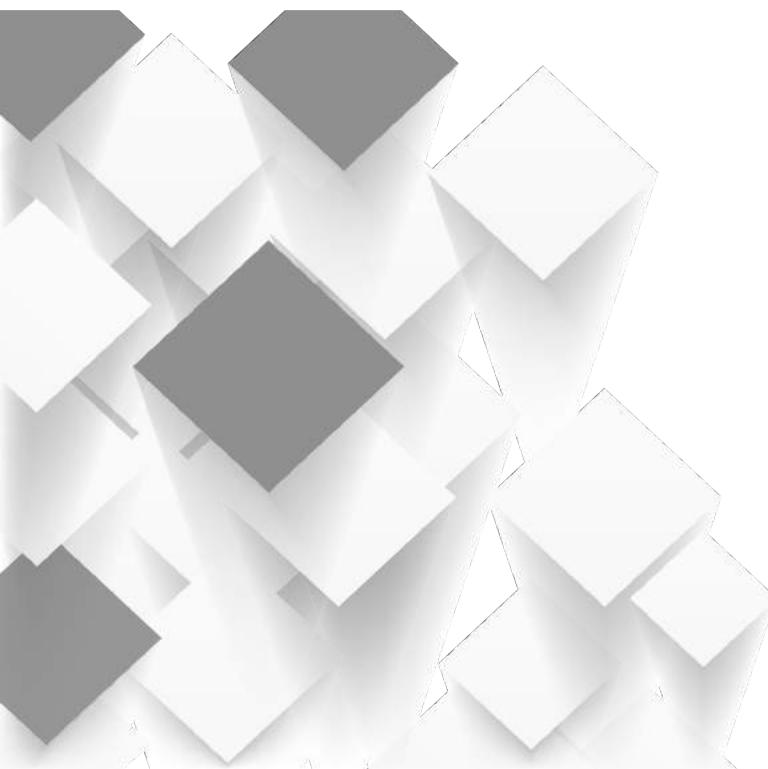


- 更短的项目周期



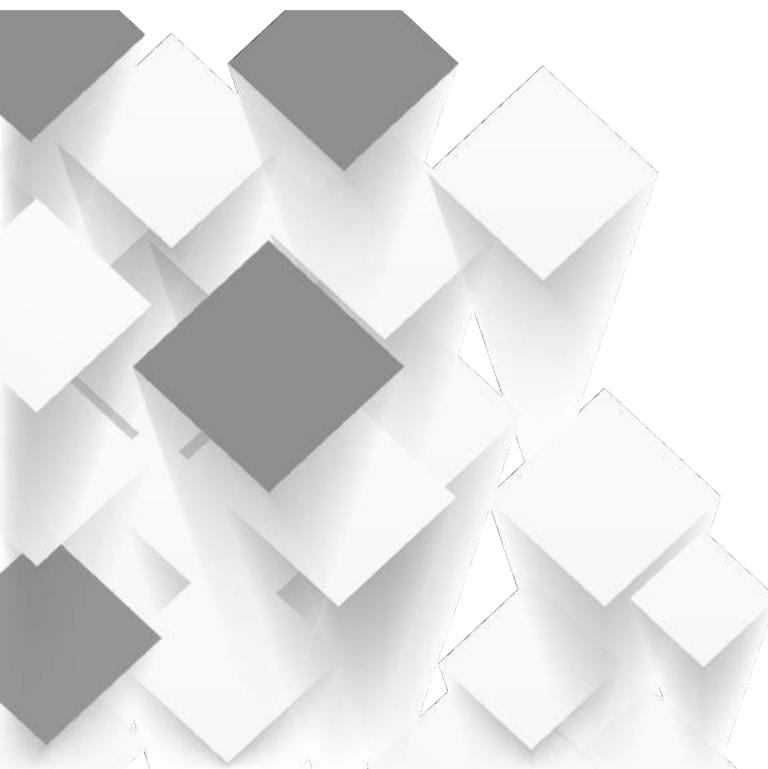


- JFrog 公司和产品介绍
- 产品演示 ( Jenkins , Ansible , Junit 等DevOps工具集成 )
- 大客户案例分享





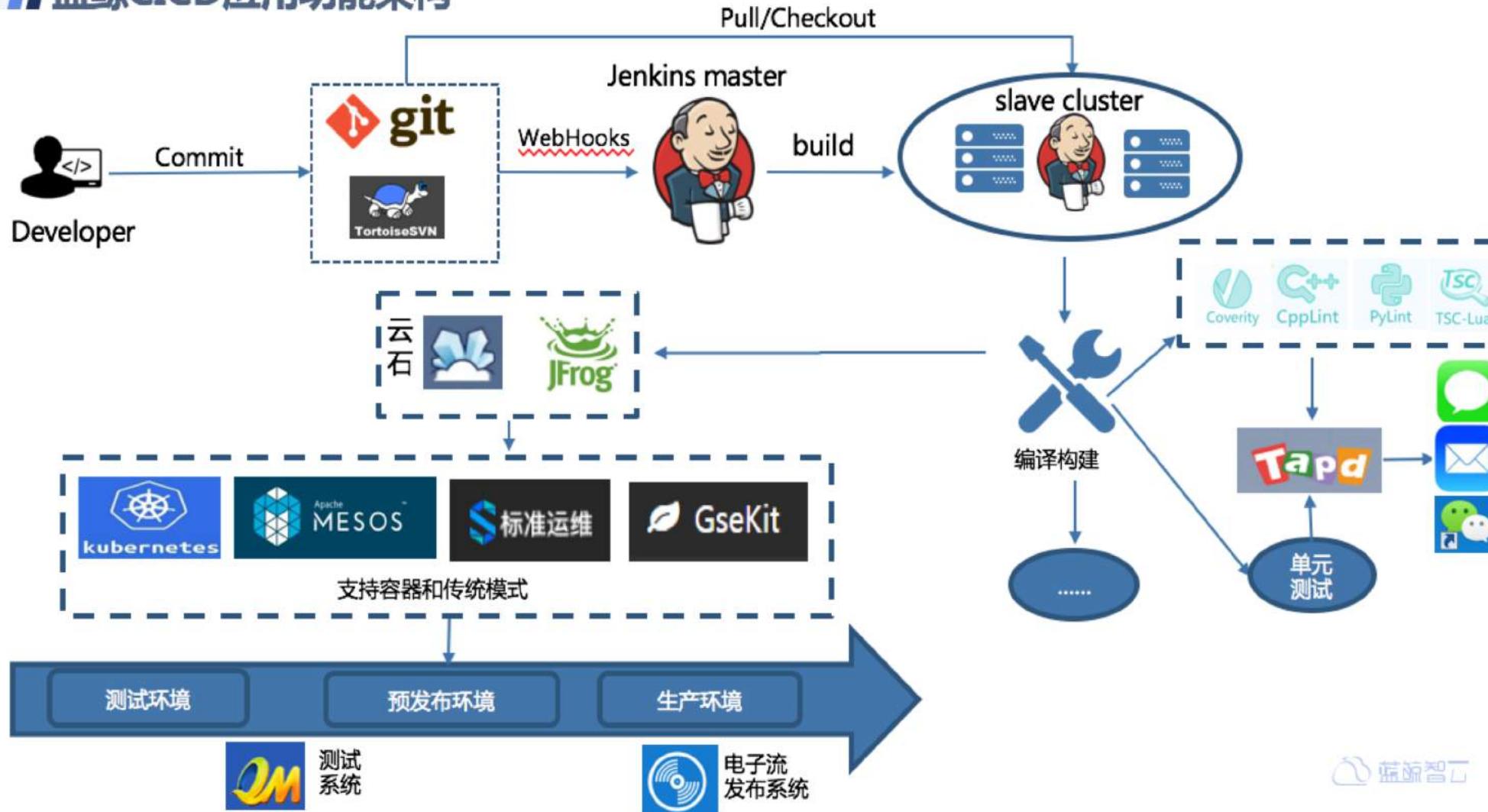
- JFrog 公司和产品介绍
- 产品演示 ( Jenkins , Ansible , Junit 等DevOps工具集成 )
- 大客户案例分享



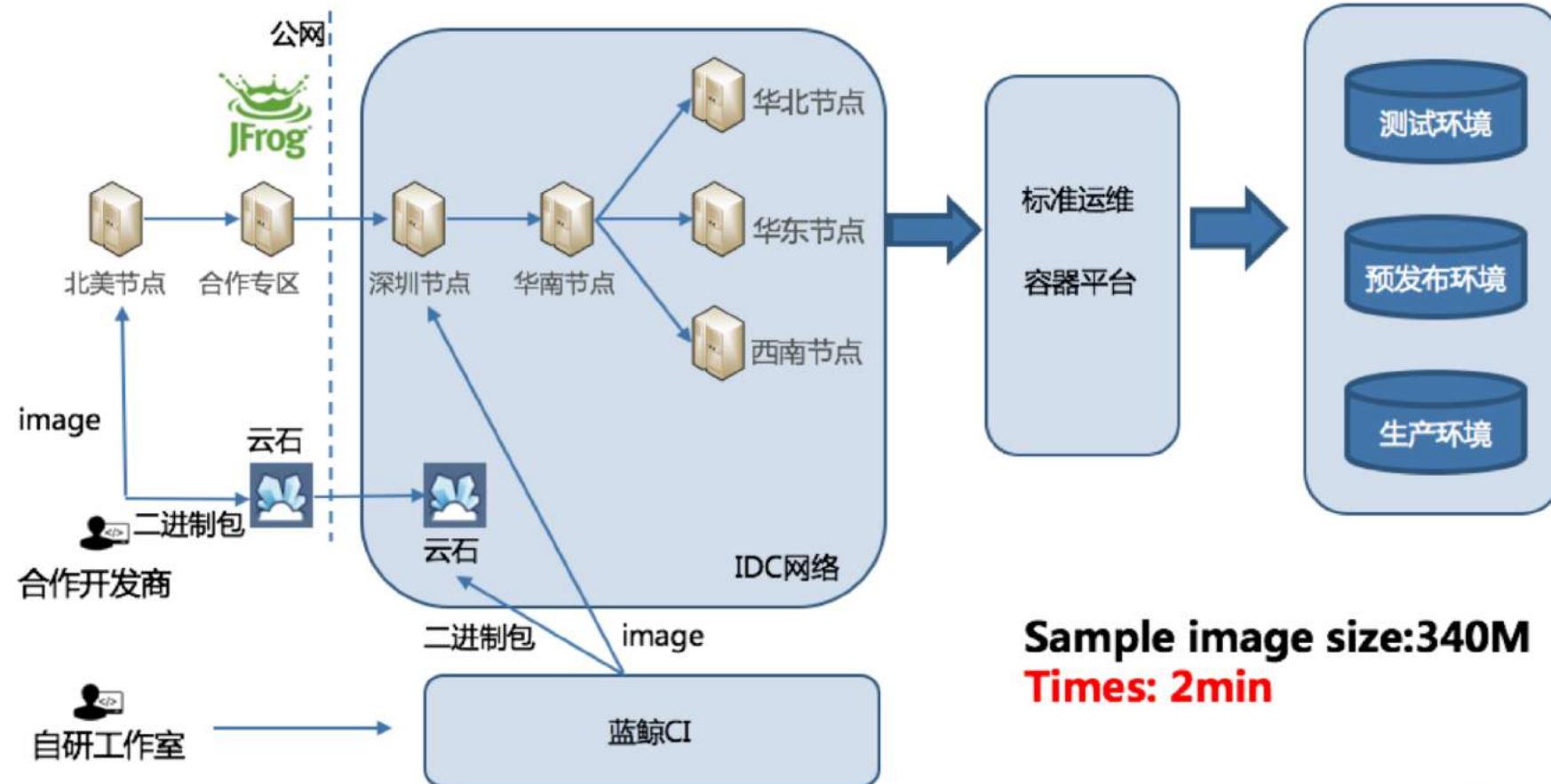
# 腾讯蓝鲸使用 Artifactory 案例



## 蓝鲸CICD应用功能架构



# 腾讯蓝鲸使用 Artifactory 案例





- 美国最大的数字化银行之一
- 成立20年时间
- 数百万的账户
- 2016年净利息收入208.73亿美元





- 无法统计软件交付数据
- 每个月集成
- 手动测试
- 手动部署

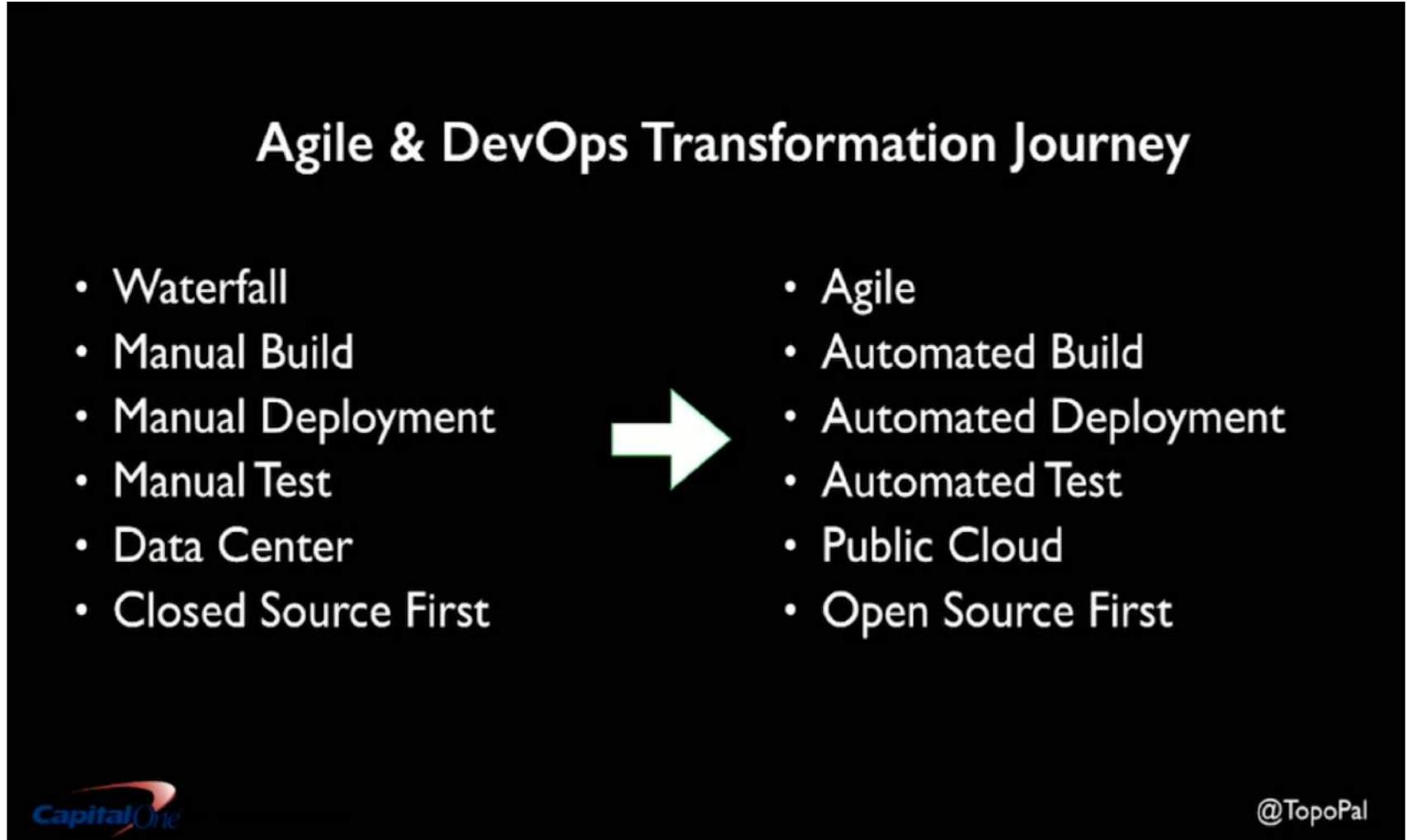
## Typical DevOps Success Story

Code Commit	Random
Integration	Monthly
Deployment	Manual
QA, Perf	Monthly
Prod	Monthly/ Quarterly
Testing	Manual





- 五年之内转型





- 全公司统一流水线
- 16个质量关卡
- 每个阶段元数据跟包绑定

## Pipeline must have 16 gates

Source code version control 源代码版本控制

Optimum branching strategy 事宜的分支策略

Static analysis 静态分析

> 80% Code coverage 大于80%的覆盖率

Vulnerability scan 漏洞扫描

Open source scan 开源扫描

Artifact version control 制品版本控制

Auto provision 自动化分配资源

Immutable servers 不可变服务器

Integration testing 集成测试

Performance testing 性能测试

Build, Deploy, Testing automated for every commit 每次提交进行构建,部署,自动化测试

Automated Rollback 自动化rollback

Automated Change Order 自动化变更工单

Zero downtime release 零停机发布 ( 蓝绿部署、金丝雀发布等 )

Feature Toggle 功能开关

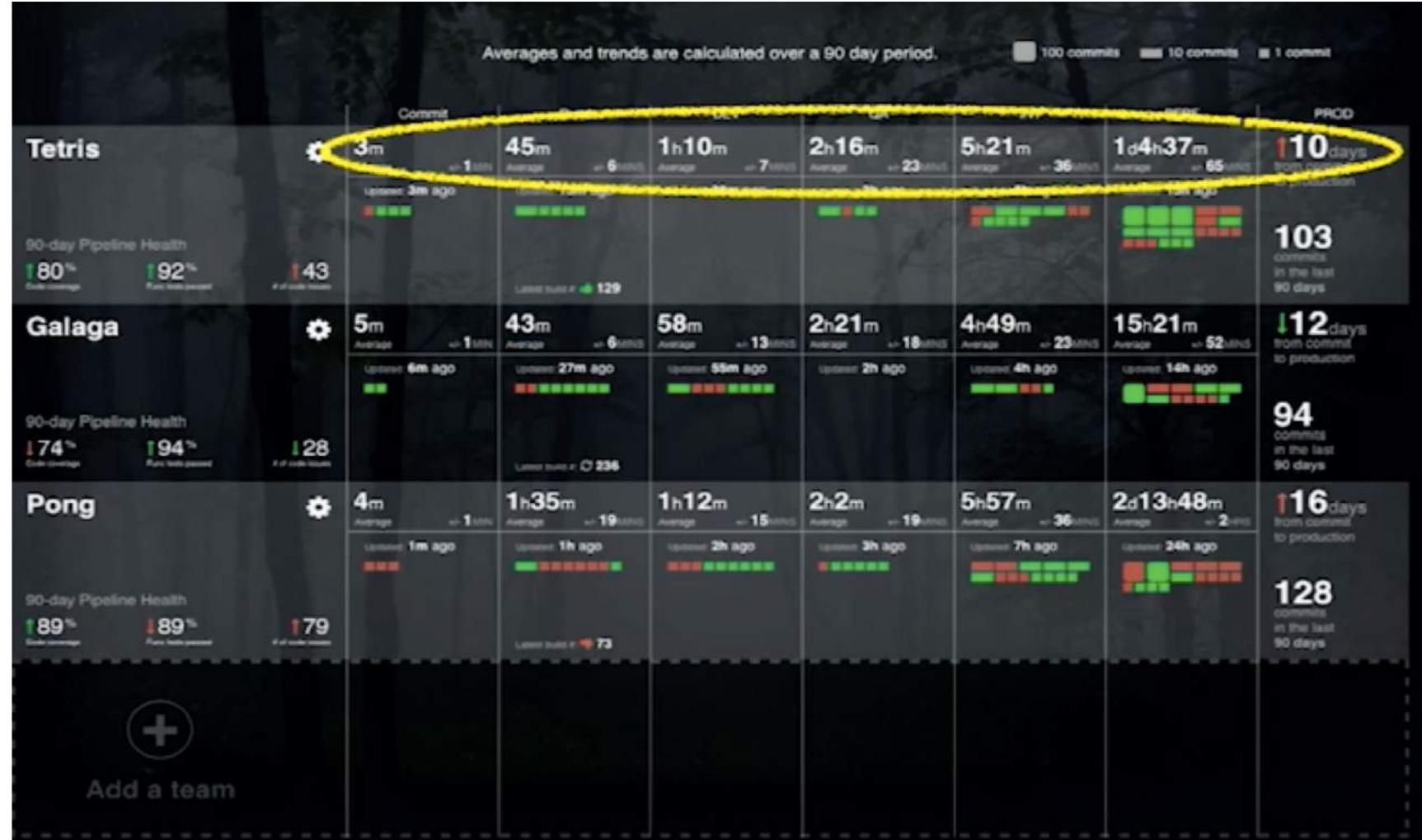


sonarqube



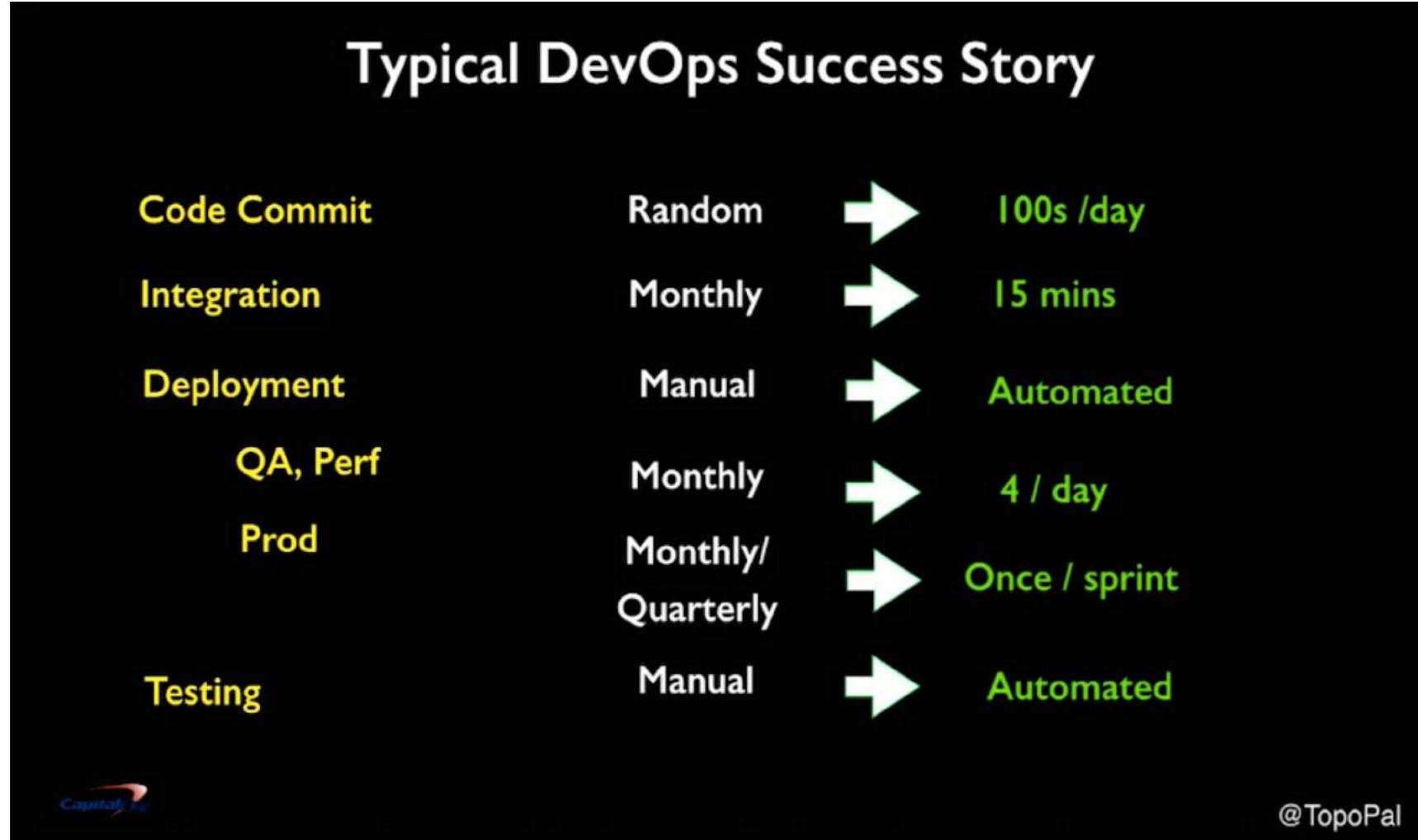


- 基于Jenkins , JFrog 开发了Hygieia仪表盘工具
- 开源项目





- 五年之内转型





- 保险巨头
  - 全球 52,000 员工
  - 2016年净利润 – 50亿欧元
  - 600个研发团队



# Global Continuous Delivery Journey

A worldwide presence in commercial and retail banking

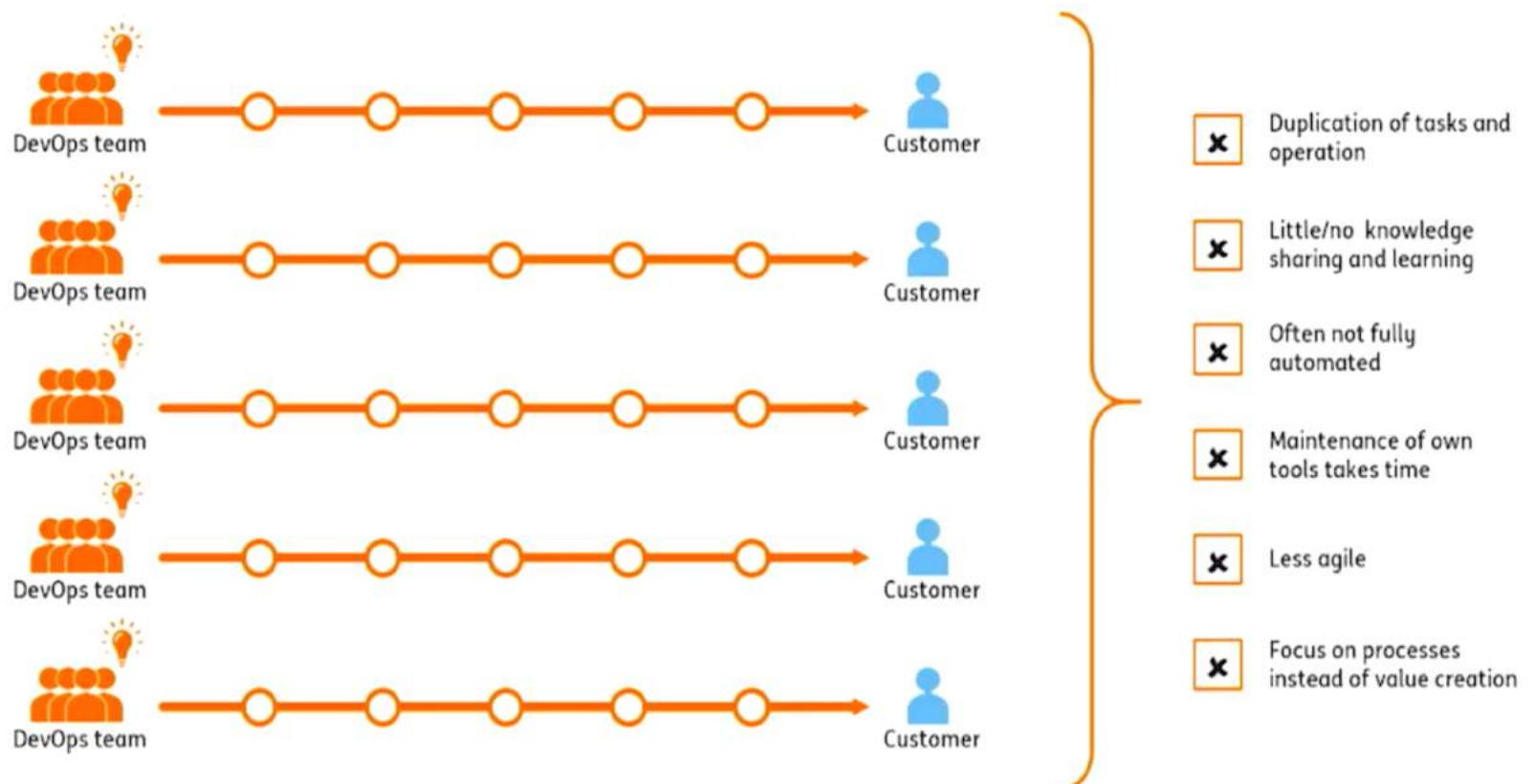


Disclaimer: ING Bank does not have a commercial banking licence in the U.S. and therefore is not permitted to conduct commercial banking business in the U.S. Through its wholly-owned subsidiary, ING Financial Holdings Corporation, and its affiliates, it offers a full array of wholesale products such as commercial lending, corporate finance, and a full range of FICC products and services.



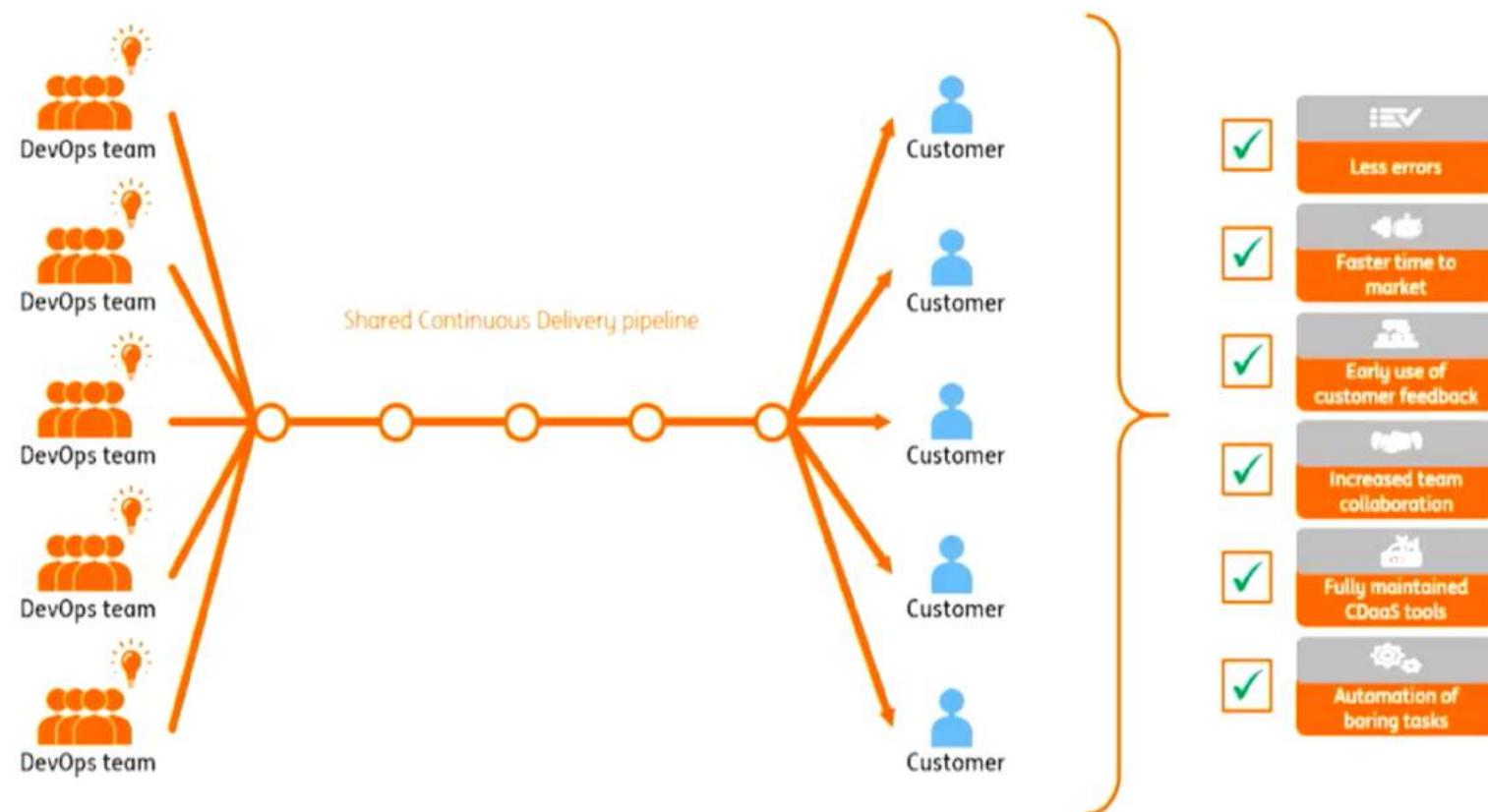


- 每个团队自己维护自己的工具，交付流水线
- 重复任务多，维护成本在产品团队
- 难以实现标准化交付流程



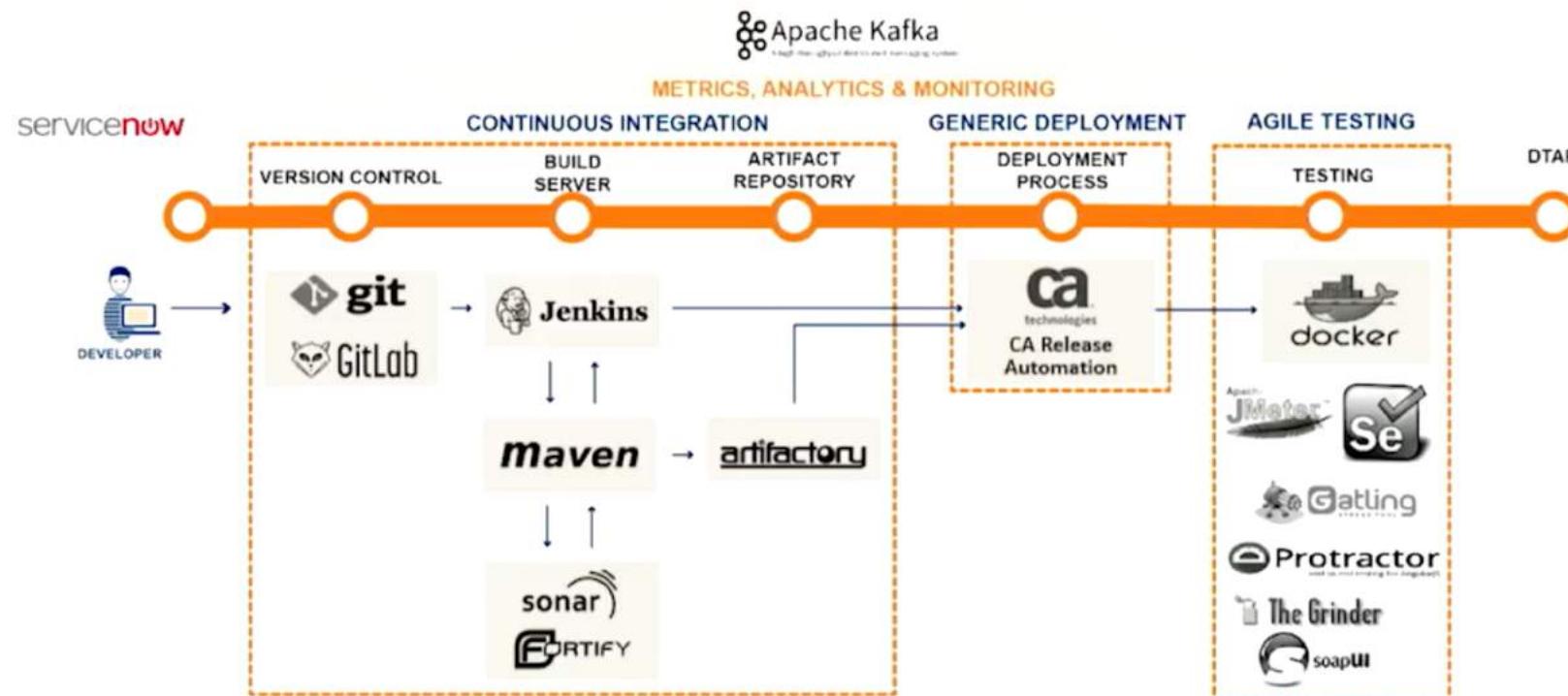


- 统一流水线
- DevOps团队给开发团队提供工具
- 统一上线规范，流程





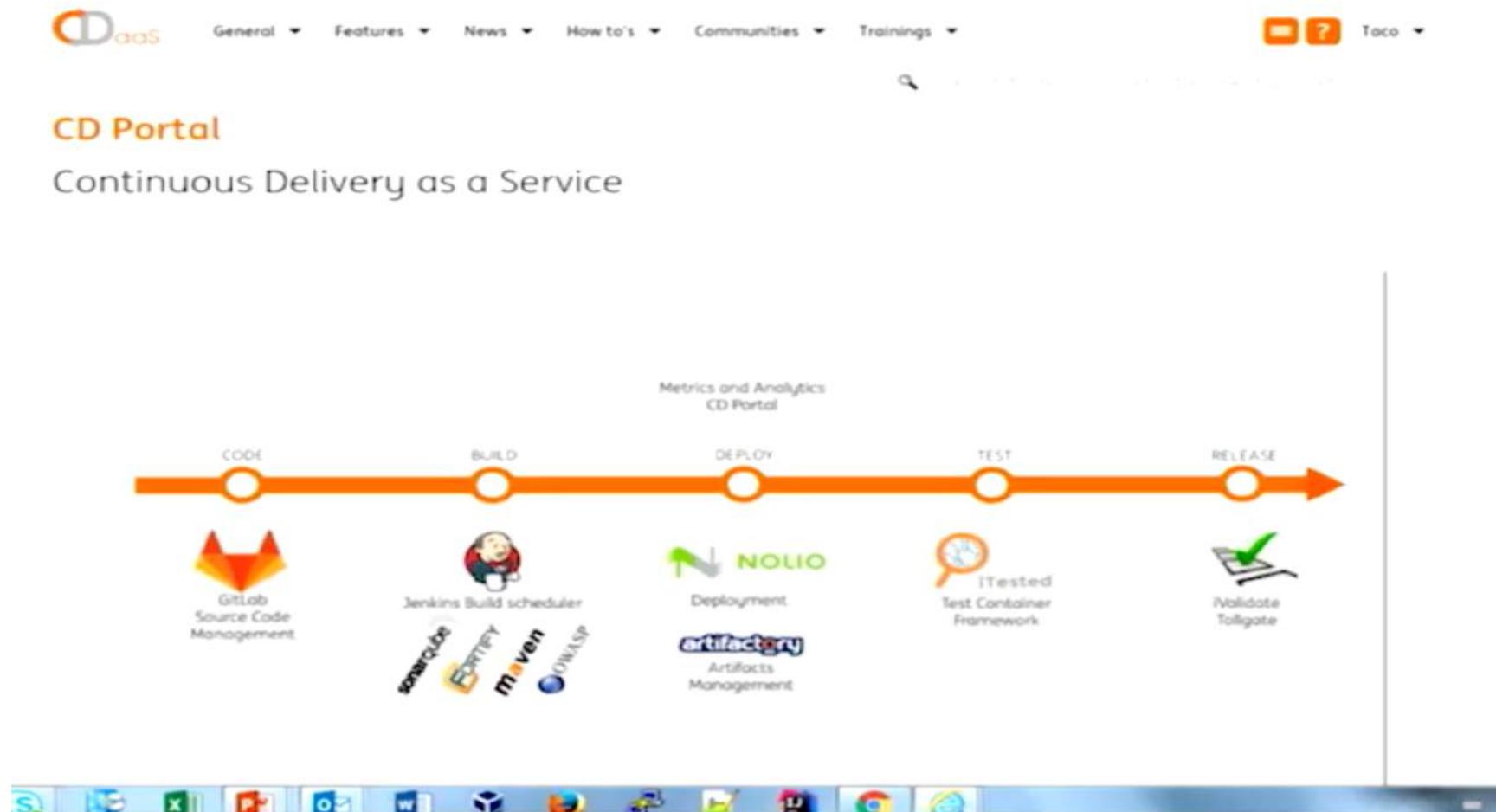
- 全集团统一交付流水线
- 打通权限，提供工具规范
- 工具维护，不封装



One opinionated flow for all the ( $\approx 600$ ) teams



- CDaaS (持续交付即服务)
- 用户认证，社区，工具wiki，最佳实践





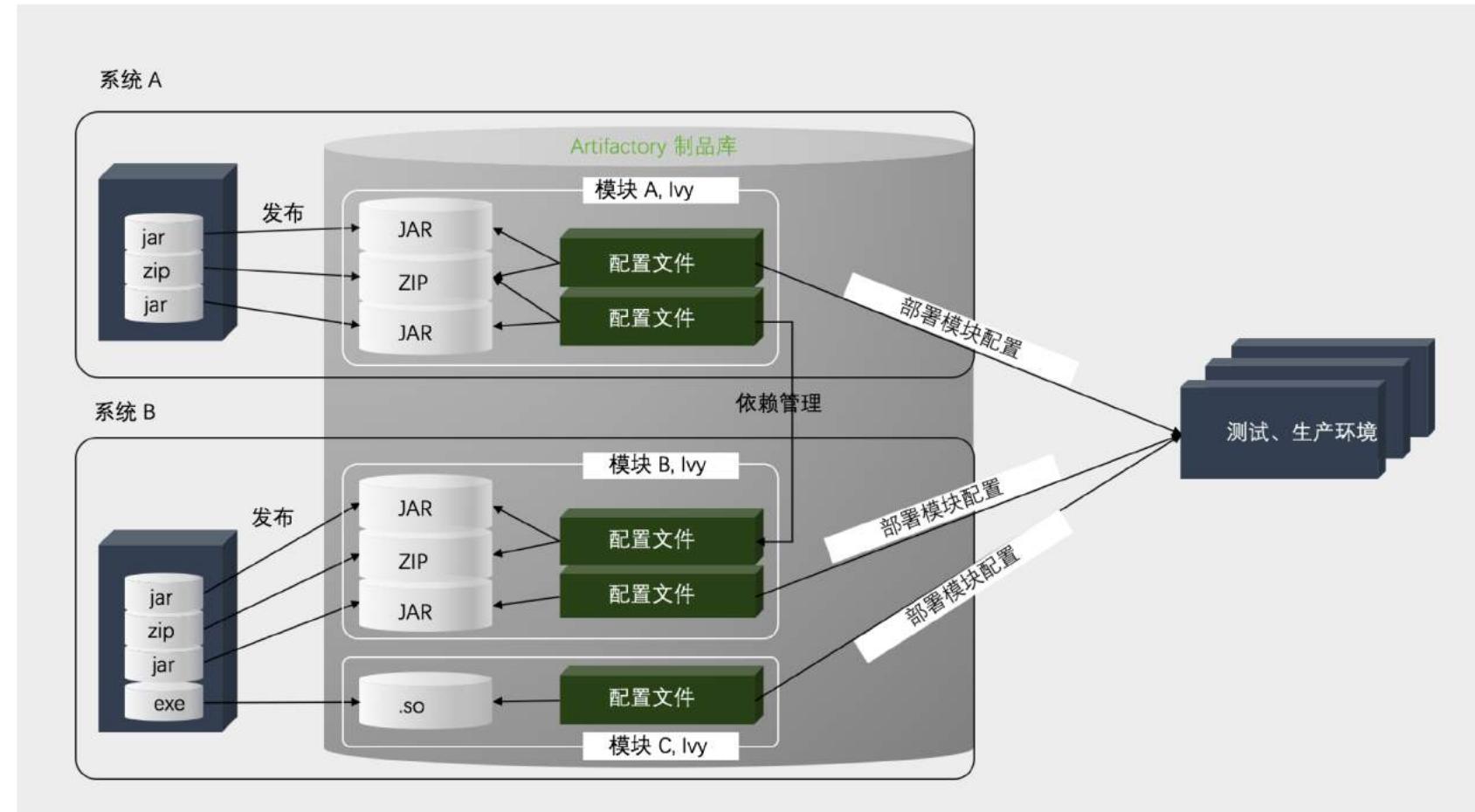
Going to production takes minutes/hours  
Considerable reliability improvements  
Relaxed atmosphere on the floor

- 1.支持了500种应用交付
- 2.TTM 小于6周
- 3.减少50%的线上发布事故
- 4.发布次数12,000次/月





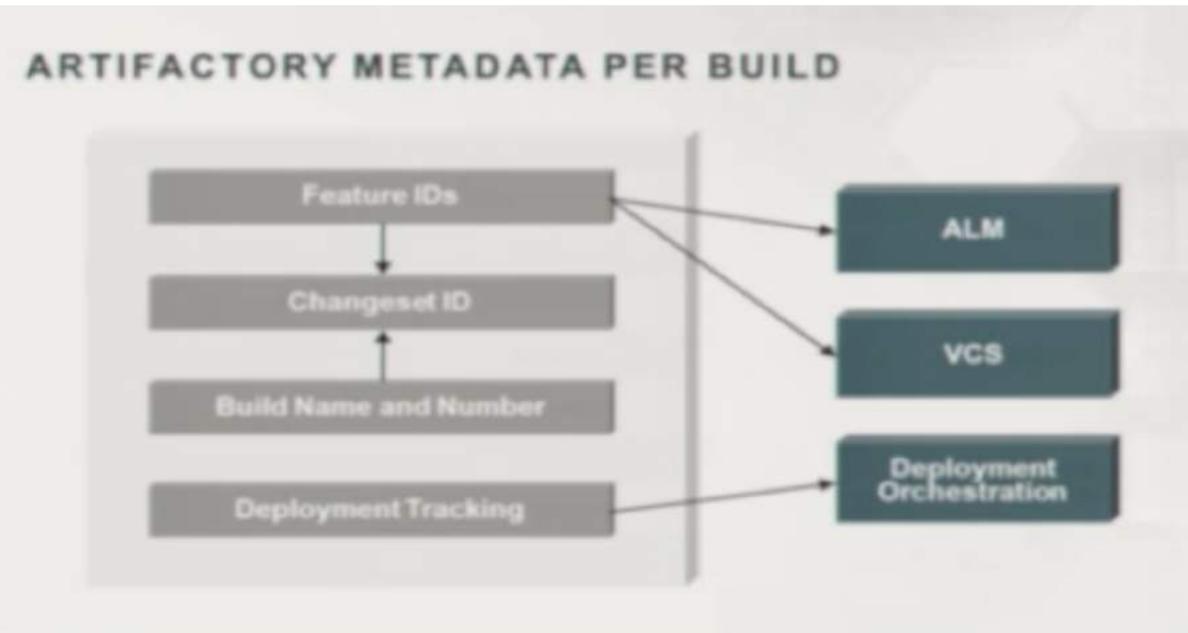
- 子模块拆分（非微服务）
- 跨系统复用
- 文件描述依赖信息
- 进行统一打包





## 需求和制品的关联

- 记录元数据到 Artifactory
  - 代码提交的 Commit，提交人
  - Commit 关联的需求 ID
  - Jenkins 的构建信息
  - 部署信息（部署到了哪些机器）
- Rest API 和可视化报表
  - 将部署信息可视化
    - 我要部署的包包含了什么需求？
    - 我如何编排我的应用部署？
  - 如何实现？
    - 从 Artifactory 获取所有的关联文件的元数据
    - 遍历每个文件元数据的信息
    - 聚合，并生成可视化文件关联图谱。





- 全国2000+研发
- 底层统一建设工具链，上层通过一个portal对接用户
- 统一代码扫描，测试规范

项目/过程管理	配置管理	构建	测试/质量	制品/部署	基础设施	沟通协作	可视化
 Tracker   ITIL	  	     	         	   	    	 	     

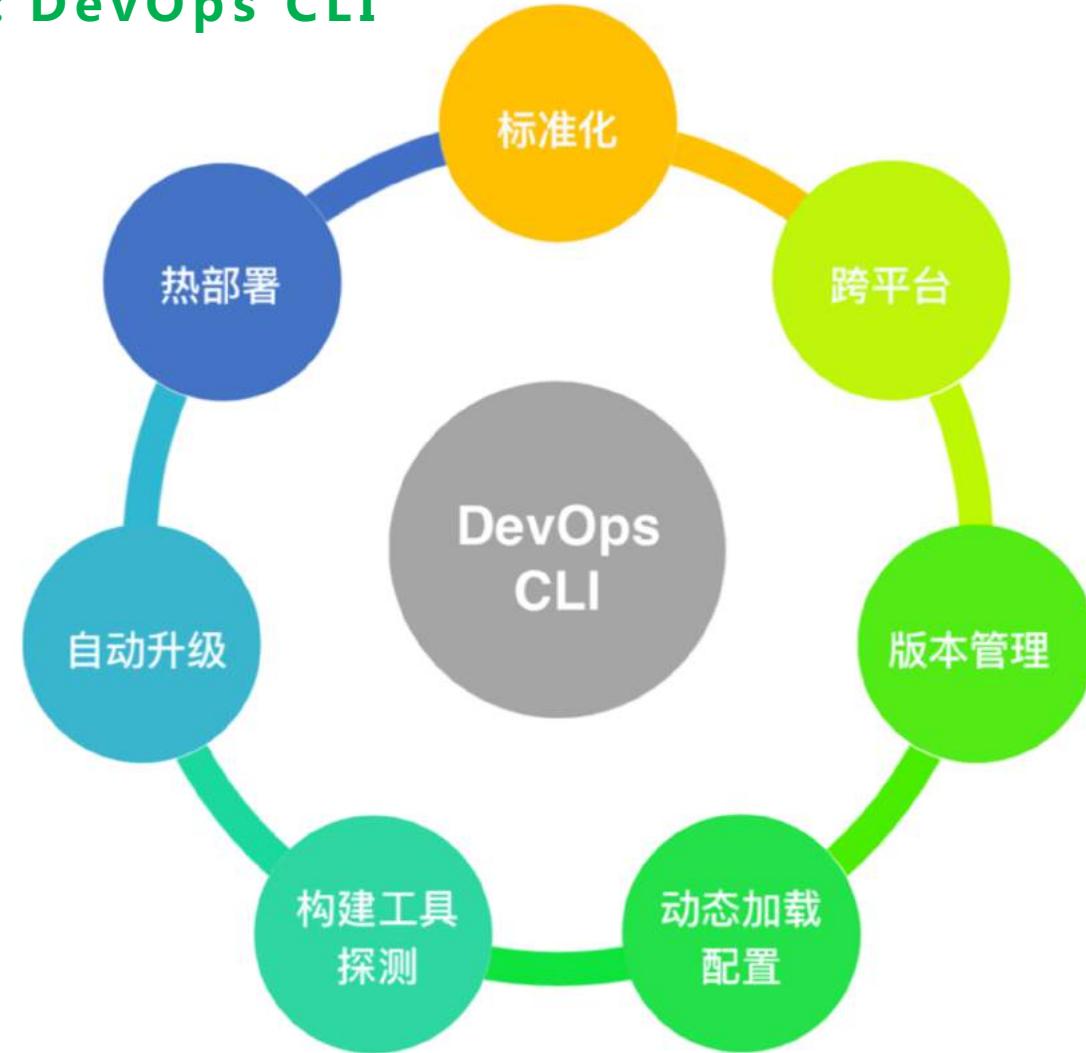




- 基于Jfrog CLI 二次开发的特色功能：DevOps CLI

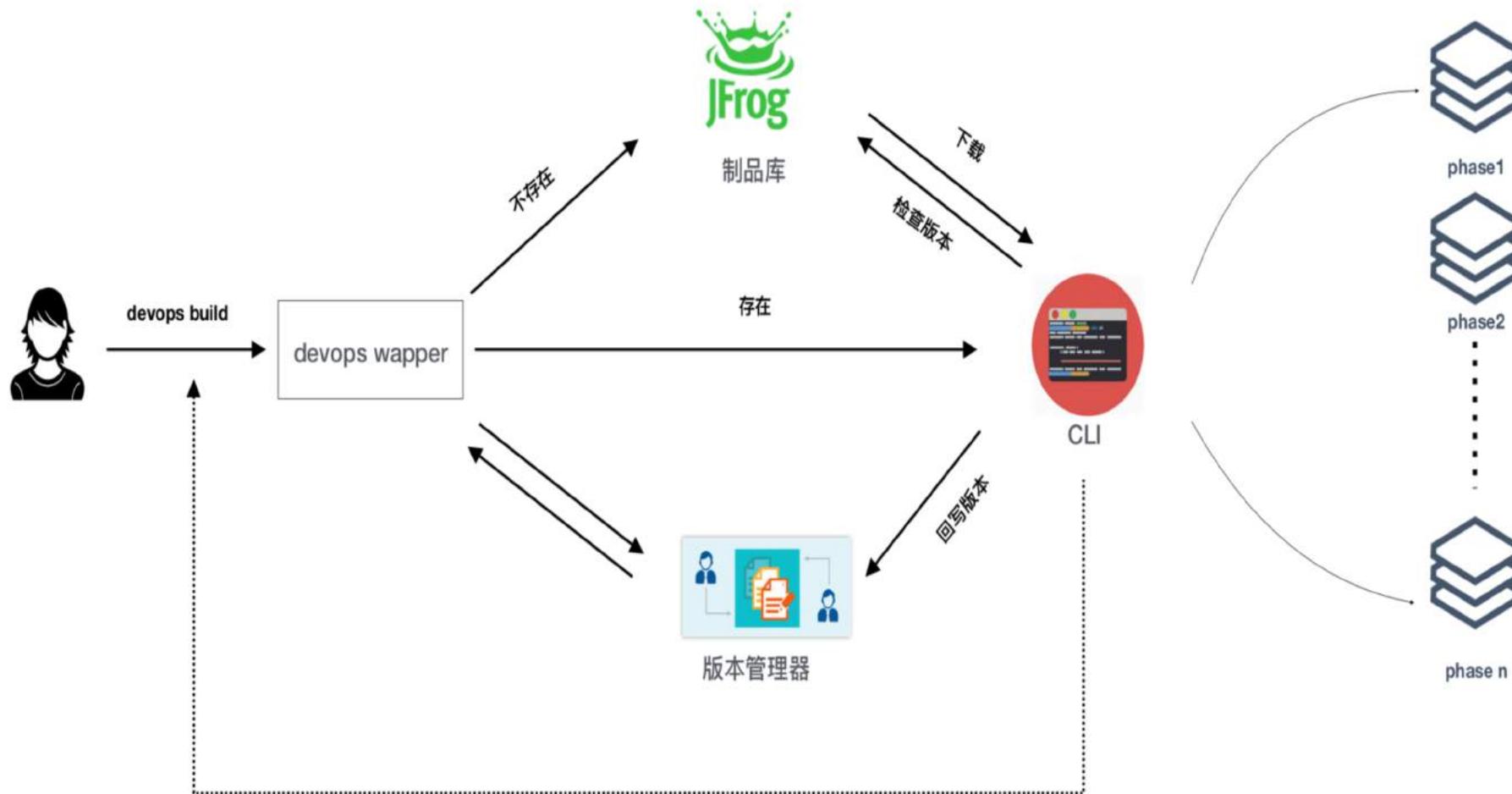
## 功能优势：

- 简单易用
- 易于维护
- 支持复杂定制化
- 领域语言统一(DSL)





- 封装Artifactory Cli，实现热部署与版本管理





- 基于Jfrog CLI二次开发的命令行工具DevOps CLI的易用性和扩展性

- 自定义环境变量

```
export DEVOPS_DIST_JAR_URL='http://99.12.105.70/af/*/devops-cli-1.0.0.jar'  
export DEVOPS_CLI_UPDATE='false'  
export DevOPS_BUILD_COMMAND='npm run start:dev'
```

- 命令行参数

```
devops build \  
  --lang-platform.name="node"  
  --lang-platform.version='6.2.1'  
  --build.command='npm run test' \  
  --build.dist='./build'
```

- yml

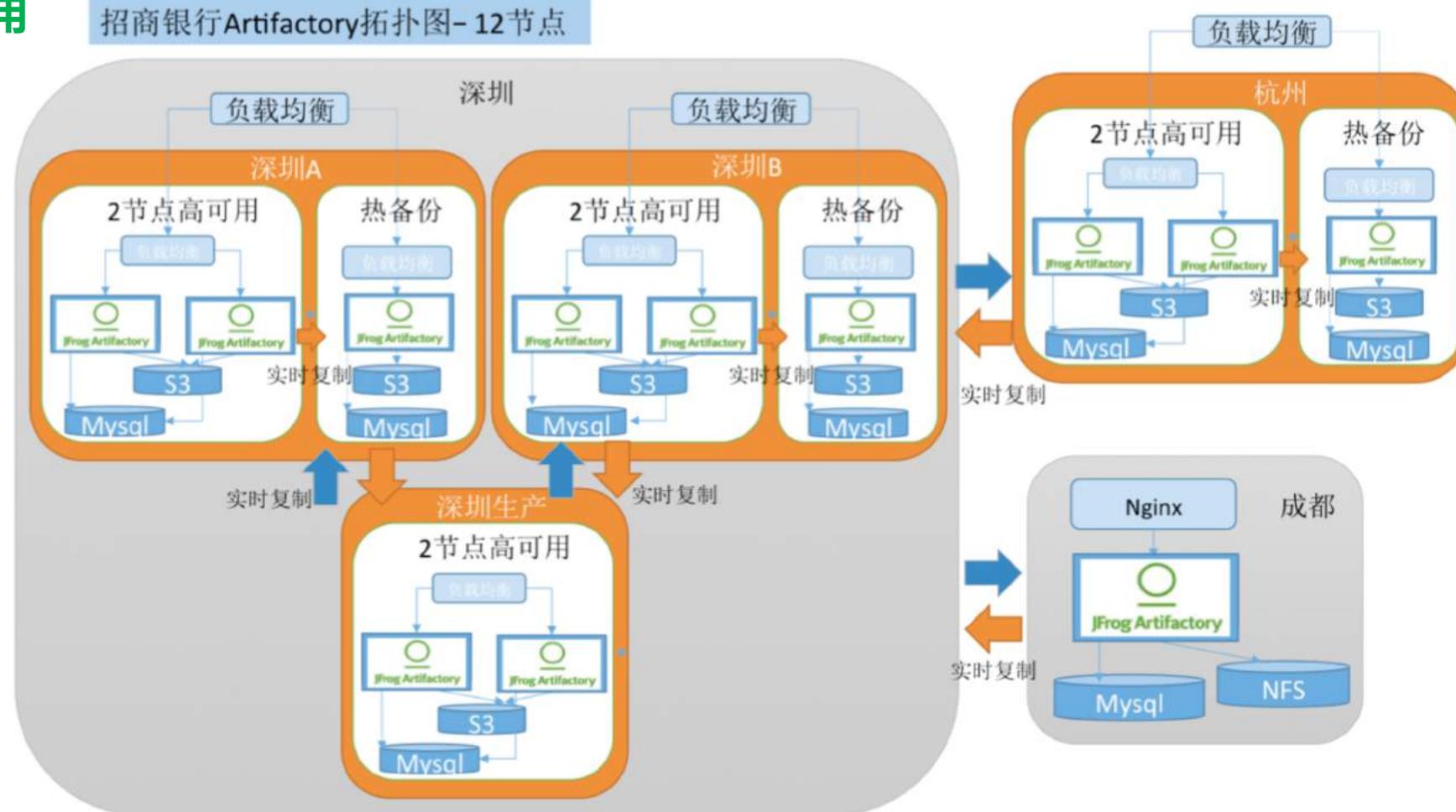
```
npm:  
  
lang-platform:  
  name: node  
  version: 6.2.1  
tool: npm  
build:  
  command: npm run test  
  dist: ./build
```





- 全国软件交付管理
- 多地复制
- 二进制高可用
- 容灾备份

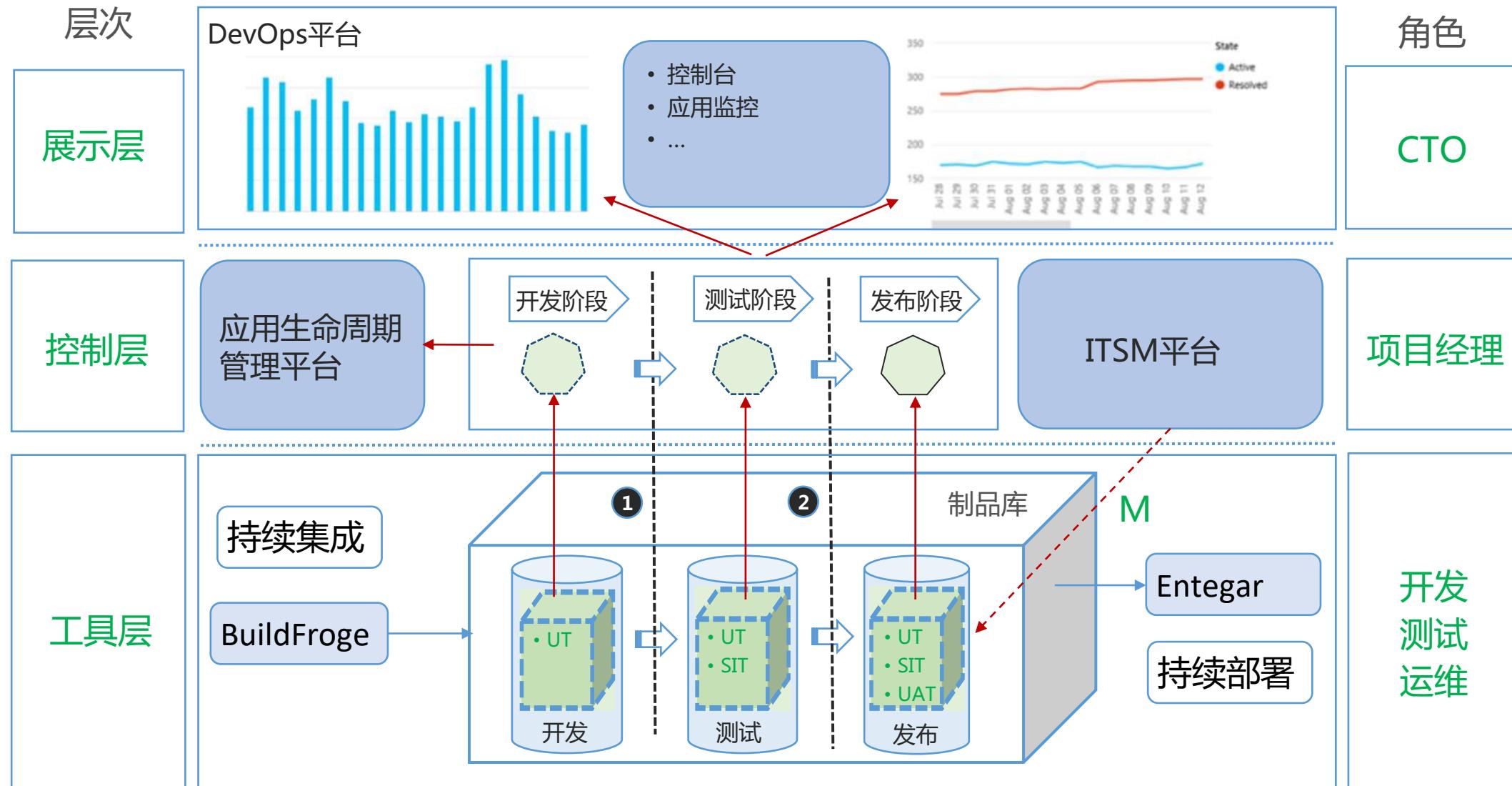
招商银行Artifactory拓扑图- 12节点



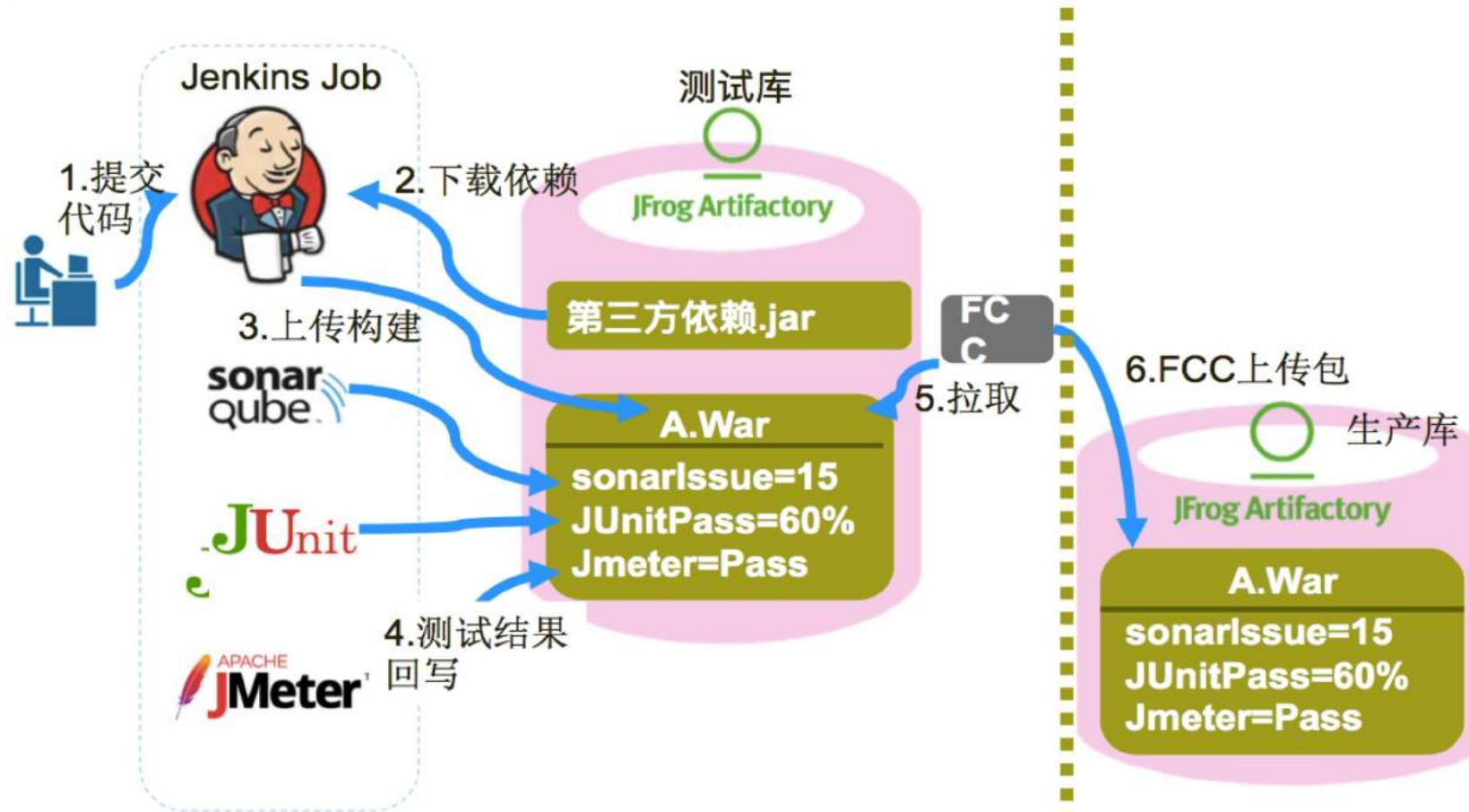
# 制品库与持续交付

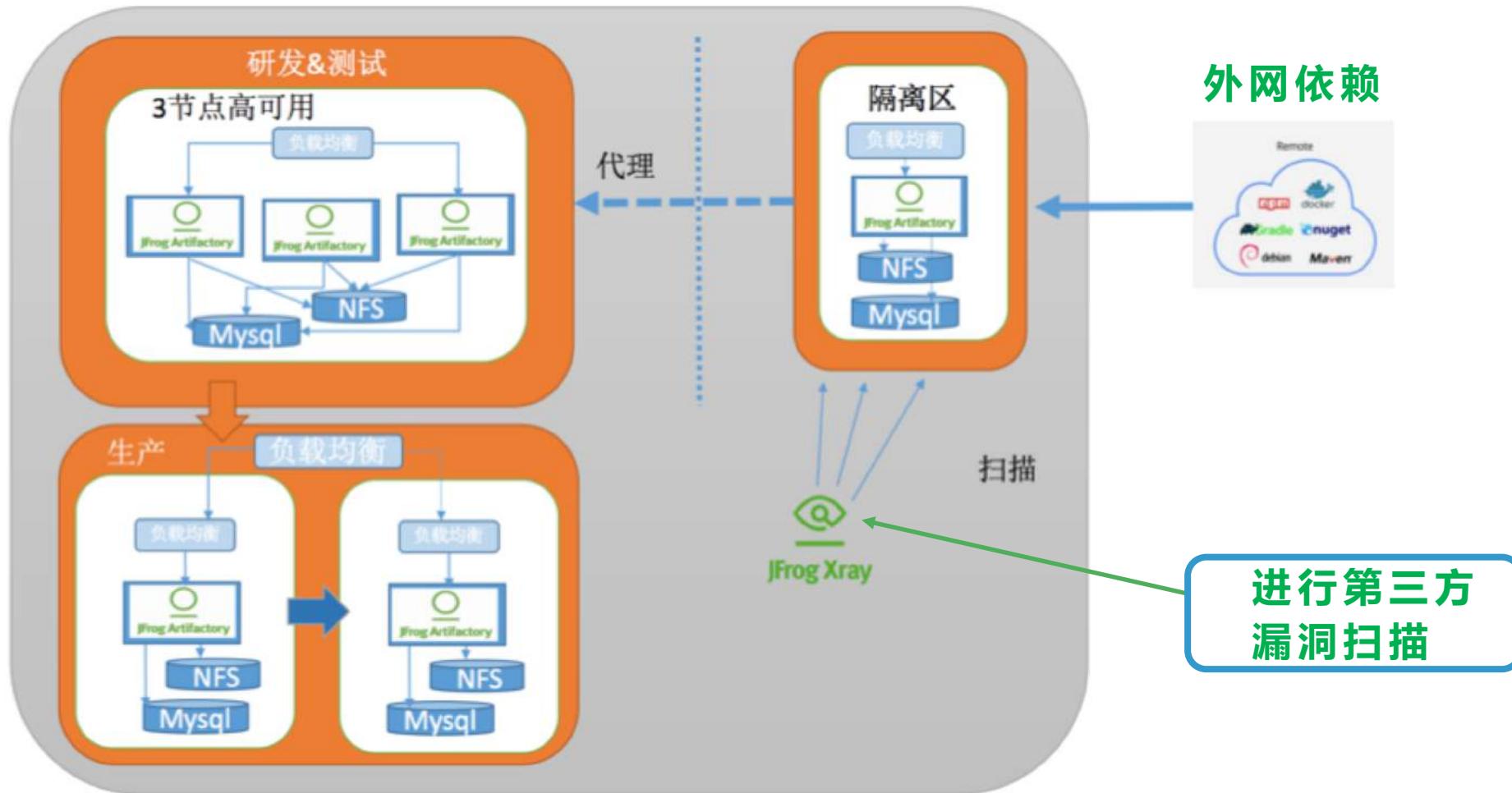


## 制品库在某银行研发体系中的位置



## PaaS云中CI/CD—软件交付流水线







syseng.oraclecorp.com:8282/dashboard/index.html#/pipeline/main

Apps Imported From Firefox Training Techstack UnitTesting Stanford APM Agile/Scrum OBIEE FMW Artifactory Misc MWCS CI PaaS slcar005 Liberte

Syseng Report

Health Card Summary view

Last Succ 161213.0935.253

Last Promoted 161213.0935.253

running 161213.2324.254

SUCCESS 161213.0935.253

SUCCESS 161212.2033.252

SUCCESS 161212.0527.251

SUCCESS 161211.1117.250

SUCCESS 161210.2110.249

SUCCESS 161210.0545.248

SUCCESS 161209.1613.247

SUCCESS 161209.0238.246

12.2.1.3.0 askernel:generic:12.2.1.3.0 All Go BOOKMARK YOUR SELECTION

Standard Cloud Testing Pipeline (C3PO) Dashboard Home Hits 52852 Consumption Matrix Help

### Health Card for 12.2.1.3.0 L2 (Last 7 Days Data)

**Number of Runs**

Total	Success	Failure
22	11	11

**Time Metrics Task Wise (hh:mm:ss)**

Pipeline Jobs Time	farmjobs Time
mfbuilder 00:00:22	askernel_bj 03:18:47
id_validator 00:00:49	askernel_webcenter 03:59:11
all_gating_hudsonjobs 00:00:57	askernel_sacore 02:05:48
l2_scmchange 00:00:03	askernel_idm 07:04:32
l_nongating_hudsonjob 00:01:17	askernel_soa 03:26:05
submit_config_jobs 00:09:12	askernel_odlint 05:39:13
all_gating_farmjobs 08:32:00	askernel 04:42:21
ll_non_gating_farmjobs 01:38:13	askernel_fmwtools 01:15:20
mfpromoter 00:03:43	
labelprebuild 00:05:45	
labelbuild 00:05:28	
labelpostbuild 01:34:52	

**Manifest for Early Pick Up**

- manifest.integration.prerelease:askernel-manifest:12.2.1.3.0-161213.2324.254
- ASINST\_GENERIC\_12.2.1.3.0-161213.0045
- ECMCLIENT\_GENERIC\_12.2.1.3.0-161213.1200.8254
- EMGC\_FMW\_GENERIC\_12.2.1.3.0-161212.2201
- FMWPLATFORM\_FMWPROM\_GENERIC\_12.2.1.3.0-161213.0814.13088

**Time Metrics(hh:mm:ss)**

Average	Best Case	Worst Case
10:53:55	06:36:15	15:24:57



OrchViewer

OrchID: 883 - InstanceID: 1820965

[View Old Visualization](#)

### Instance Information

**Duration:** n/a

**State:** ERROR

**Start Event:**

```
{  
    CIM_TYPE: "SBE",  
    RELEASE_BRANCH:  
    "release-16-4-5",  
    EM_ORACLE_HOME:  
    "/u01/ops/em/core/12.1.0.5",  
    EMAGENT_IMAGE_FILE:  
    "http://bigfiles.us.oracle.com/.../  
    ,  
    POOL: "pool2",  
    MGMT_VM_NAME:  
    "bdpmgmtpp11",  
    SPARK_ASSEMBLY: "spark-assembly_1.6.1"  
}
```

**Retrigger From** **Retrigger**

**Abort**

### # 1820965

**Graph View** **Json View**

Success Failure Running Waiting Skipped

```
graph LR; A[c3po] --> B[id-c3po-environment-cleanup]; B --> C[id-c3po-register-service-n]; C --> D[id-c3po-delete-old-pods]; D --> E[id-c3po-newpod-create-n]
```

**id-c3po-environment-cleanup**  
c3poenvironmentcleanup  
Nov 21, 2016 - 2:17:40 AM  
0s  
JobID: 38424  
submitted by: id-environment-cleanup

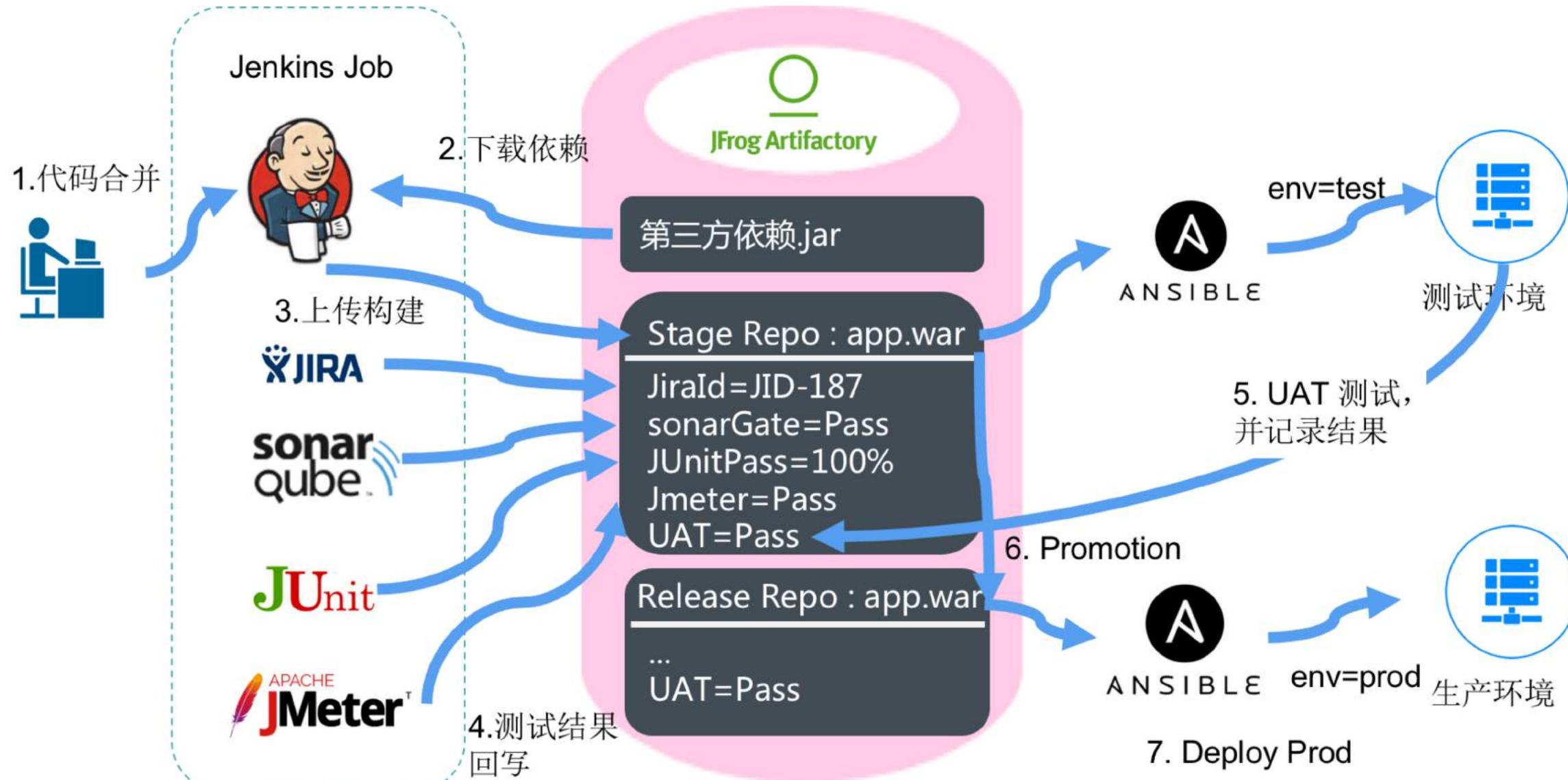
**id-c3po-register-service-n**  
c3poregisterservice-n  
Nov 21, 2016 - 2:17:45 AM  
54m 40s  
JobID: 38425  
submitted by: id-register-service-n

**id-c3po-delete-old-pods**  
c3poddeleteoldpods  
Nov 21, 2016 - 3:12:25 AM  
0s  
JobID: 38426  
submitted by: id-delete-old-pods

**id-c3po-newpod-create-n**  
c3ponewpodcreaten  
Nov 21, 2016 - 3:12:31 AM  
0th 19m 43s  
JobID: 38427  
submitted by: id-newpod-create-n



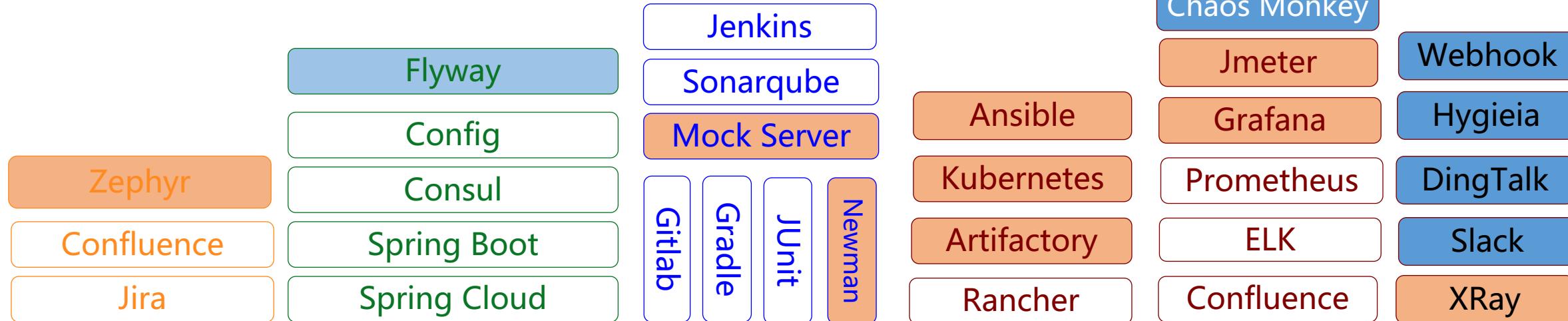
# 自己搭建流水线 - 快速POC



数据

DevOps 统一门户 & 可视化

工具



方法技术



策略



精 益 思 想

需求

设计

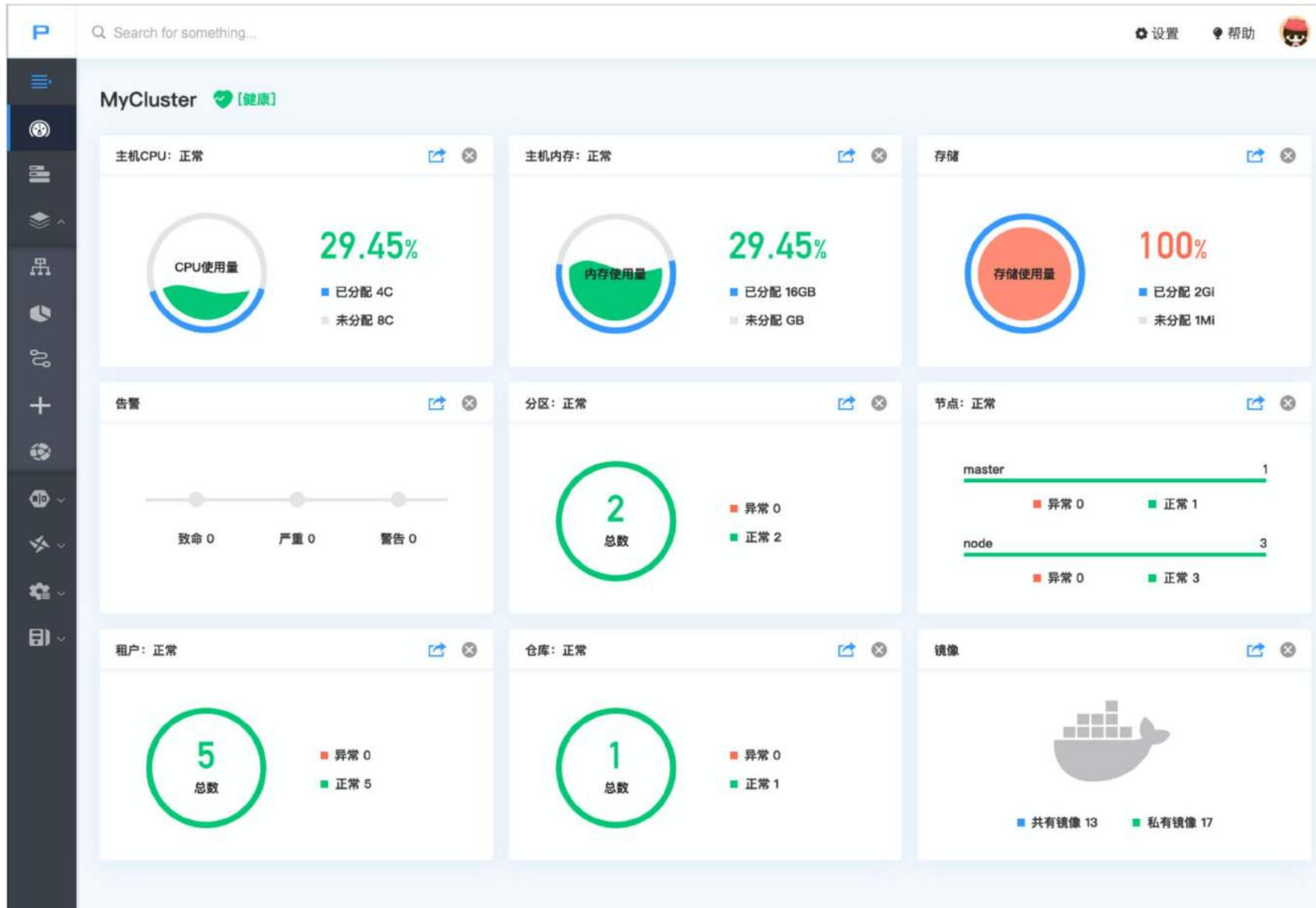
构建

测试

发布

运维

# DevOps 平台建设



扫微信联系我们

# Q&A

马致杰  
[george@jfrogchina.com](mailto:george@jfrogchina.com)



JFrog公众号

