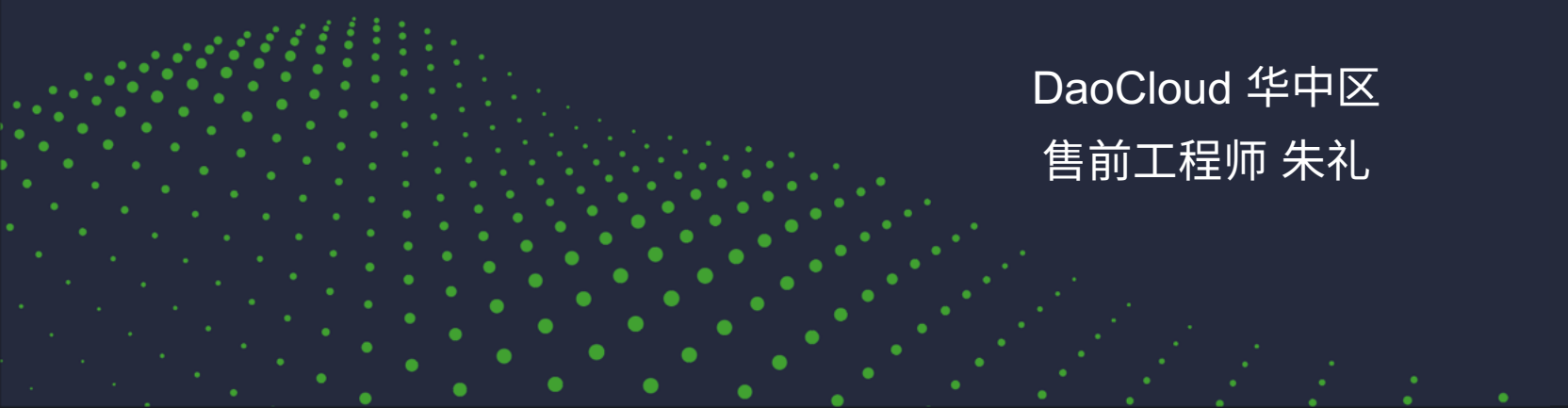




聊聊 Packer 和 Dockerfile

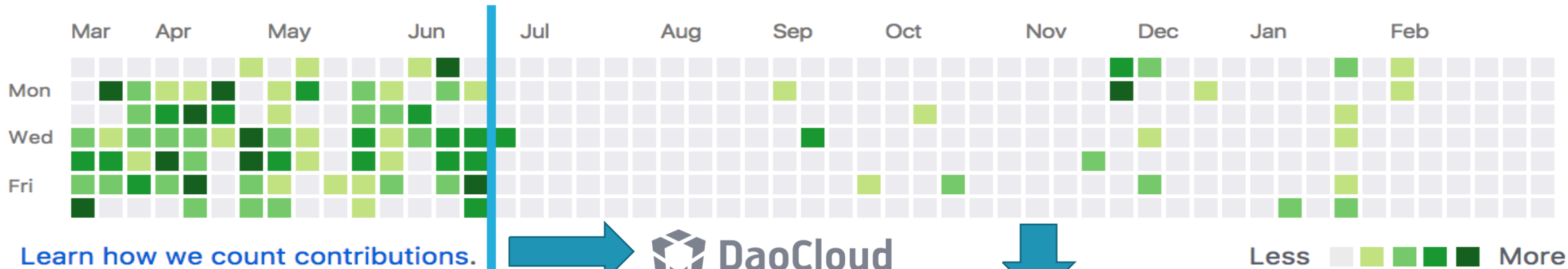
自动化配置 代码段 复用的思考

DaoCloud 华中区
售前工程师 朱礼



简介

GITHUB ID: footearth
<https://github.com/footearth>



<https://github.com/react-cfx>

- 函数式入门
- Packer + Docker

10年
会计 -> 运维 -> 研发 -> 售前

10年 真正的开源开发者
-> or
真正的开源布道师



与 Docker && DaoCloud 结缘

- 14 年 听闻 Docker
 - 媒体上看到 DaoCloud 成立
 - 蠢蠢欲动
- 15 年 Docker 实操
 - 开始学习 docker
 - 开始参与社区活动，在上海 DaoCloud 参加了生日会
- 16 年 投身事业
 - 在武汉 meetup 做了一场开发者使用 Docker 的分享
 - 7月进入武汉团队，做售前工作
- 17 年 成都生日会，我又来了，希望以后还有机会来

一个观点一个愿景

观点：

我们正处于配置式自动化时代，下一个阶段是程序式自动化时代
在程序式自动化时代，ops 岗位没有 dev 能力的人是很难生存下去的。
不是愿意不愿意的问题。而是会有大把具有 dev 能力的人竞争这个岗位。

愿景：希望在不远的将来，国内真正迎来真正开源的真正春天。

没有听过大师们怎么讲，资料看的有限
一家之言，如有理解不一致，欢迎线下交流
感谢老板感谢同事，把我逼到了这个高度
没有他们，我需要花更多时间想清楚究竟想传达什么

自动化工具链四个阶段

Ops	第一阶段 图形化	打碎	
+	第二阶段 描述配置自动化		争夺控制权
Dev	第三阶段 程序配置自动化	重构	自由、可控
=			
DevOps	第四阶段 自定义图形自动化	自主	

DevOps S 典故

DevOps從比利時萌芽紅遍全球

Patrick Debois把Dev及Ops結合成DevOps，而因為活動有兩天，他決定另外再加上Days，所以活動名稱就成了DevOpsDays，並在當年的10月30及31日在比利時根特城舉行。活動結束後，社群間的對話仍然在推特上持續進行，由於推特公開發文有140字元的限制，社群決定刪掉後面的「Days」，採改用#DevOps在推特上進行討論。

很快的，DevOpsDays走出了比利時，成為定期舉辦及吸引開發社群參與的全球會議，並在John Willis、DTO Solutions創辦人Damon Edwards及Puppet實驗室共同創辦人Andrew Clay Shafer等人的幫助下，美國也舉辦了第一個DevOpsDays。

什么是DevOps?

DevOps (Development和Operations的组合词) 是一种重视「软件开发人员 (Dev)」和「IT运维技术人员 (Ops)」之间**沟通合作的**文化、运动或惯例。透过**自动化**「软件交付」和「架构变更」的**流程**，来使得构建、测试、发布软件能够更加地**快捷、频繁和可靠**。

目标：又好又快

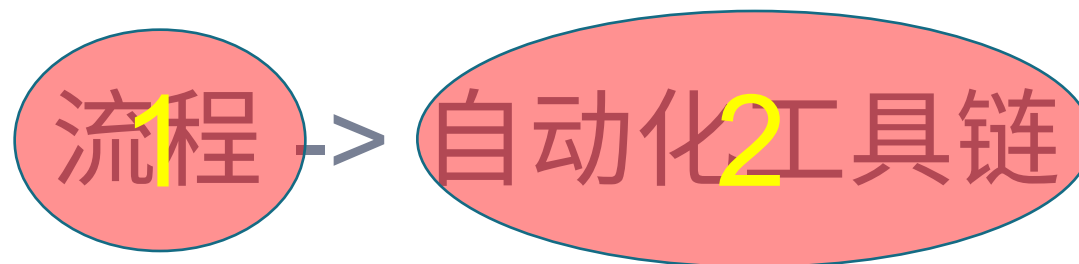
—— Wiki Pedia

推演

目标：又好又快

共识：需要DevOps

怎么做？

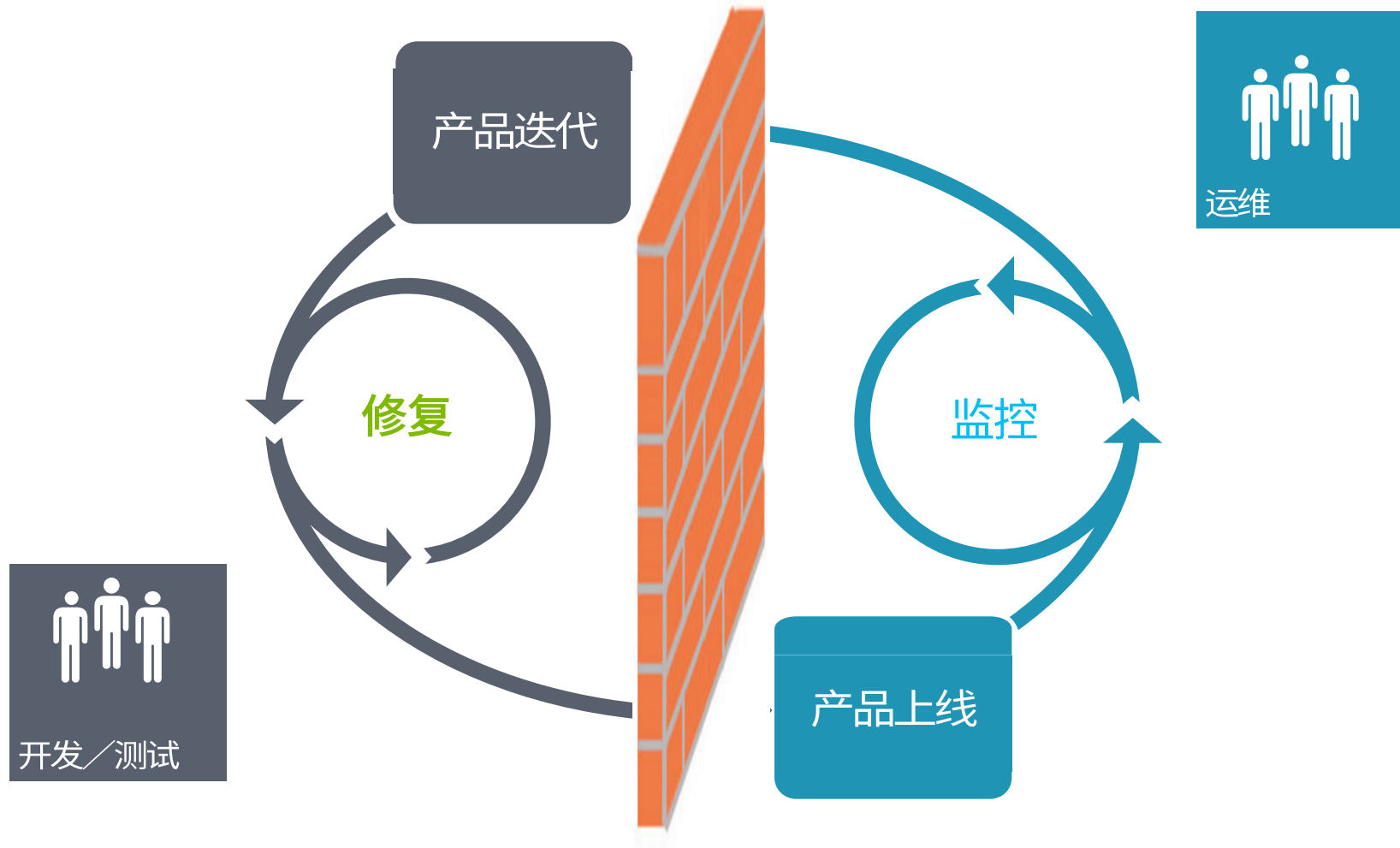


Defined -> Delivered

工具森林

最佳3(合适) 工具链组合

流程



Dev

项目实施

Ops

迭代 敏捷

用户故事

开发

开发

开发

...

提交上线

问题定位, 修复, 提交...
定位, 修复, 定位, 修复...

资源规划

存储 / 网络

高可用

CMDB

标准监控

...

生产部署, 失败, 再... 部署成功
压测, 失败, 推回开发... “成功”...
500错误, 拒绝服务, 系统崩溃, 重启...



Dev

技能

Ops



程序语言

脚本语言

Java、Ruby、Python
PHP、Node、Go

Shell、Perl

版本控制
框架、库

监控、安全、日志

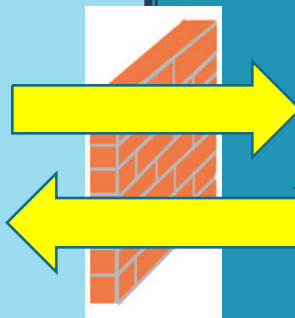
OOP、FP、
同步、异步

基础架构、存储、网络

封装、模块

依赖
包管理

命令、环境、配置



PERIODIC TABLE OF DEVOPS TOOLS (V2)



1 Fm Gh Github	3 Os Gt Git	4 En Dm DBmaestro
11 Fm Bb Bitbucket	12 Os Lb Liquibase	

开源
免费
自由
付费
企业级

- Os Open Source
- Fr Free
- Fm Freemium
- Pd Paid
- En Enterprise

源码管理
集成
部署
资源
智能监控

- SCM
- CI
- Deployment
- Cloud / IaaS / PaaS
- BI / Monitoring

数据库管理
制品管理
配置/部署
发行管理
日志

- Database Mgmt
- Repo Mgmt
- Config / Provisioning
- Release Mgmt
- Logging

构建
测试
容器化
协作
安全

- Build
- Testing
- Containerization
- Collaboration
- Security



19 Os Gl GitLab	20 En Rg Redgate	21 Os Mv Maven	22 Os Gr Gradle	23 Os At ANT	24 Os Fn FitNesse	25 Fr Se Selenium	26 Os Ga Gatling	27 Fr Dh Docker Hub	28 Os Jn Jenkins	29 Pd Ba Bamboo	30 Os Tr Travis CI	31 Pd Gd Deployment Manager	32 Os Sf SmartFrog	33 Os Cn Consul	34 Os Bc Bcfg2	35 Os Mo Mesos	36 En Rs Rackspace
37 Os Sv Subversion	38 En Dt Datical	39 Os Gt Grunt	40 Os Gp Gulp	41 Os Br Broccoli	42 Fr Cu Cucumber	43 Os Cj Cucumber.js	44 Fr Qu Qunit	45 Os Npm npm	46 Fm Cs Codeship	47 Pd Vs Visual Studio	48 Fm Cr CircleCI	49 Fr Cp Capistrano	50 Fr Ju JuJu	51 Os Rd Rundeck	52 Os Cf CFEngine	53 Fr Ds Swarm	54 Os Op OpenStack
55 Os Hg Mercurial	56 En Dp Delphix	57 Fr Sb sbt	58 Os Mk Make	59 Os Ck CMake	60 Fr Jt JUnit	61 Fr Jm JMeter	62 Fr Tn TestNG	63 Os Ay Artifactory	64 Fm Tc TeamCity	65 Fm Sh Shippable	66 Os Cc CruiseControl	67 En Ry RapidDeploy	68 Fm Cy CodeDeploy	69 En Oc Octopus Deploy	70 En No CA Nolio	71 Os Kb Kubernetes	72 Fm Hr Heroku
73 En Cw ISPW	74 En Id Idera	75 Os Msb MSBuild	76 Os Rk Rake	77 Fr Pk Packer	78 Os Mc Mocha	79 Fr Km Karma	80 Os Jm Jasmine	81 Os Nx Nexus	82 Os Co Continuum	83 Fm Ca Continua CI	84 Pd So Solano CI	85 En Xld XL Deploy	86 En Eb ElasticBox	87 Fm Dp Deploybot	88 En Ud UrbanCode Deploy	89 Os Nm Nomad	90 En Os OpenShift

XebiaLabs

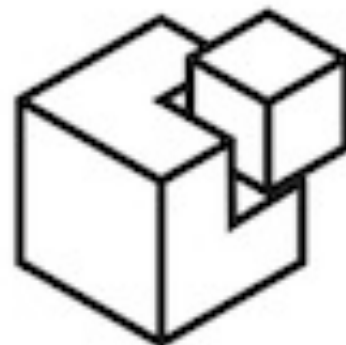
Follow @xebialabs

91 En Xlr XL Release	92 En Ur UrbanCode Release	93 En Bm BMC Release Process	94 En Hp HP Codar	95 En Au Automic	96 En Pl Plutora Release	97 En Sr Serena Release	98 Pd Tfs Team Foundation	99 Fm Tr Trello	100 Pd Jr Jira	101 Fm Rf HipChat	102 Fm Sl Slack	103 Fm Fd Flowdock	104 Pd Pv Pivotal Tracker	105 En Sn ServiceNow
106 Os Ki Kibana	107 Fm Nr New Relic	108 En Dt Dynatrace	109 Os Ni Nagios	110 Os Zb Zabbix	111 En Dd Datadog	112 Os El Elasticsearch	113 Fm Ad AppDynamics	114 En Sp Splunk	115 Fm Le Logentries	116 Fm Sl Sumo Logic	117 Os Ls Logstash	118 Os Sn Snort	119 Os Tr Tripwire	120 En Ff Fortify

工具森林



配置/服务开通 工具



SALTSTACK



ANSIBLE

静态环境定义 → 动态环境调整
OS 搭建 → 应用部署

PERIODIC TABLE OF DEVOPS TOOLS (V2)

开源 源码管理 数据库管理 构建 测试 容器化 协作 安全

免费 集成 制品管理 配置/部署 服务开通 容器化

自由 部署 资源 发行管理 日志

付费 资源 智能监控

企业级 智能监控

Os Open Source
Fr Free
Fm Freemium
Pd Paid
En Enterprise

SCM
CI
Deployment
Cloud / IaaS / PaaS
BI / Monitoring

Database Mgmt
Repo Mgmt
Config / Provisioning
Release Mgmt
Logging

Build
Testing
Containerization
Collaboration
Security



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XebiaLabs

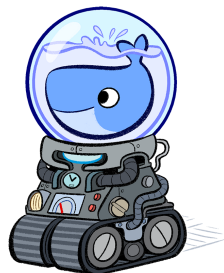
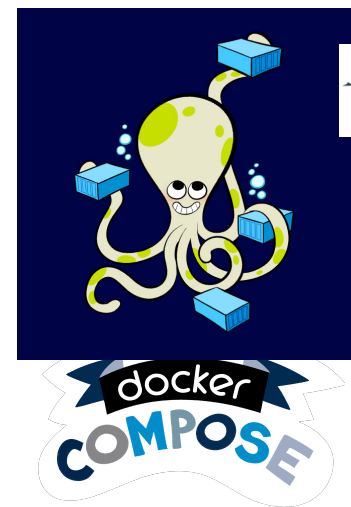
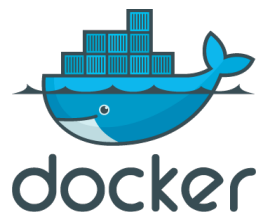
Follow @xebialabs

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工具森林



Docker



Docker Engine

Docker Image

Docker Container

Docker Registry

Dockerfile

基础设施标准化

应用交付标准化

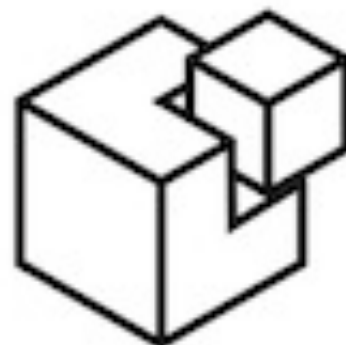
运维管理标准化

分发部署标准化

- 文本配置 -> 简单高效
- 源码管理 -> 协作历史可追溯

- Write once
- build everywhere
- run everywhere

配置/服务开通 工具



SALTSTACK



ANSIBLE

静态环境定义 → 动态环境调整

外部宿主机环境 →  应用环境
docker

只换不修

Cloud Native Landscape v0.9.3



Application Definition & Development

Languages & Frameworks Databases Streaming Source Code Management Application Definition Registry Services CI / CD 3rd Party APIs

Orchestration & Management

Scheduling & Orchestration Coordination & Service Discovery Service Management

Runtime

Cloud-Native Storage Container Runtime Cloud-Native Network

Provisioning

Infrastructure Automation Host Management / Tooling Secure Images

Infrastructure

amazon web services, Google Cloud Platform, Microsoft Azure, IBM Bluemix, DigitalOcean, ORACLE, Alibaba Cloud, openstack, vmware, packet

Platforms

Observability & Analysis

Monitoring

Logging

Tracing

Container

内

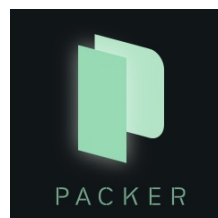
Dockerfile

外


Host



配置/服务开通 工具



静态环境定义 → 动态环境调整

外部宿主机环境 →  应用环境
docker

PERIODIC TABLE OF DEVOPS TOOLS (V2)

开源
免费
自由
付费
企业级

Os Open Source
Fr Free
Fm Freemium
Pd Paid
En Enterprise

源码管理
集成
部署
资源
智能监控

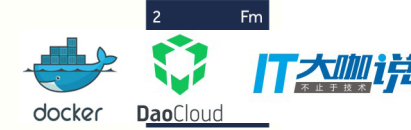
SCM
CI
Deployment
Cloud / IaaS / PaaS
BI / Monitoring

数据库管理
制品管理
配置资源
发行管理
日志

Database Mgmt
Repo Mgmt
Config / Provisioning
Release Mgmt
Logging

构建
测试
容器化
协作
安全

Build
Testing
Containerization
Collaboration
Security



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XebiaLabs

Follow @xebialabs

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工具森林



新的选择：面向程序自动化

Python



Fabric

Dev的一些尝试

Harp: 239 stars

<https://github.com/bom-d-van/harp>

Perl



(R)?ex / rexify

Flightplan: 1516 stars

<https://github.com/pstadler/flightplan>

Sup

1400 stars

<https://github.com/pressly/sup>

Gopistrano: 98 stars

<https://github.com/alanchavez88/gopistrano>

<https://goo.gl/evPsKI>

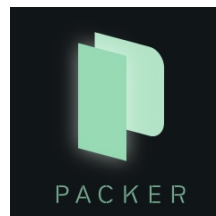
配置/服务开通 工具



Fabric



(R)?ex / rexfy



静态环境定义 → 动态环境调整

外部宿主机环境 → 应用环境



Packer + Docker



Base OS ENV



VAGRANT



docker

App OS ENV

工作中典型场景

- SE: Demo、POC
- No docker on docker
- Docker on VM

HashiCorp

DevOps Delivered

docker DaoCloud IT大咖说 不止于技术

PROVISION SECURE AND RUN ANY INFRASTRUCTURE FOR ANY APPLICATION.

PROVISION



Vagrant

Create and configure portable development environments



Packer

Create platform specific machine images from a single source



Terraform

Create, combine and manage infrastructure across multiple providers

SECURE



Vault

Centrally store, secure and control access to distributed secrets

RUN



Nomad

Cluster manager and scheduler to deploy applications across any infrastructure



Consul

Distributed highly available tool for service discovery, configuration and orchestration



HashiCorp

HashiCorp is an open-source software company based in San Francisco, California. HashiCorp provides open source tools and commercial products for datacenter management: application development, delivery, and maintenance. It was founded in 2012 by Mitchell Hashimoto and Armon Dadgar.



HashiCorp



APPLICATION DELIVERY LIFECYCLE

TEAMS IN PARALLEL

RUN
Applications

DEVELOPERS

Vagrant | Nomad | Consul

SECURE
Application Infrastructure

SECURITY

Vault

PROVISION
Infrastructure

OPERATORS

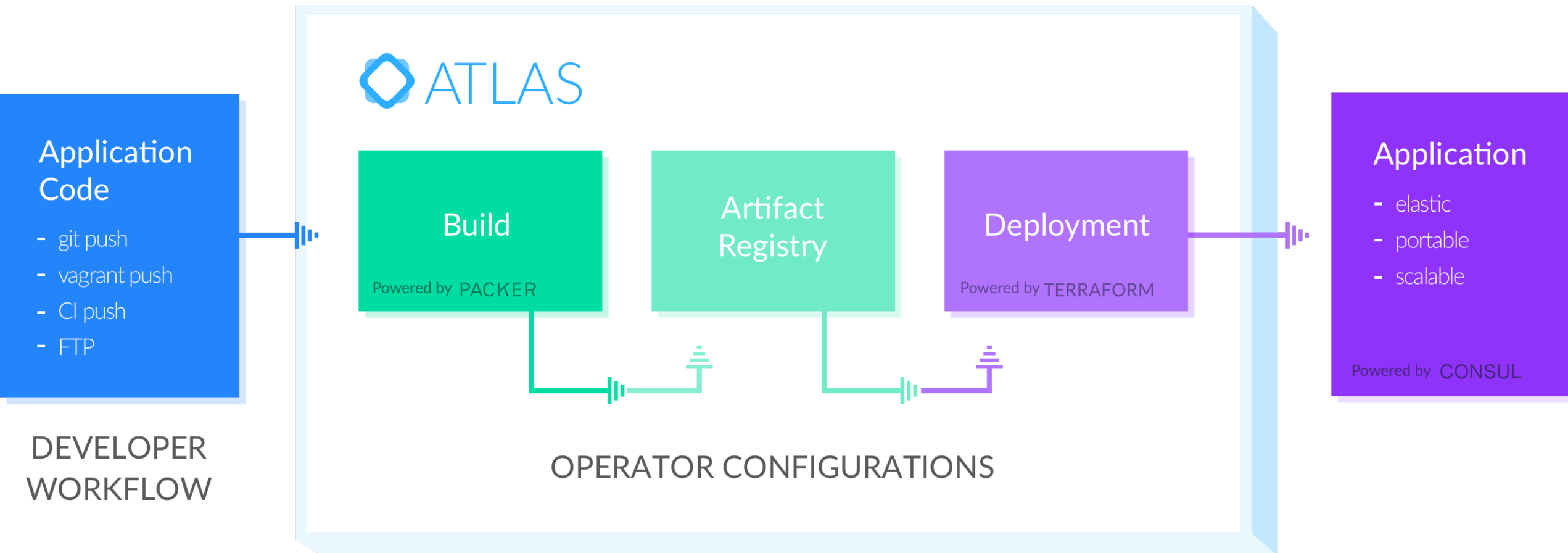
Packer | Terraform

- MONITOR • Consul
- DEPLOY • Nomad
- SECURE • Vault
- PROVISION • Terraform
- PACKAGE • Packer
- TEST • Vagrant
- BUILD • Vagrant

Defined | Delivered



DevOps





基因很重要，船大难掉头

- 微软
- Vmware
- Facebook
- 腾讯
- 阿里

任重而道远



HashiCorp

We make open source tools for automating the modern data center.

San Francisco, CA <https://www.hashicorp.com> hello@hashicorp.com



DaoCloud.io

Shanghai DaoCloud Co.,Ltd

Shanghai <https://www.daocloud.io> info@daocloud.io

Repositories

People 21

Repositories

People 52

Teams 15

Projects 1

Search repositories...

Type: All

Language: All

Search repositories...

Type: All

Language: All

terraform

Terraform is a tool for building, changing, and combining infrastructure safely and efficiently.

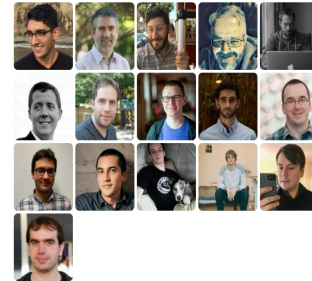


Top languages

- Go
- Ruby
- Shell
- HCL
- JavaScript

People

21 >



consul

Consul is a tool for service discovery, monitoring and configuration.



Go 7,485 stars 2,723 forks Updated 12 minutes ago

nomad

A Distributed, Highly Available, Datacenter-Aware Scheduler



Go 2,291 stars 414 forks Updated 5 hours ago

vault

A tool for managing secrets.



Go 6,364 stars 798 forks Updated 7 hours ago

dce-jenkins-plugin

JavaScript 4 forks Updated 3 hours ago



docker-demo-spring-boot

Java 3 stars 26 forks Updated a day ago



portcheck

Go 1 fork Updated 3 days ago



ecar

Private

Java 1 star Updated 3 days ago



go-bitbucket

Forked from drone/go-bitbucket

Go bindings for the Bitbucket API

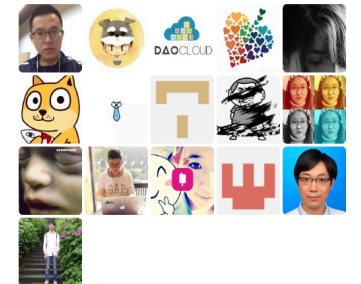
Go 17 forks Updated 7 days ago

Top languages

- Shell
- Go
- Python
- JavaScript
- PHP

People

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真心希望真正的开源时代早点到来!!!



谢谢大家!!!

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