



Software Innovation and R&D Management

Rui Ren

2019-02-27



上海交通大学
SHANGHAI JIAO TONG UNIVERSITY



Introduction



- **Get in touch with industry**
 - **Technologies**
 - **Methodologies**
- **Practice the methodologies**



Schedule



- **3-4 Open Day**
- **2-3 Lectures from industry**
- **8-10 Lectures**
 - **Introduction**
 - **Product Thinking**
 - **R&D Management Technologies**
 - **Evolution of Technology**



Credit



- **Attendance, 10%**
- **2 Technical Reports, 40%**
- **Project, 50%**



Methodology of Software Lifecycle Management

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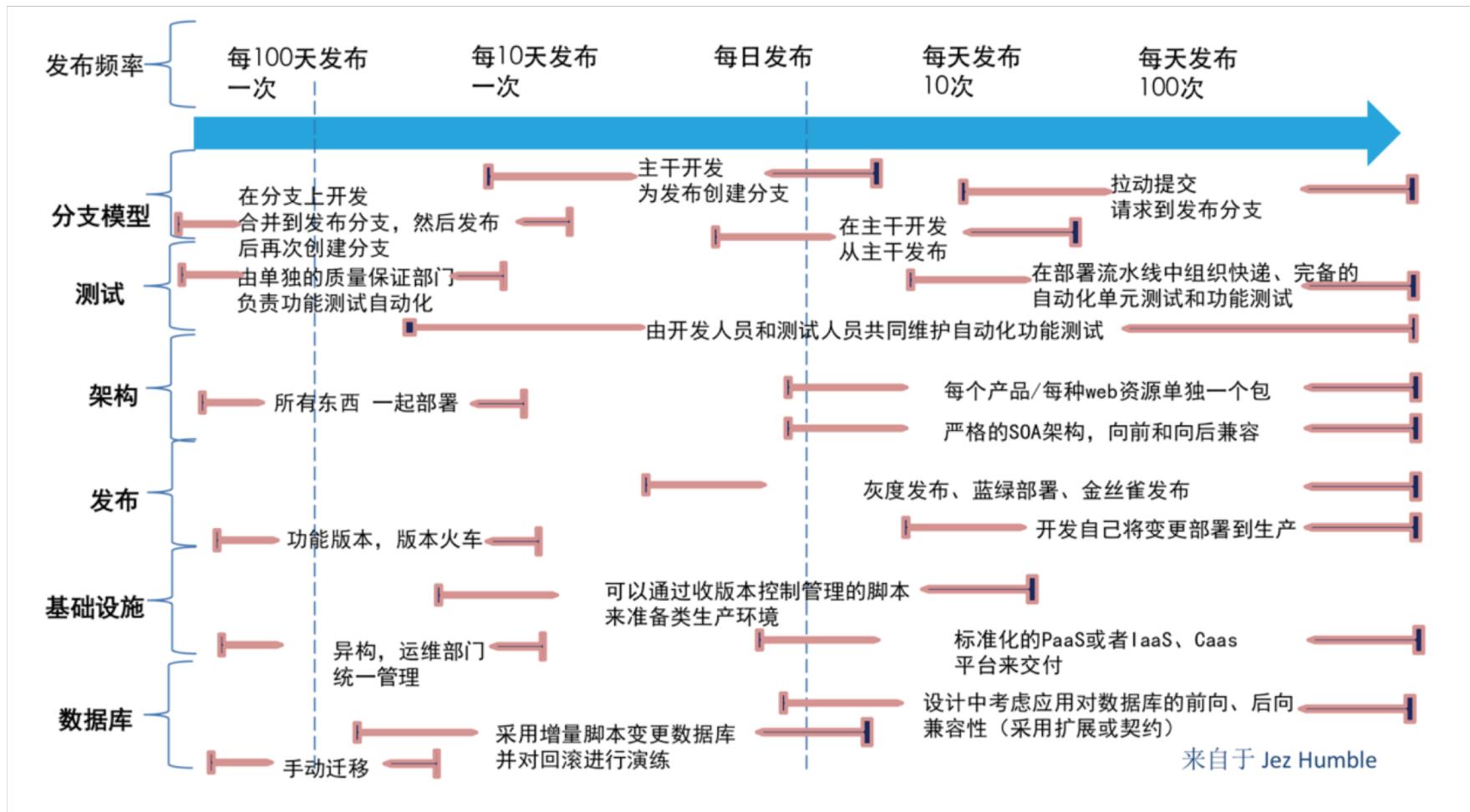


Background

- **More complicated**
 - **Layers**
 - **Technologies**
 - **Dependencies**
- **Faster change, deliver, deploy**
- **Software as a Service**



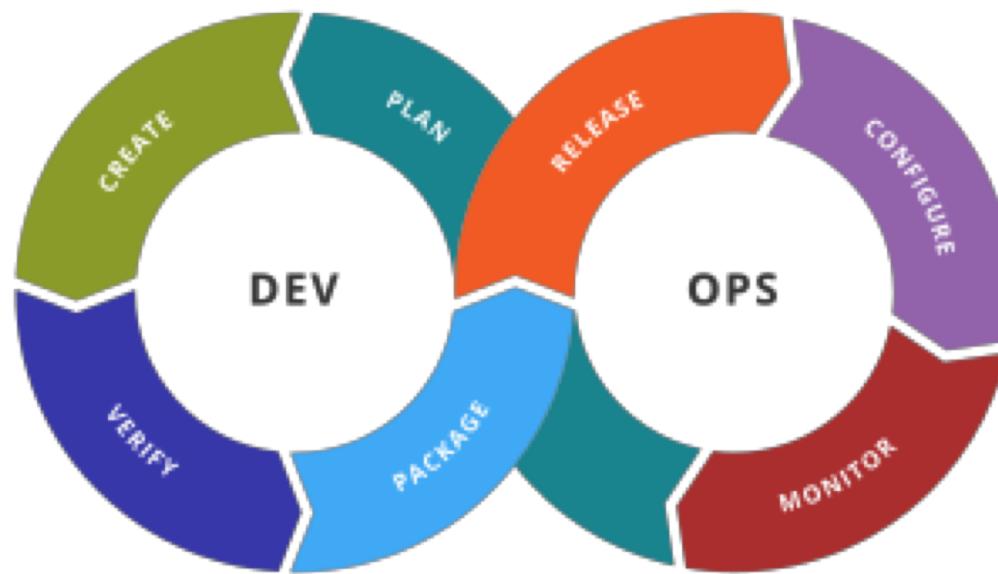
Faster Deploy





Software Lifecycle

- Development & Operation





DevOps

- DevOps is a term used to refer to a set of practices that emphasize the *collaboration* and *communication* of both *software developers and information technology (IT) professionals* while *automating the process of software delivery and infrastructure changes*
 - It aims at establishing a culture and environment where building, testing, and releasing software can happen rapidly, frequently, and more reliably.



DevOps Toolchain

- **Code** — Code development and review, version control tools, code merging;
- **Build** — Continuous integration tools, build status;
- **Test** — Test and results determine performance;
- **Package** — Artifact repository, application pre-deployment staging;
- **Release** — Change management, release approvals, release automation;
- **Configure** — Infrastructure configuration and management, Infrastructure as Code tools;
- **Monitor** — Applications performance monitoring, end-user experience.



Tools



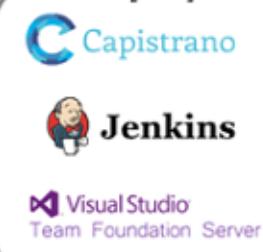
Develop



Test



Deploy



Monitor



Log



Configuration Management



Security



Collaboration Platform





Tools



DevOps Enabler Tools v2 (Caution!!!! : Consider only after DevOps mindset is established)

Infra-as-code



ANSIBLE



puppet



CHEF™



SALTSTACK

CI/CD



Jenkins



shippable



Bamboo



TeamCity

Test Automation



Cucumber



appium



APACHE JMeter™

Container



docker



Rocket



unik

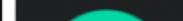
Orchestration



kubernetes



MESOS



MARATHON



Deployment



XDeploy



Octopus



vamp



DBmaestro

DevOps for Databases



Elastic Beanstalk

Measurement



New Relic.



elasticsearch.



logstash



Kibana



sumologic

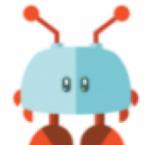


DATADOG

ChatOps



HU-BOT



LITA



COG v0.5





Tools



code.dianpingoa.com

Dashboard

Projects

- sai.lv pushed to branch addHuiinfo at midas / lego-mt-build 17:00 - 21:00
- sai.lv pushed to branch addHuiinfo at midas / lego-mt-build 17:00 - 21:00
- caxiaowei pushed to branch 20161031cpt at midas / shop 17:00 - 21:00
- 姚坤 pushed to branch master at nextgencrm / adps-mgm 17:00 - 21:00
- 姚坤 accepted merge request #353010 at nextgencrm / adps-mgm 17:00 - 21:00
- yichun.li pushed to branch master at midas / midas-intelli 17:00 - 21:00

CAT (Central Application Tracking)

时间段 [1小时] [2小时] [4小时] [6小时] [8小时] [12小时] [24小时] [48小时] 聚合 [-7d] [-1d] [-1h] [+1h]

开始 2016-11-07 17:00 结束 2016-11-07 21:00 查询条件 TAG_业务大盘 Go 点击查看数据详情

团购券(次数) 退券_综合类(次数)
[项目: rs-receipt-consume-service 负责人: libing.guo 手机: 13621945119]

QQ登陆ALL(次数) 微信登陆ALL(次数)

Value/分钟 Value/分钟

当值 基线值 当值 基线值

数据平台 主数据中心

Home 表名/列名/表注释/列注释 一站式搜索

元数据统计 热门数据

元数据统计

hive	mysql	指标	报表	gp	adhoc	邮件	log	hive_meituan	图表	sqlserver	页面	squirrel	es	gp_report61	redis
77,805	56,919	6,248	3,428	1,000	863	863	559	479	196	95	94	84	80	67	24

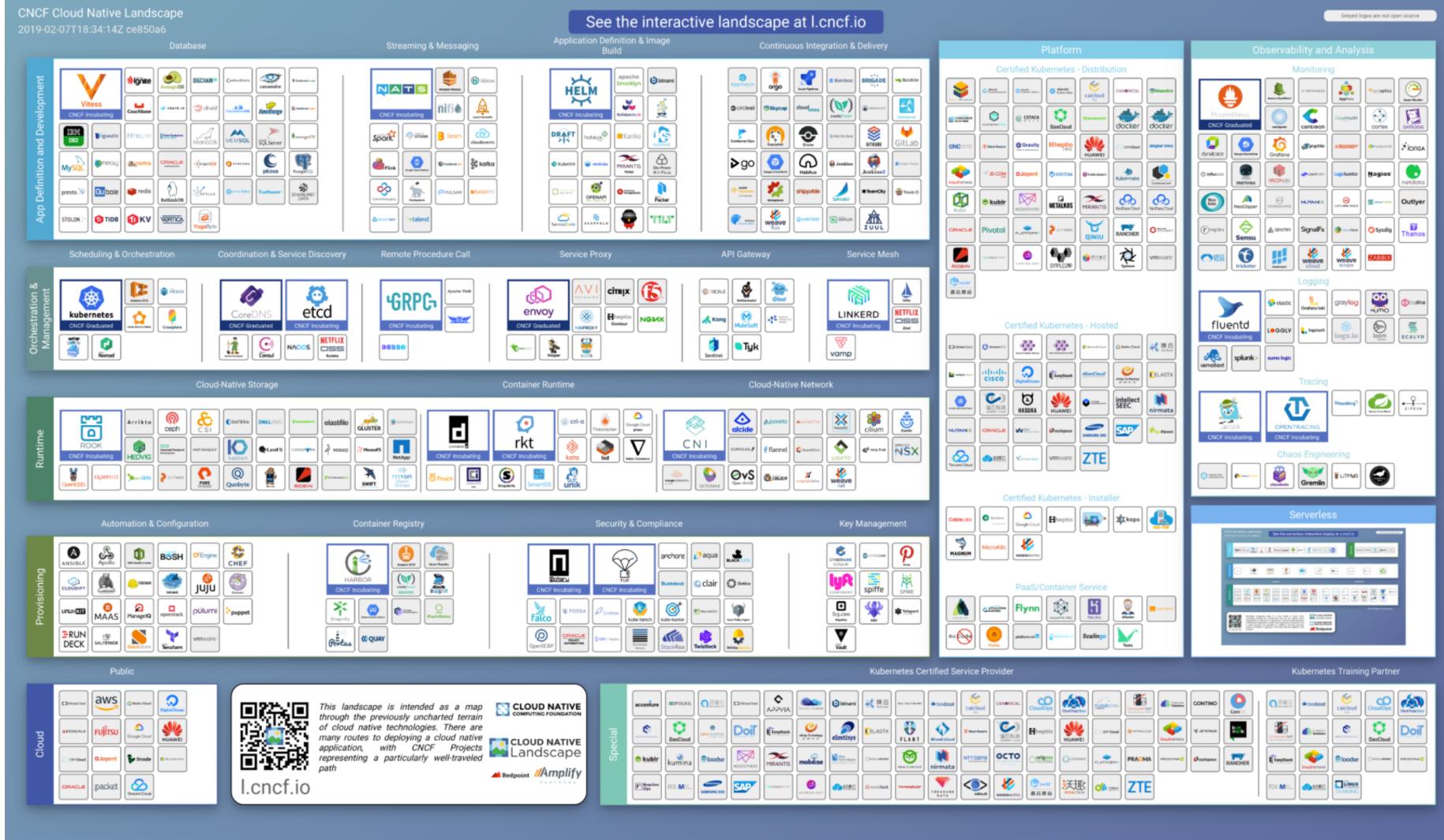
数据量

热门模型

- dpmid_dp_shop 孙文
- dpdw_traffic_base 岳海
- dpdw_wide_traffic_pv 岳海
- dpmid_dp_shop_ss 孙文
- dprpt_tgmktd_dealshop_d 王杰
- dpods_zs_citylist 张海
- dpdw_wide_traffic_mv 岳海
- dpdw_wide_trade_suc 程伟
- dpmid_shop_wide_sd 程伟
- dpmid_dp_review 曹文

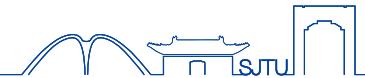


Cloud Native





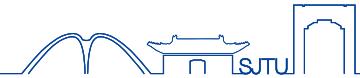
Project



- Propose a product
 - Methodology of Product Thinking
 - Practice



Project



- **Minimum DevOps Platform**
 - **Code**
 - **CI**
 - **CD**
 - **Infrastructure**
 - **Monitor**
- **Implement the prototype of your product to go through the DevOps flow**



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PPT



谢谢！

