

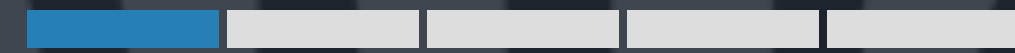


The Trend of DevOps in Cloud

— Qin Jianxiang, founder of OpsKitchen.com



Topic Definition





Topic Definition

What I am talking about



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1. System Ops

power, cable, hardware,
BIOS, RAID, OS

3. Application Ops

software, configuration,
data, CI, CD



2. Network Ops

router, switch, vlan



Challenges

What the difficult of app ops is



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Variety



Complexity



Dependency

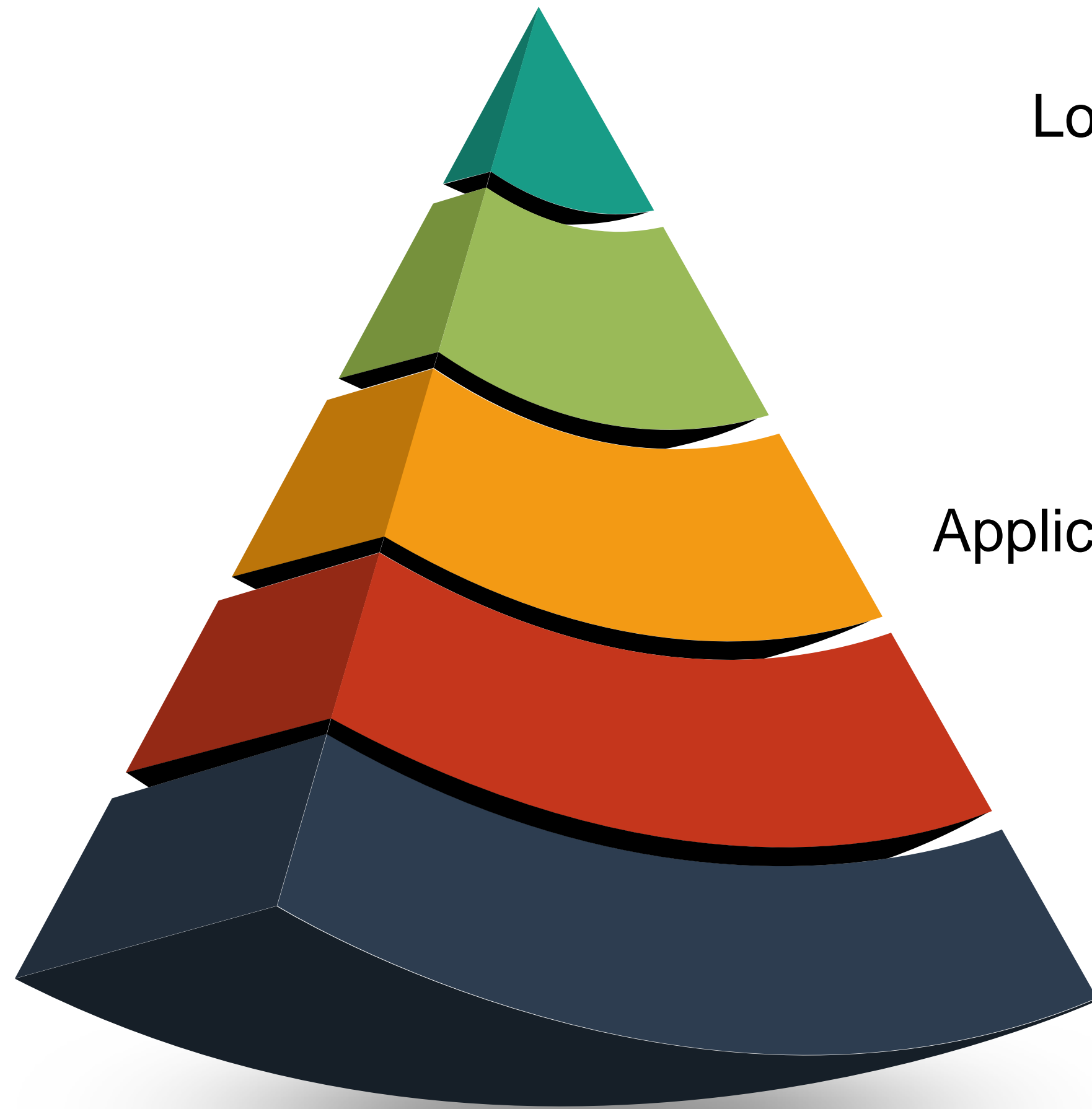


Architecture

How server side software works



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Load Balancer

Web Server

Application Server

Cache

Database



Security



High Availability

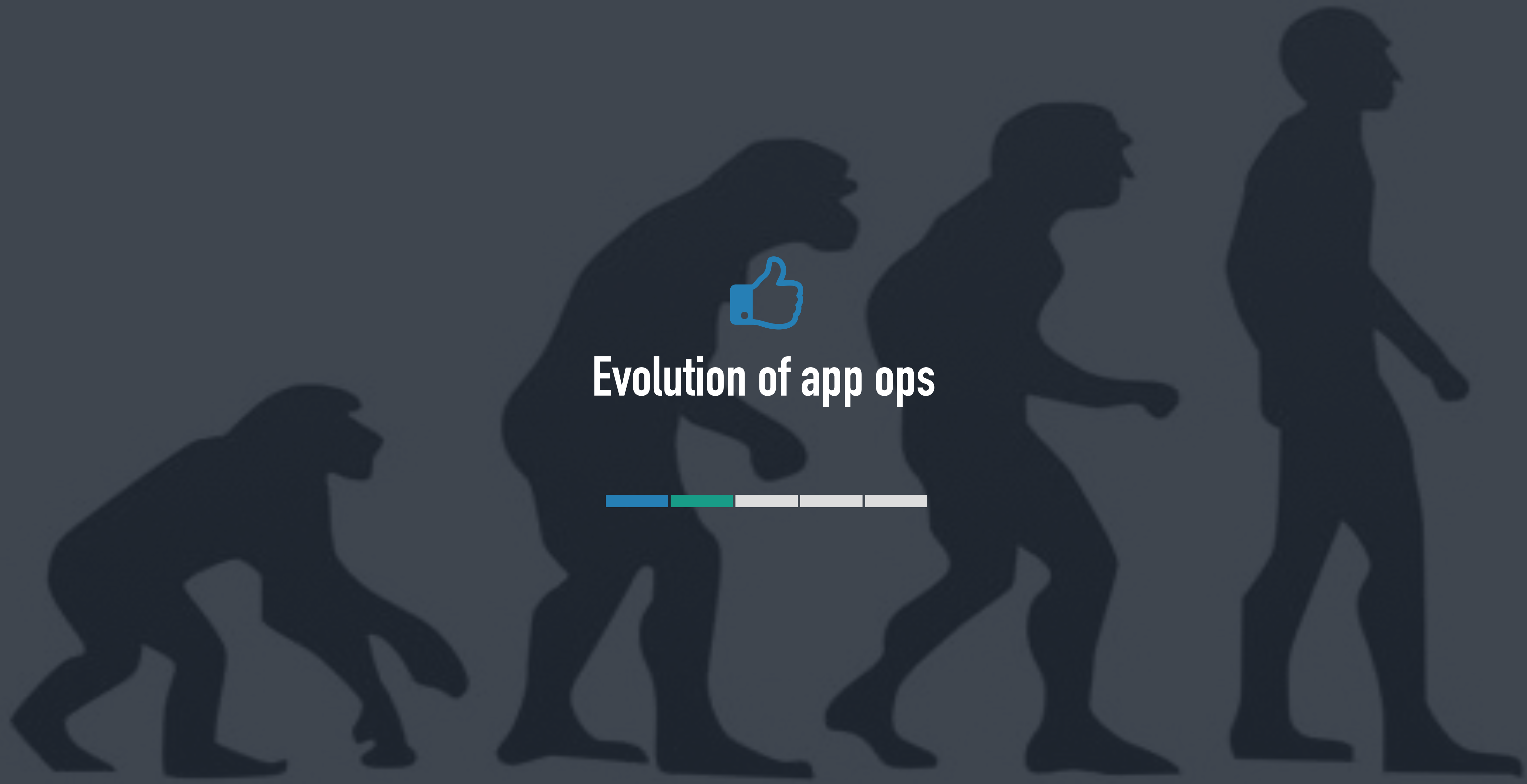


Scalability

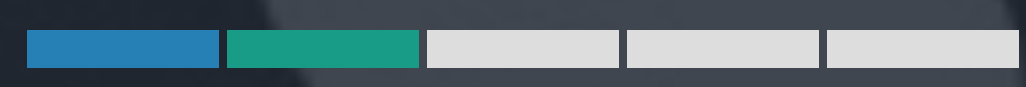


Cost





Evolution of app ops





Evolution

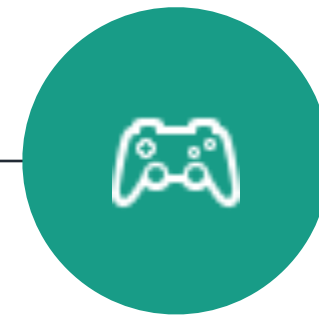
How app ops evolutes



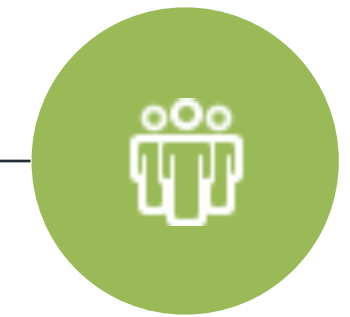
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Manually



Bash



DSL





Manually

By hands



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High flexibility

You can do anything you want



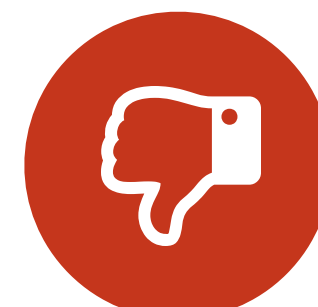
Easy to learn

Documents written in nature language



Low efficiency

Waste much time in downloading, compiling



Documents out of date

Doc does not exactly match what you executed



Bash

Automation by bash script



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```
mkdir /usr/src/nginx
cd /usr/src/nginx
#下载源码
curl -O http://nginx.org/download/nginx-1.9.15.tar.gz

#解压
tar zxf nginx-1.9.15.tar.gz
cd nginx-1.9.15

#编译
./configure --prefix=/usr/local/nginx --with-http_ssl_module
make

#安装
make install

#修改配置文件, 打开gzip
sed -i "s/^ #gzip on/gzip on/" /etc/nginx/nginx.conf
```



Accuracy

Script is for machine executing



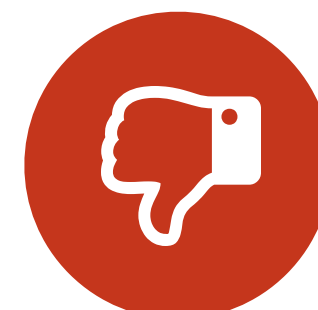
High efficiency

Run your script and go to have a cup of coffee



Critical features are missing

OOP, complex data structure, return value...



Lack of tool chain

IDE, framework, unittest, profiling

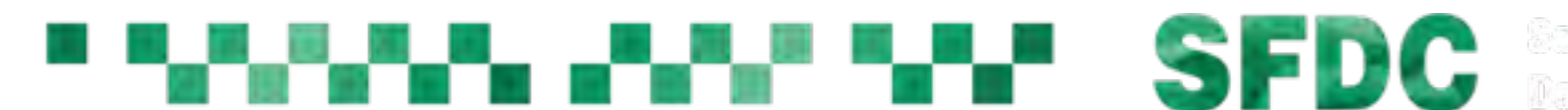


DSL

Automation by programming languages



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Puppet

The most successful DSL



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```
1 node default {
2   yumrepo {
3     "nginx-mainline":
4       descr => "nginx-mainline",
5       baseurl => "http://nginx.org/packages/mainline",
6       gpgcheck => 0;
7   }
8
9   package {
10    "nginx":
11      ensure => installed,
12      require => Yumrepo["nginx-mainline"];
13  }
14
15  augeas {
16    "enable gzip":
17      context => "/files/etc/nginx/nginx.conf",
18      changes => [
19        "set gzip on"
20      ],
21      require => Package["nginx"];
22  }
23
24  service {
25    "nginx":
26      enable => true,
27      ensure => running,
28      require => Augeas["enable gzip"];
29  }
30 }
```



company

Founded in 2005, total funding \$107M, revenue \$100M/Y



Customers

300+ of Forbes 500. In China: Sina, vipshop



Technology

Base on ruby, 20+ modules



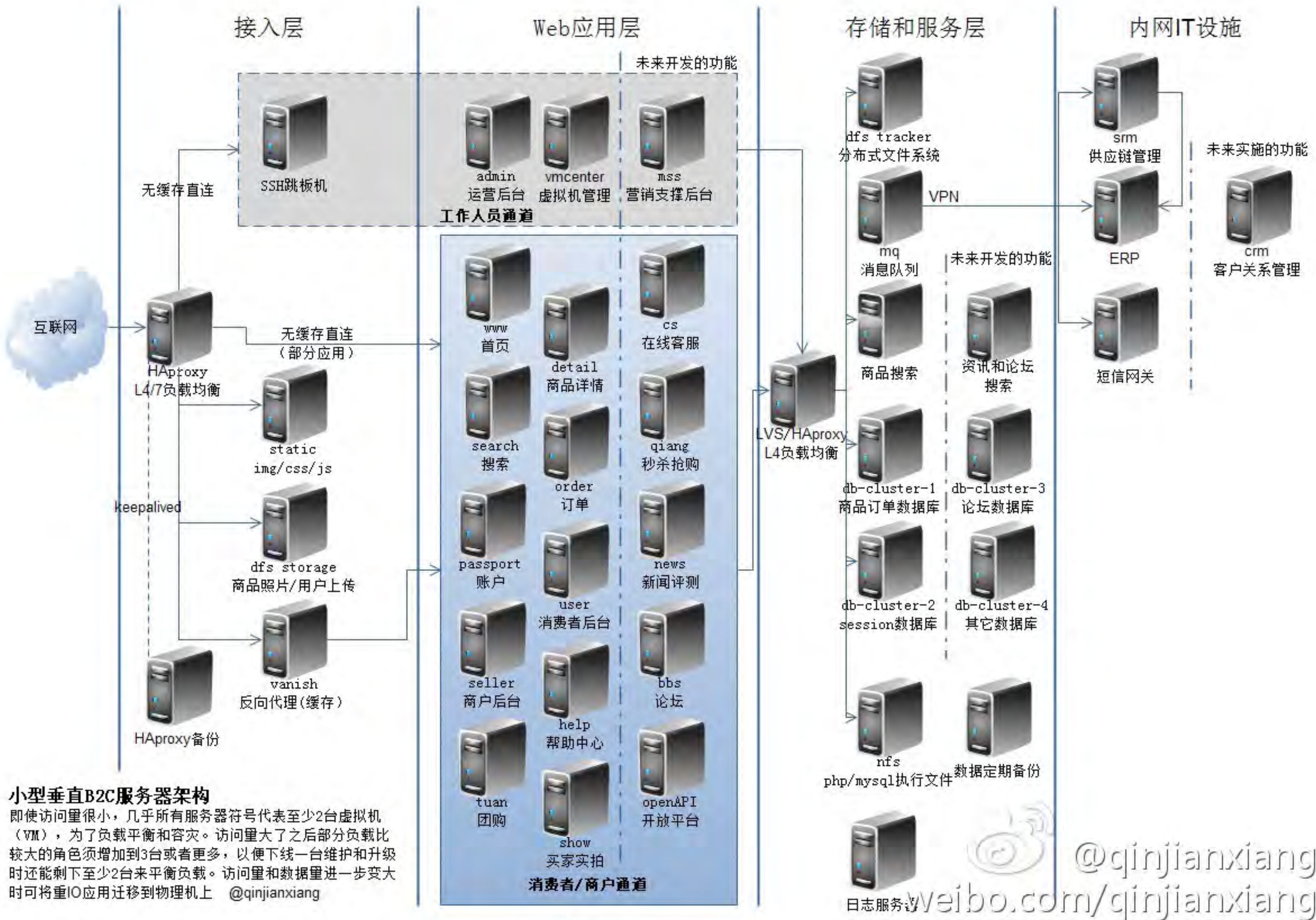
Community

4000+ 3rd party functions



Puppet-example

Framework based on puppet



An open source project
 Hosted on github.com



Features
 20+ linux server modules
 web, db, cache, vpn, lb...etc

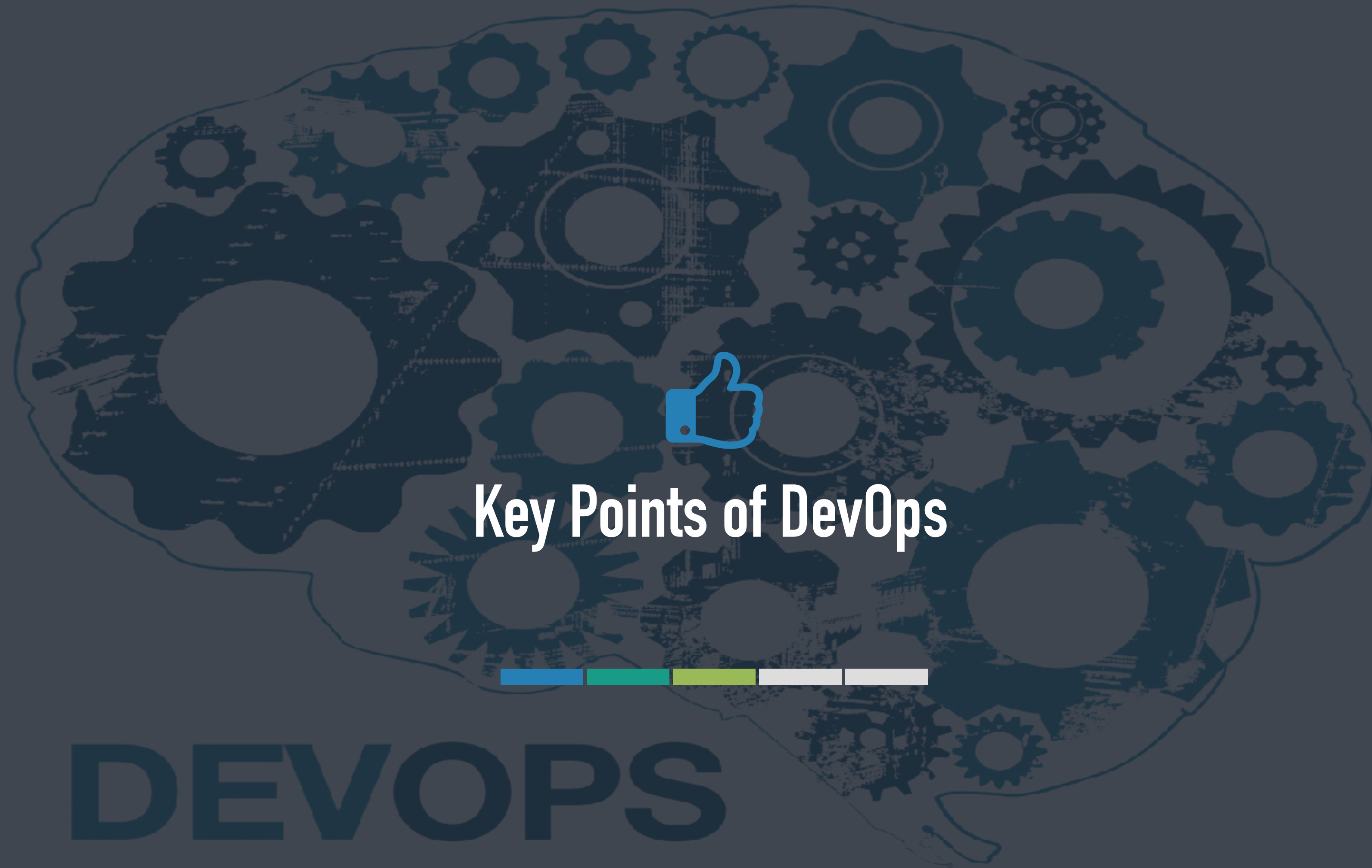


Users
 Some e-commerce enterprises
 Less than 200 servers



Pains of puppet
 Maintainability, performance

@qinjianxiang
 Weibo.com/qinjianxiang



Key Points of DevOps

DEVOPS



Agenda

List of the key points



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1. Programming

Use code instead of hands

2. Versioning

Move ops code into SCM

3. Consistency

Consistency of multi environment

4. Workflow

How the ops code applies to production



5. Testing

Auto testing

6. Template

Separate the variable and code

7. GUI

GUI and IDE

8. Integration

Integrate multi cloud with api

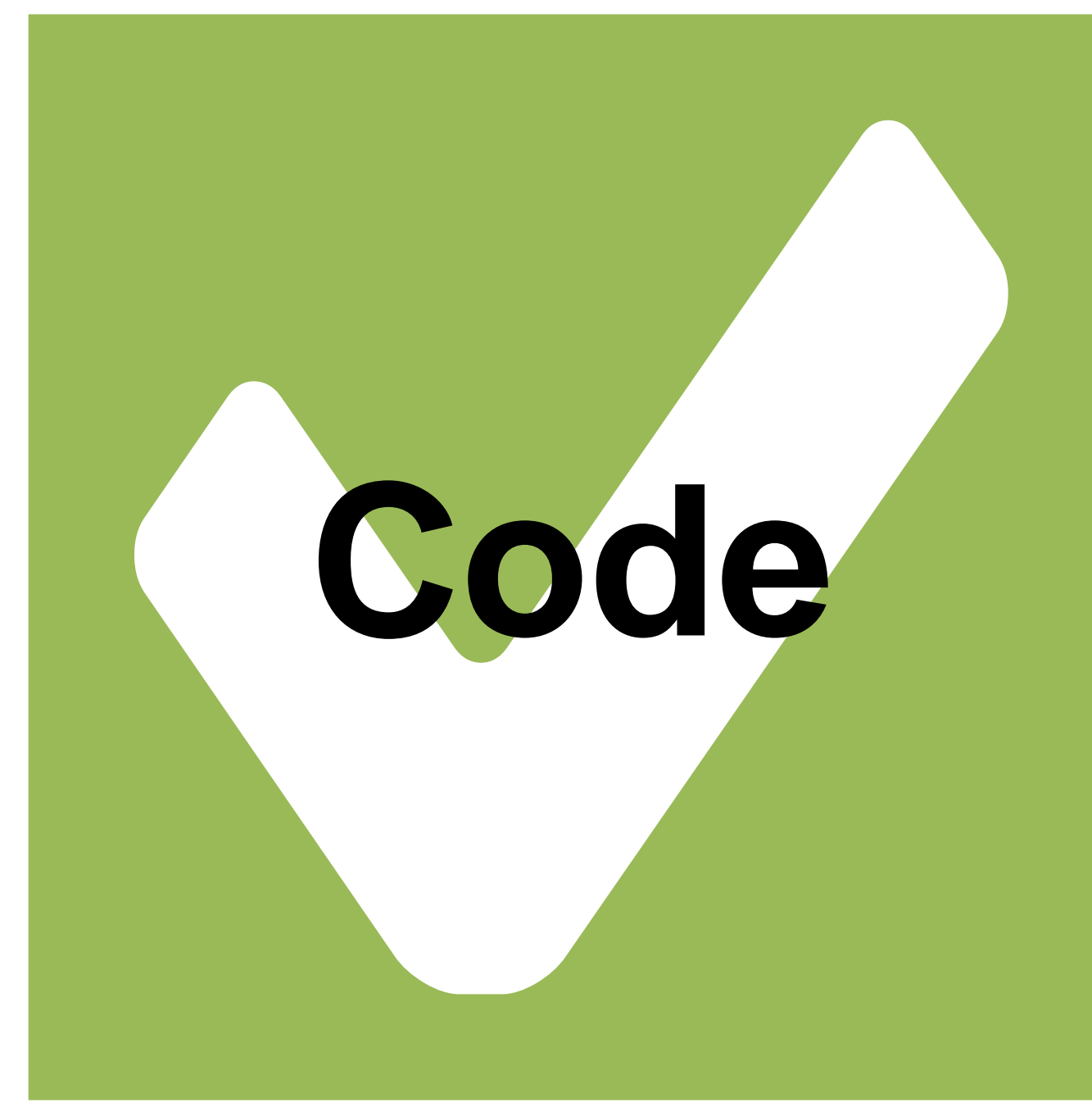


Programming

Use code instead of hands



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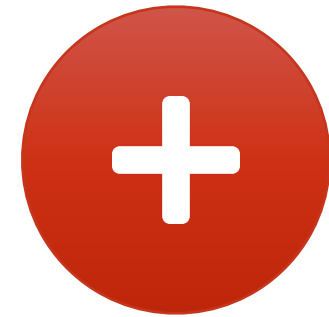


Versioning

Move ops code into SCM



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Branches

Copy and create new version



Diff

Review before deploy



Archives

Version snapshot, for roll-back



git





Consistency

Consistency of multi environment



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1 Difference leads to bug

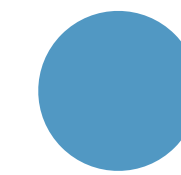
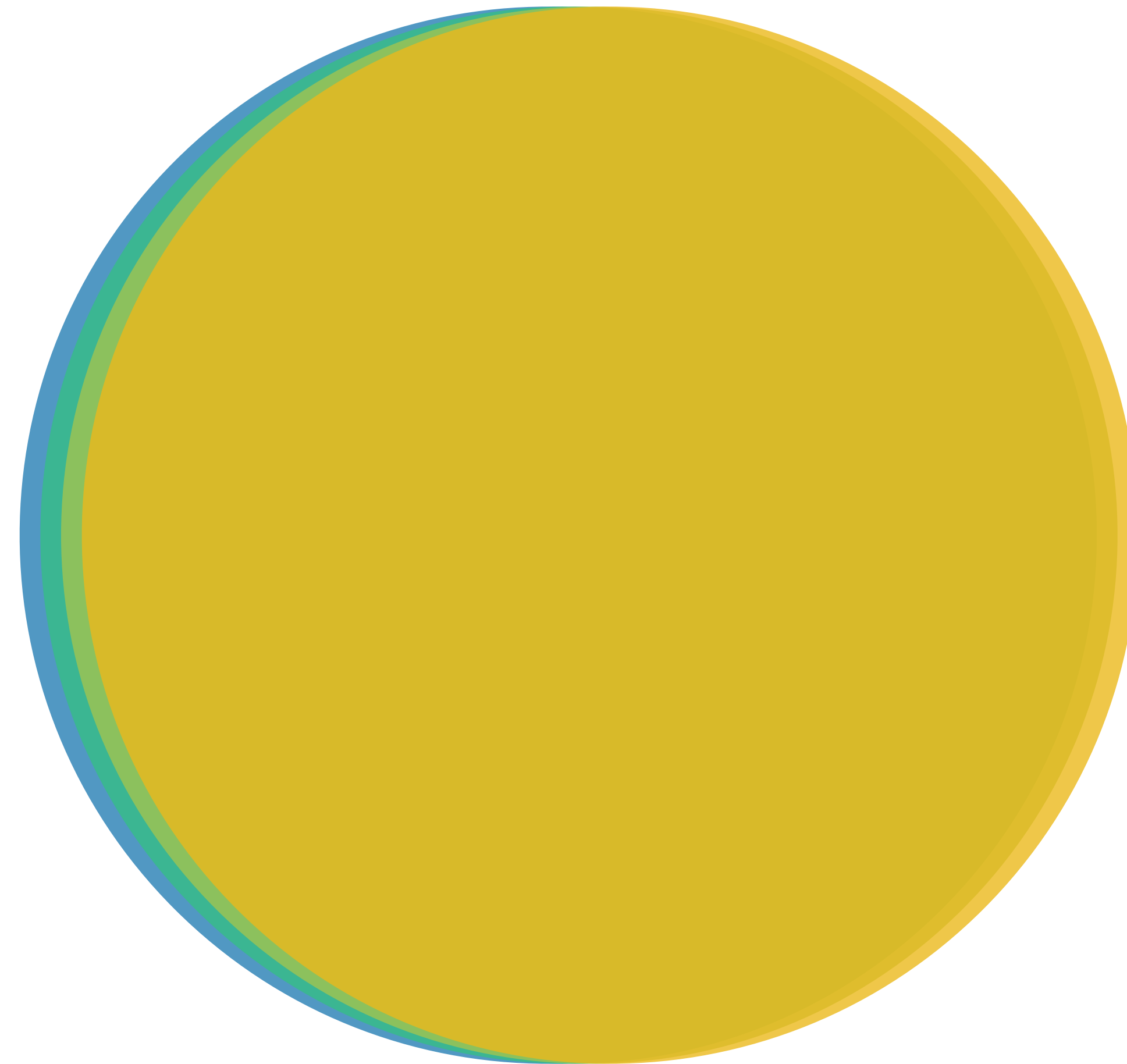
case study: www.tmall.com

▪

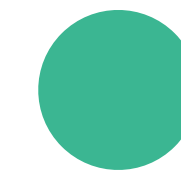
2 Necessary difference

package, daemon,
configuration, crontab, host

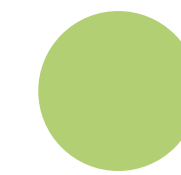
▪



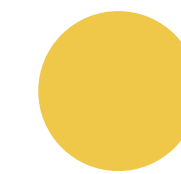
Developing



Testing



Pre-Deploy



Production

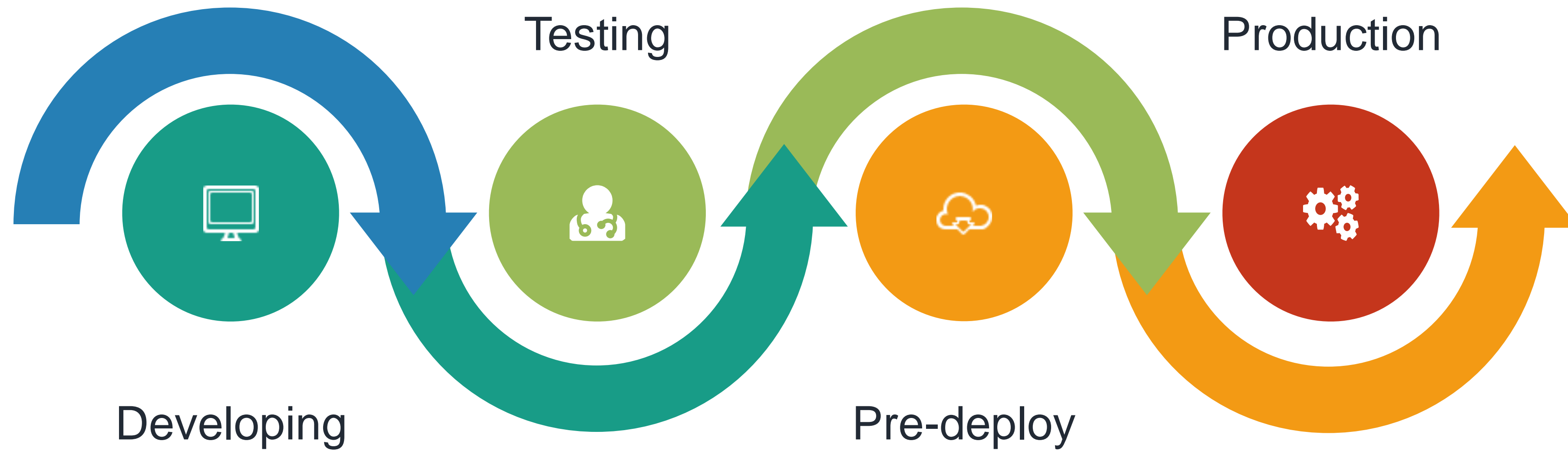


Workflow

How ops code applies to production



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Testing

Auto testing



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Local Machine

package installed? file exists? service running?
config is correct?



Network

target host and port accessible?



Business

User defined test case, auto run with random
parameters





Template

Separate the variable and code



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```
/etc/php.ini  
[Session]  
session.save_path  
= "{{ IP }}:11211"
```

Dev: IP=127.0.0.1

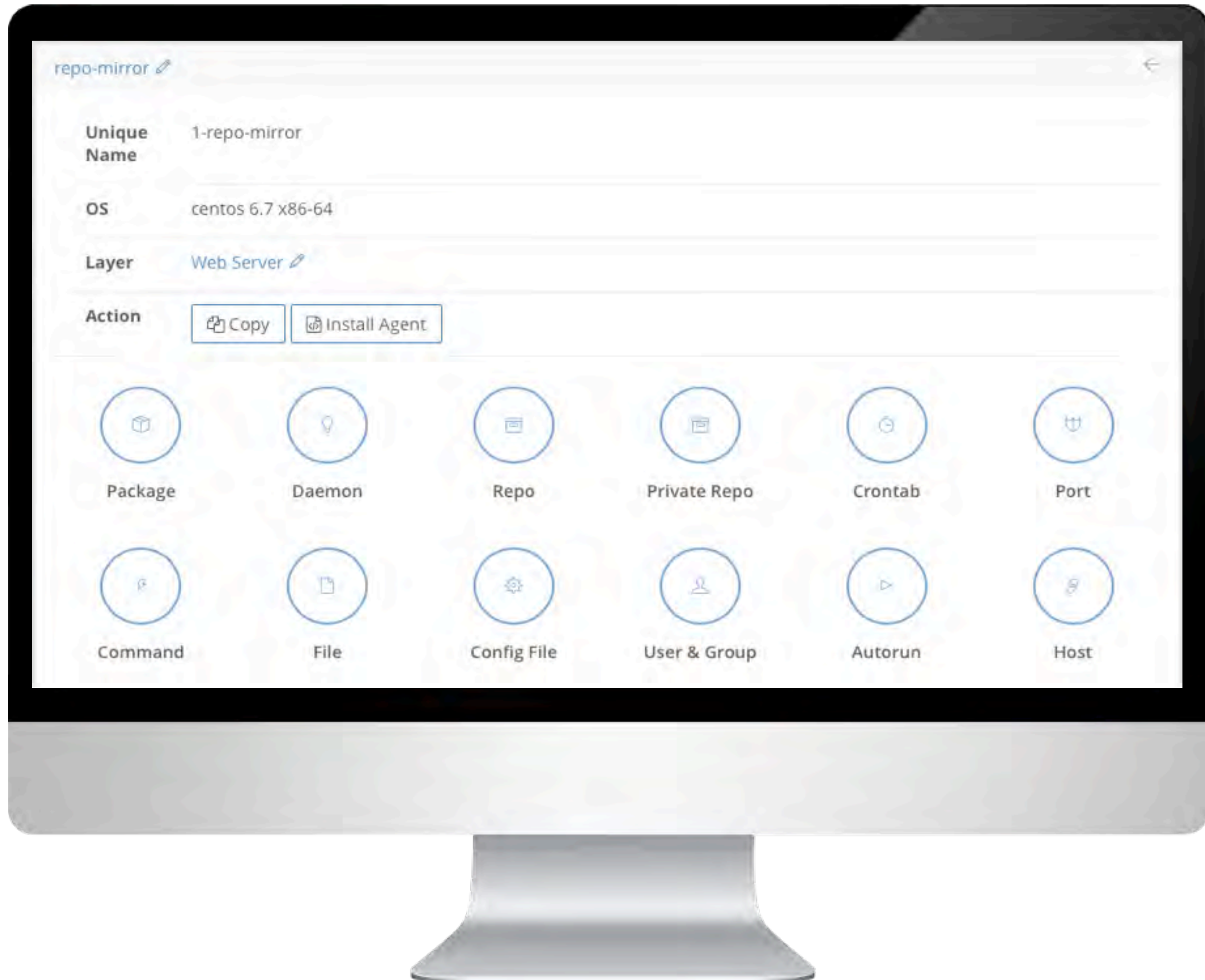
```
session.save_path = "127.0.0.1:11211"
```

Test: IP=172.16.43.1

```
session.save_path = "172.16.43.1:11211"
```

Prod: IP=10.63.12.10

```
session.save_path = "10.63.12.10:11211"
```



Reduce hand coding
Code auto generation, code snippet



Reduce grammar errors
Space before equal sign in bash, semicolon in nginx.conf



Display operation visually
Installed packages, opened ports, running services



Run with mouse click
Button click instead of cli invoke



Integration

Integrate multi cloud with api



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1. AWS



4. OpenStack

2. MS Azure



5. VMware

3. Aliyun



6. Docker



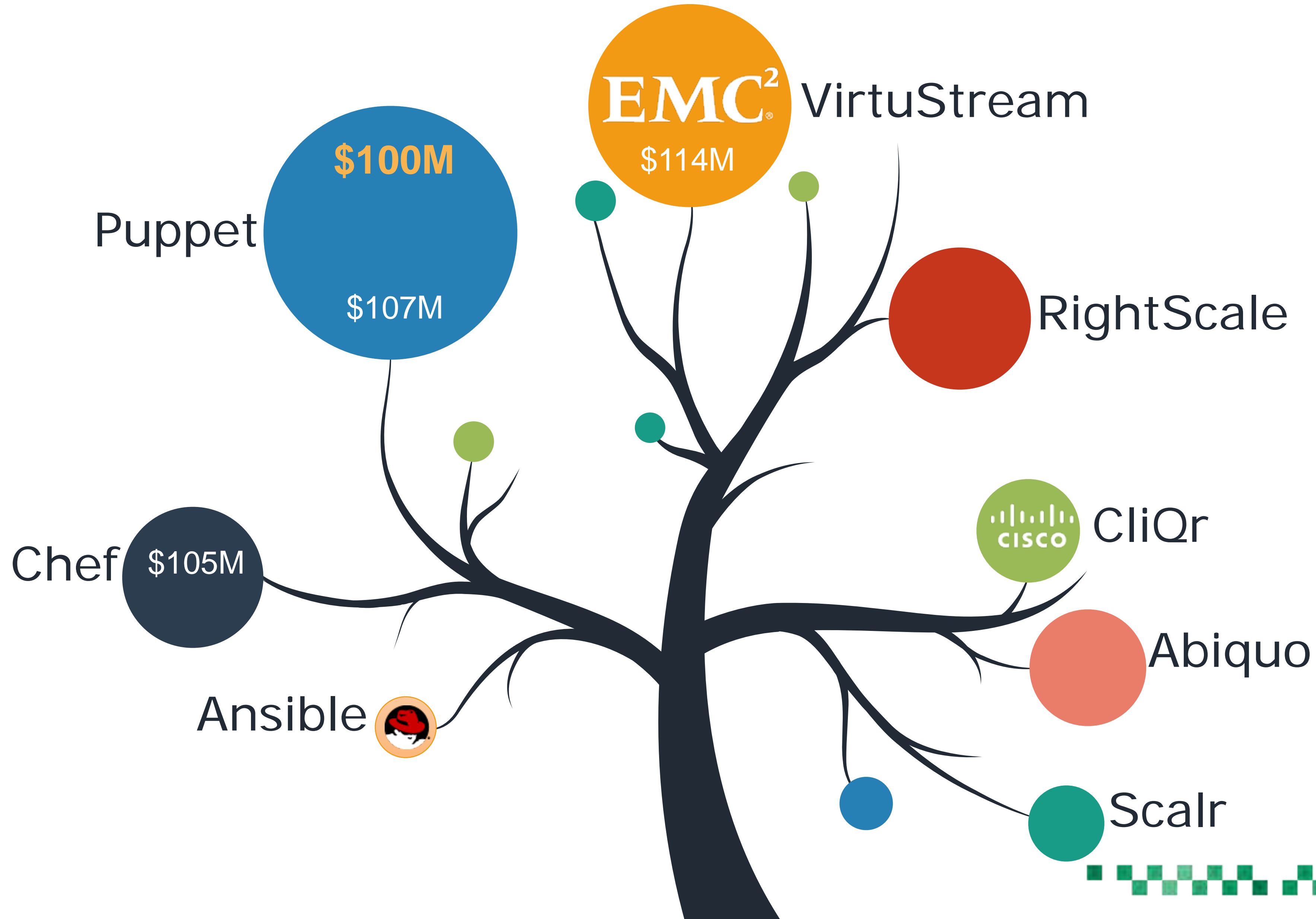


Players

Who play the game



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Services

What the platforms do



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Modeling

model once
deploy anywhere

Auto Scaling

on-demand purchase



Marketplace

one-click deploy
share economy

Failover

cross city
extreme fast



OpsKitchen





Clients

Who believes us



<http://ops.best>



The University of Hong Kong



Applications

What featured in app market



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Big Data



APACHE
HBASE



Spark

HUE

E-Commerce

spree



Magento

opencart



shopex

Collaboration

Mattermost



ROCKETCHAT

ownCloud

ERP/CRM

odoo



ERPNext



SUGARCRM

CMS



WORDPRESS



typecho

Generic

HA
PROXY

NGINX

php

MySQL

M
MEMCACHED



SFDC

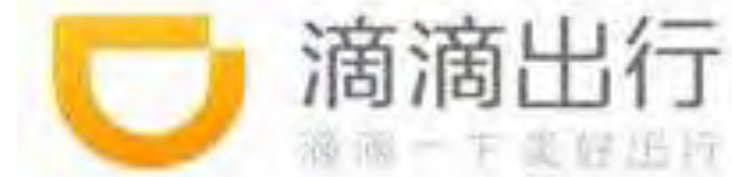


Contributors

Where our contributors come from



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segmentfault





Achievements

What we have achieved



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Web Based GUI

1st in the world
no programming



Software Search Engine

1st in the world
25000+ software



Multi Cloud

aliyun, ucloud
will increase in high speed

Marketplace
3rd in the world
20+ critical business app



OpenAPI
1st in the world
420+ api, 100% api based

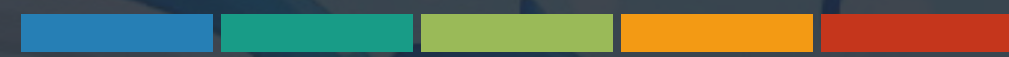


Internationalization
2 languages
web translator opened





Mission



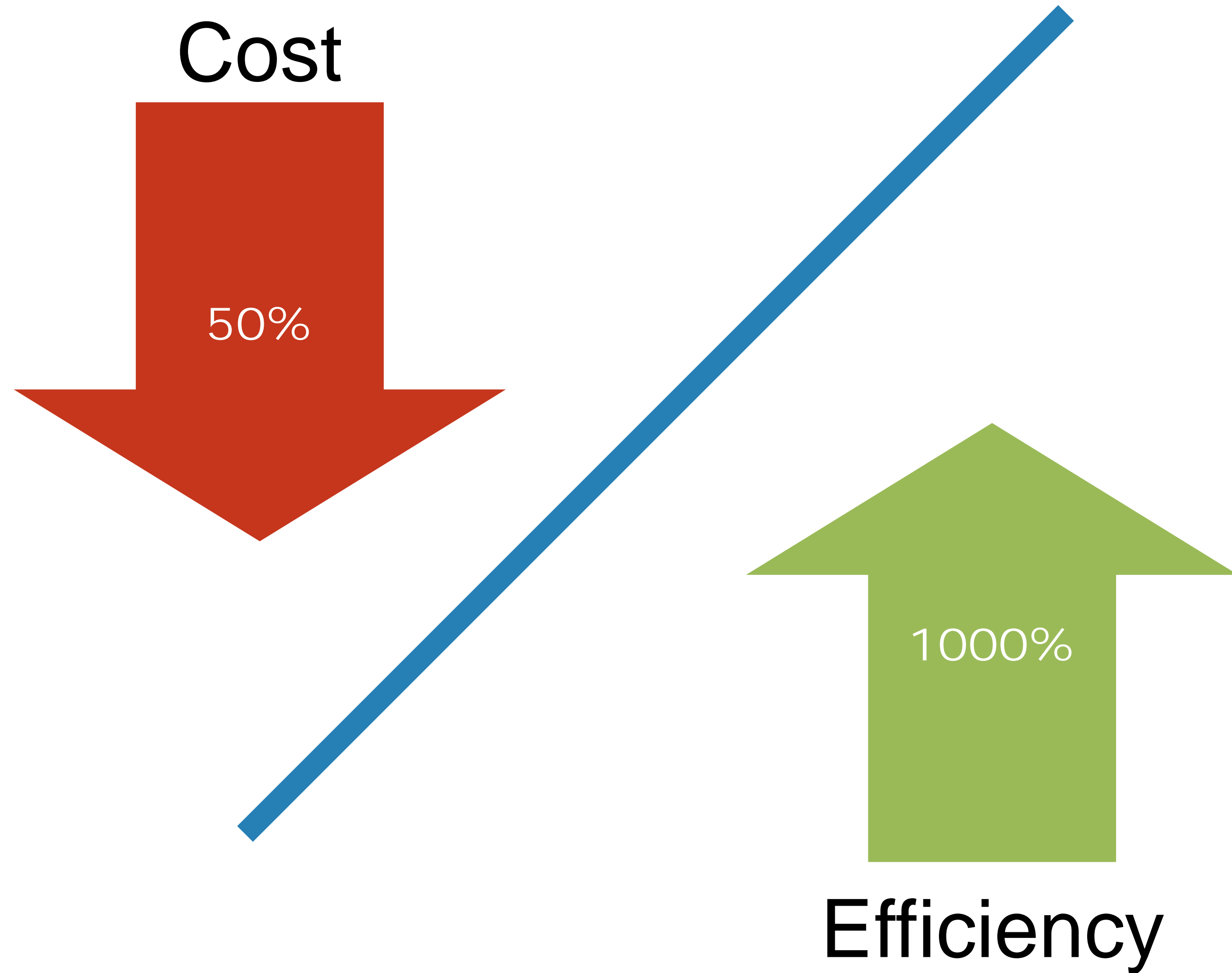


Benefits

What customers get



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Mission

What we are fighting for



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Free
the human
for creative work



THE END

Thank you for listening, hope you enjoyed it.