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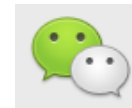
QCon全球软件开发大会

International Software Development Conference

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软件
正在改变世界!

自我介绍

2005 ~ 2012 BAIDU

- 3年应用运维
- 3年运维自动化建设

2013 ~ 今 小米

- 应用运维团队
- 运维自动化事务

微博：<http://weibo.com/xingfuge613>



运维基础设施

调度

搭业
务环
境

改配
置

线上
升级

迁移

扩容

关联
变更

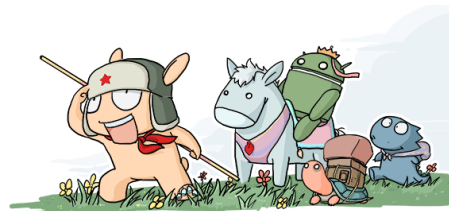
监控

部署

名字
服务

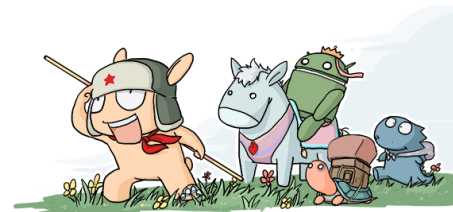
服务树&机器管理&...

配置管理数据库

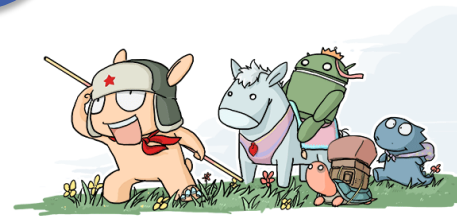
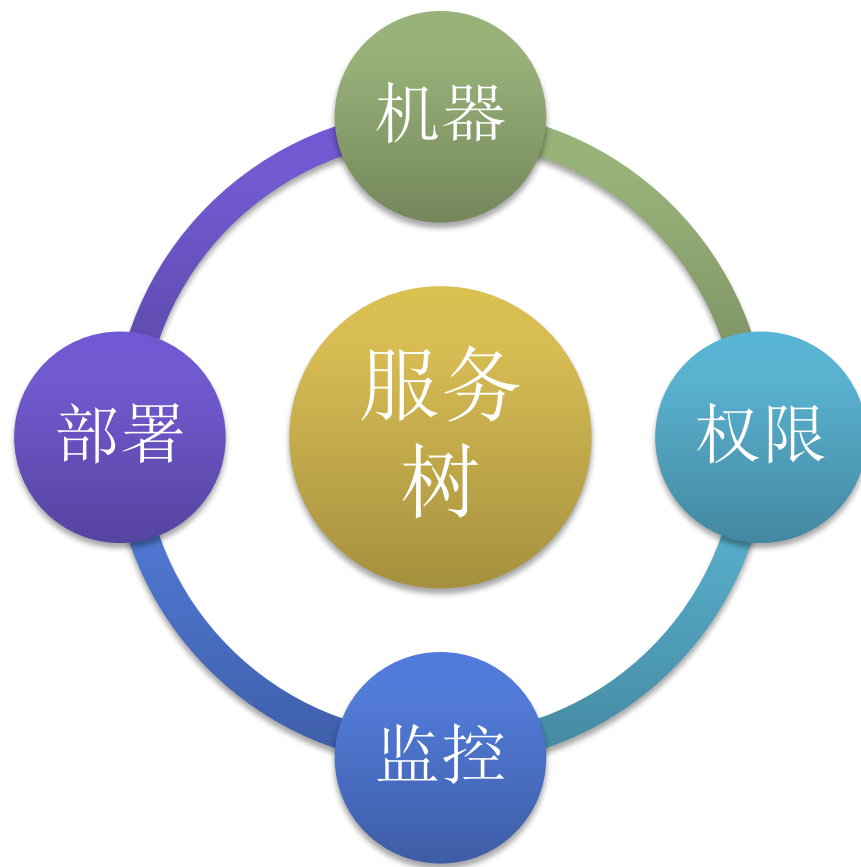
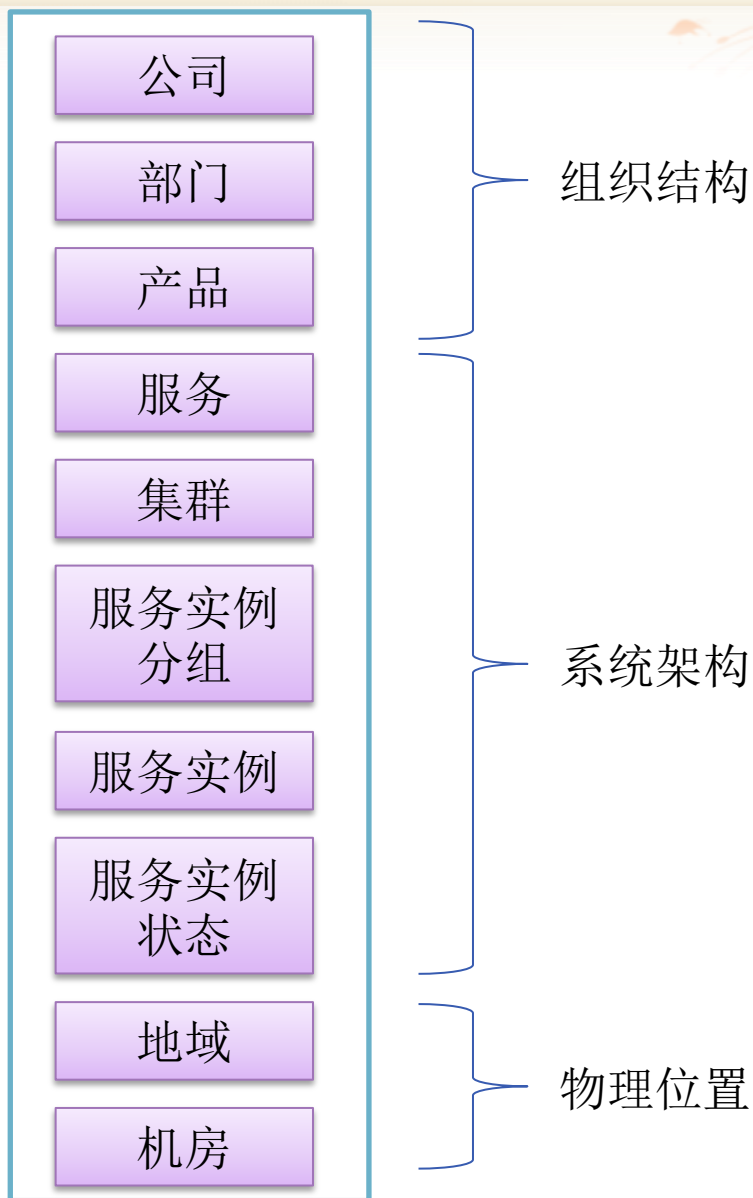


OUTLINE

- 服务管理
- 部署系统
- 规范要求
- 未来



服务管理 – 服务树

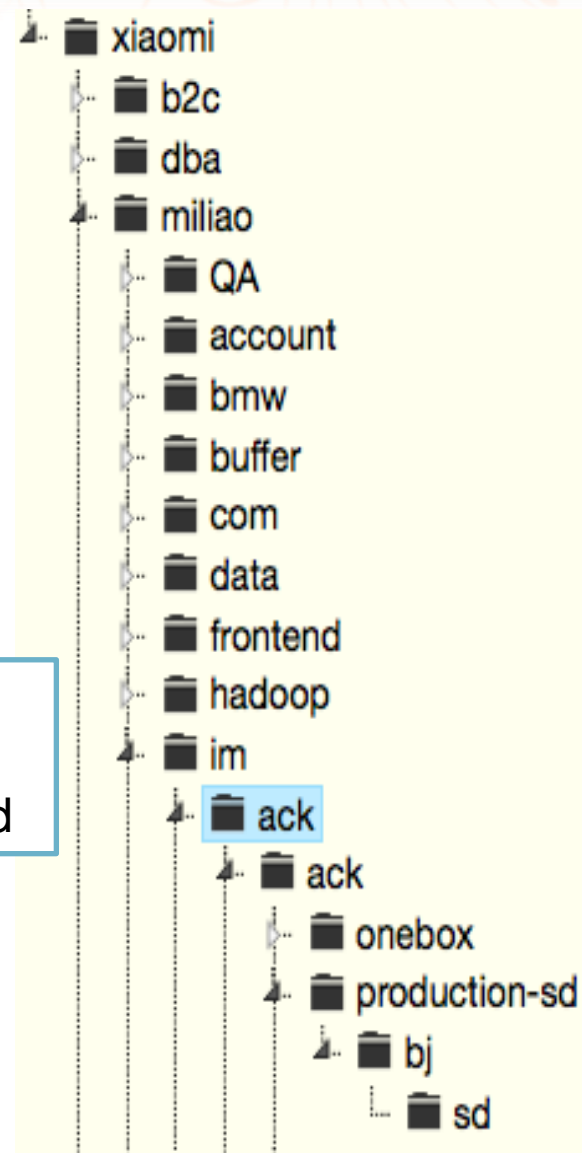


服务管理 – 服务树

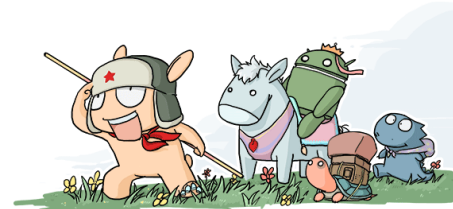
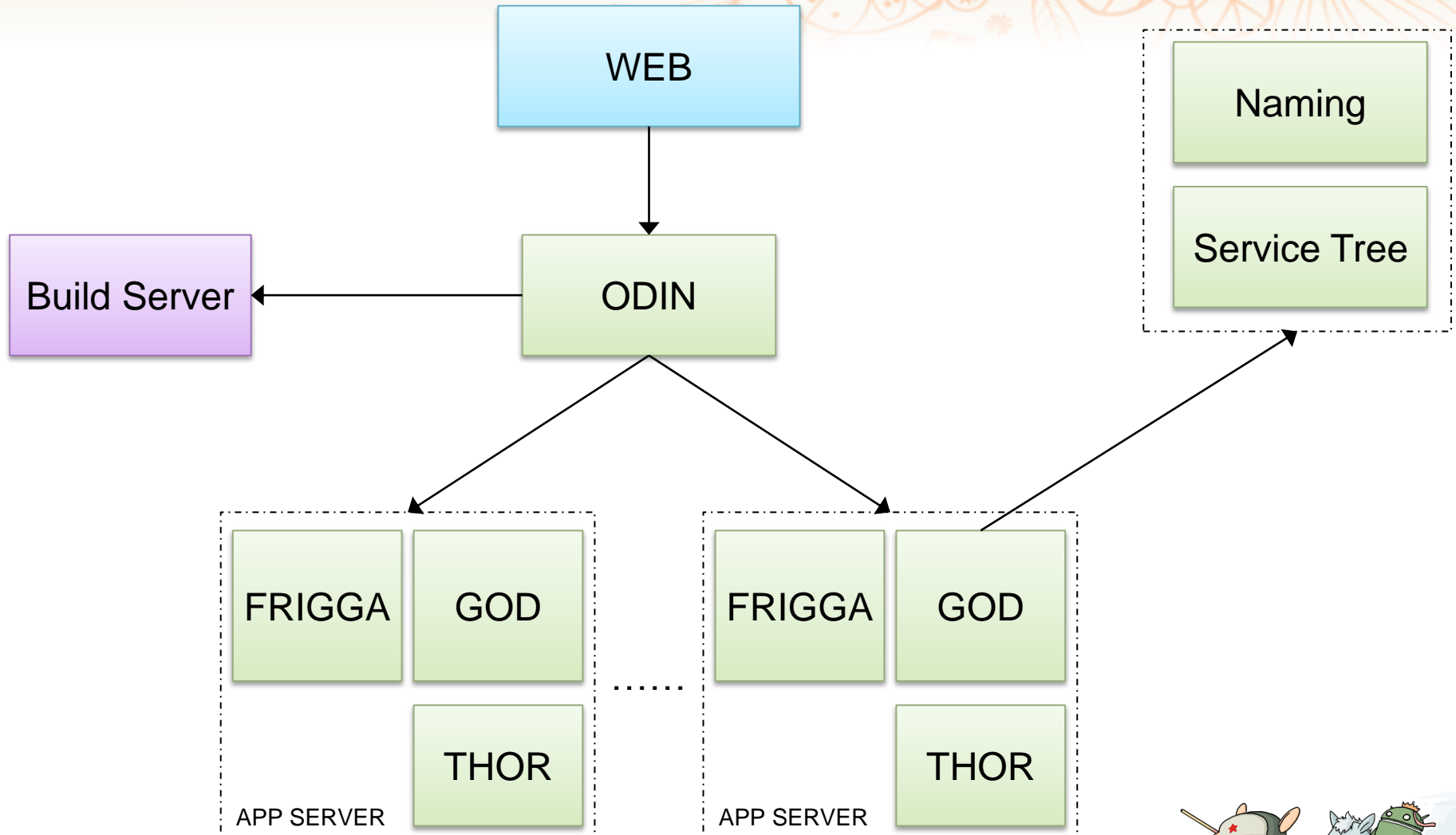
机器TAG形式进行标记

根据TAG动态筛选机器

cop.xiaomi_owt.miliao_pdl.im_service.xiaomi-
mq_jobgroup.micloud_job.xmq-micloud-cell01-
micloud011_status.service_loc.bj_idc.sd_cluster.production-sd



自动部署 - AESIR



部署系统 - WEB



服务详情

job.database-change-handler_service.database-change-handler_cluster.production-hh_pdl.account_owt.miliao_cop.xiaomi

*service: ⓘ

database-change-handler

[显示复杂tag](#)

*部署环境:

production-hh

*代码url:

https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/database-change-handler

*部署账号:

root

*部署路径:

/home/work/database-change-handler

启停动作:

restart

代码分支:

master

相对路径:

代码编译时,需进入的相对目录(默认为空)

sleep:

每执行完一台sleep的时间(s) (秒)

暂停step:

1

台机器

0:不暂停

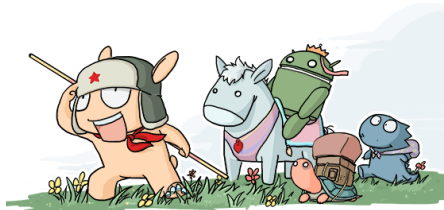
1:每执行1台暂停

2:每执行2台暂停

n:每执行n台暂停

模板值:

JAVA_OPTS = "-Dzookeeper.servers.resourcefile=hh_zookeeper_servers.properties"



部署系统 - WEB



第一步：确认部署信息(job.database-change-handler_service.database-change-handler_cluster.production-hh_pdl.account_owt.millao_cop.xiaomi)

部署实例

搜索:

00-00-fe01.bj
-fe02.bj
-fe03.bj
-fe04.bj
-mt01.bj
-mt02.bj
-mt03.bj
-mt04.bj
-m-l7-fe03.bj
-m-l7-fe04.bj
-fe01.bj
-fe02.bj
-fe03.bj
-fe04.bj

部署实例 (2个)

-mt01.bj
-mt02.bj

导入



Sort
Top
Up
Down
Bottom

服务信息

分支(注意主干: git为master,svn为trunk):

master

获取分支版本

version(分支:master 上次部署版本:131127):输入

142469 [UT:]

部署账号:

root

部署路径:

/home/work/database-change-handler

是否为定时任务:

☒ 否 ☐ 是

启停动作:

restart

暂停step(0:不暂停,n:每执行n台暂停):

1

台机器

sleep(每执行完一台机器sleep的时间):

(秒)

模板值:

JAVA_OPTS = "-Dzookeeper.servers.resourcefile=hh_zookeeper_servers.properties"

[隐藏高级设置](#)

第二步：发起部署

编译
并部署

强制重编译
并部署

部署系统 - WEB



查看任务 发起任务 迁移xrelease模块

← 当前节点: cop.xiaomi

我的任务 所有任务

id	发起人	服务名	版本	发起时间	结束时间	状态	任务控制	操作	日志
8220	shiyang_cc	job.micloudcarddav_service.micloudcarddav_cluster.production-lg	11f139955	2014-04-15 17:26:17		部署中	<button>刷新</button> <button>结束</button> <button>暂停</button>	查看 复制 cluster.conf	web操作 Odin 编译日志 编译错误日志

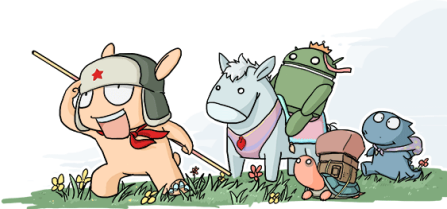
← 1 of 1 → 5

任务进度

id:8220

33.3%

服务名	机器名 (总共:3)	状态 (未执行:2)
job.micloudcarddav_service.micloudcarddav_cluster.production-lg_pdl.micloud_owt.miliao_cop.xiaomi	lg-mc-fe16.bj	deploying
job.micloudcarddav_service.micloudcarddav_cluster.production-lg_pdl.micloud_owt.miliao_cop.xiaomi	lg-mc-fe17.bj	
job.micloudcarddav_service.micloudcarddav_cluster.production-lg_pdl.micloud_owt.miliao_cop.xiaomi	lg-mc-fe18.bj	



部署系统 – ODIN



WEB生成
cluster.yml
文件



ODIN解析
cluster.yml



下载PKG并重
新生成发布包



触发host中机
器的FRIGGA

● Cluster.yml

cluster:

name: dch

version: 1.0.0.1

env: production

jobs: [job.database-change-handler_
service.database-change-handler_cluster.preview_
pdl.account_owt.miliao_cop.xiaomi, xxxx, xxx]

dch:

host: [10.237.37.43, 10.237.37.45, 10.237.37.46]

user: work

version: 93043

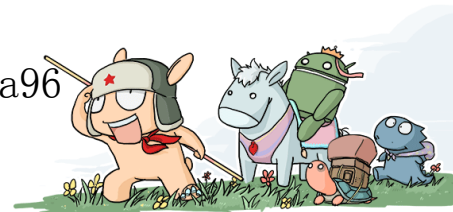
path: /home/work/passport-dch

pkg_url: <ftp://>

db_passwd:xxxx

backup_key:68e7012d5bdca6eaceeb2682e4b20a96

mon_value: mon.template.yml



部署系统 – THOR

下载要部署的
包文件

替换模板生成
临时配置

根据配置进行
文件的部署

生成GOD启动
配置

触发GOD启动
程序

● Init.yml

Dch:

```
type: file
name: ${basedir}/conf/dch.conf
source: template("dch.conf.erb")
```

monitor:

```
type: mon
name: ${basedir}/conf/mon.conf
source: template("mon.conf.erb")
```

backup:

```
type: backup
name: ${basedir}/conf/backup.conf
source: template("backup.conf.erb")
```

● Config.template.yml

base:

```
basedir: "$<path>"
user: "$< user >"
mod_name: "$< name >"
db_password: "$< db_passwd >"
tag: "$< job >"
```

#app running control

mod_start:

```
"${basedir}/bin/run.sh"
```

mod_stop:

```
"${basedir}/bin/stop.sh"
```

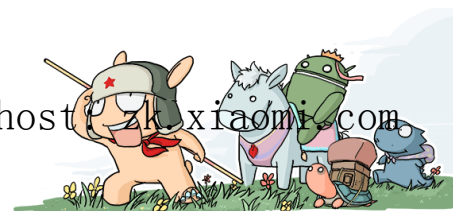
to_email: xxx@xiaomi.com

production:

```
zookeeper_host: zk.xiaomi.com
```

staging:

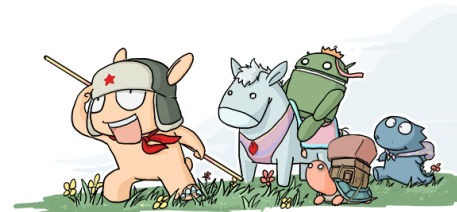
```
zookeeper_host:
```



部署系统 – GOD



```
God.watch do |w|
  w.ver = "139594"
  w.name = "job.database-change-handler_service.database-change-
handler_cluster.production-sd_pdl.account_owt.miliao_cop.xiaomi"
  w.start = "sh /home/work/database-change-handler/bin/DbEventListener.sh -r"
  w.gid = "root"
  w.uid = "root"
  w.log = "/data/soft/database-change/logs/database-change.log"
  w.dir = "/home/work/database-change-handler/"
  w.cron = "/etc/god_cron.d/job.database-change-handler_service.database-change-
handler_cluster.production-sd_pdl.account_owt.miliao_cop.xiaomi.cron"
  w.stop_timeout = 300.seconds
  w.lifecycle do |on|
    on.condition(:flapping) do |c|
      c.to_state = [:start, :restart]
      c.times = 3
      c.within = 10.minute
      c.notify = 'proc_down'
    end
  end
end
end
```



部署系统 - 管理

服务列表

<input type="checkbox"/>	服务	代码地址	部署路径	实例数 (running/total)	部署次数
<input type="checkbox"/>					
<input type="checkbox"/> 发起	job.database-change-handler_service.database-change-handler_cluster.preview	https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/database-change-handler	/home/work/database-change-handler	0 / 0	0
<input checked="" type="checkbox"/> 发起	job.database-change-handler_service.database-change-handler_cluster.production-hh	https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/database-change-handler	/home/work/database-change-handler	2 / 2	2
<input type="checkbox"/> 发起	job.database-change-handler_service.database-change-handler_cluster.production-lg	https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/database-change-handler	/home/work/database-change-handler	4 / 4	3
<input type="checkbox"/> 发起	job.database-change-handler_service.database-change-handler_cluster.production-sd	https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/database-change-handler	/home/work/database-change-handler	2 / 2	21
<input type="checkbox"/> 发起	job.database-change-handler_service.database-change-handler_cluster.staging	https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/database-change-handler	/home/work/database-change-handler	0 / 0	1
<input type="checkbox"/> 发起	job.gg-passport-tungsten_service.gg-passport-tungsten_cluster.production-sd	0	/home/work/opdir/passport-tungsten	0 / 0	4
<input type="checkbox"/> 发起	job.lg-passport-tungsten-manager_service.lg-passport-tungsten-manager_cluster.production-sd	0	/home/work/passport-tungsten-manager	0 / 0	1
<input type="checkbox"/> 发起	job.lg-passport-tungsten-manager_service.lg-passport-tungsten-manager_cluster.production-sd	https://code.miliao.com/repos/xiaomi-miliao/trunk/src/cloud/XMChannel/passport-tungsten-manager	/home/work/passport-tungsten-manager	2 / 2	2
批量发起		新增服务			

实例列表

当前服务为:

机器名	版本号	状态	dashboard	frigga
-mt07.bj	131638	running	dashboard	frigga
-mt08.bj	131638	running	dashboard	frigga
-mt09.bj	131638	running	dashboard	frigga
-mt06.bj	131638	running	dashboard	frigga

部署系统 - 管理

Process	Status	Start Time	Action
passport-agent 104881	running	2013-08-05 14:32:59	<div>stoprestartnukeLog</div>
passport-mt 104894	running	2013-08-05 14:38:56	<div>stoprestartnukeLog</div>
passport-https 104898	stop		<div>startrestartnukeLog</div>

注意: 点击stop按钮停止tail log, 继续tail log请刷新本页面

```
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJ00g0P6RH6d3d06fD1/011kX4Y/SqKzfoPhIu37Qgu0c6Q7FZU0w+Coa
DcVxrcmaAtdCEsoNcIRrarS9j6MM8c=, miuiromota]
2013-08-06 19:53:00,579 [pool-1-thread-34] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJLuyNLCG9DZhlpsrBSI2qQVtielxDfogKHuvXMiEaFwLDizm7d5cPMG5
NgKorVFe6TQkXUjBcjiEVg4EBP7Lgb8=, miuiromota]
2013-08-06 19:53:00,592 [pool-1-thread-48] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJC6sdREn+/RXR7mjINJEQuD9x9hL1Qjqw8492P+HY3iiuDuNEfgoGCL2
qT3MnJVL1RWW9Smyj0uEtJpUDM+G0hQ=, miuiromota]
2013-08-06 19:53:00,613 [pool-1-thread-18] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJCJ5DonckjhviFCG/yz/A2nK8DJa7tjZcx500I1WCmP5+7w3RpQKB/Ga
3fArbZKki7EaB645bp375Ih2fR/KKrc=, miuiromota]
2013-08-06 19:53:00,617 [pool-1-thread-22] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJNDyXoHMD5KMMTghheana/Ax07sjUUxbUtztk7FjjL3svhe82YZQ0qjG
vxDNtjtItIXojw+8KJ15EXcJmJi1+Ic=, miuiromota]
2013-08-06 19:53:00,620 [pool-1-thread-33] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJDkn6ARIro6kxH7fzyRiFOIJSvx19027o1igBTnMM8/BTnTAYK0jbuT9
Wq+zWUrCnP0We8v7ok65aMk5cMxH+bE=, miuiromota]
2013-08-06 19:53:00,629 [pool-1-thread-19] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJDLo8nzpA3Eb/KtnYhJMZo95QEYEL37iDtdj6ntxEMckq1p2RuedMd38
GAlc+Cd3EonDoZDCwYEkpQjhi9Md1T0=, miuiromota]
2013-08-06 19:53:00,659 [pool-1-thread-10] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJD+Mqmh5QUrlsxscSSQqE5BHgsTR/Ym5AT1s7BUt0XLfb6tXVC03B4bth
2giFJ+nVVgiM8S6L5nSWwOVwXtV0oMw=, miuiromota]
2013-08-06 19:53:00,692 [pool-1-thread-31] INFO com.xiaomi.passport.agent.PassportAgentMain - api:decryptServiceTo
ken is called from ip:null,parameters:[0QxjFrjieRMkJ7AH4gTZJFmOgRlgDq8k8EQOWOYeCImFlzhnc6xpjN8cBf/xIonBsk8A1vrs2Ek
```

部署系统 – 持续部署

- `Odin.rb -f cluster.yml`
- `Thor -f cluster.yml`

```
[root@localhost opshell]# odin/bin/odin.rb -f passport.yml
Prepar to bootstrap deployment environment...
Start to deploy jobs order by host...[total:3]
[Host:1/3]-->[127.0.0.1][Jobs:1]->[database-change-handler:succ]->(time:15)
go on to deploy next host ? [yes/all/quit]: all
[Host:2/3]-->[10.237.37.24][Jobs:1]->[database-change-handler:succ]->(time:7)
[Host:3/3]-->[10.237.37.23][Jobs:1]->[database-change-handler:succ]->(time:7)
[Total] passport-1.0.0.1-staging: [database-change-handler:3/3]
+-----+-----+-----+-----+
|                                     Deployment Status                                     |
+-----+-----+-----+-----+
| Job                | Progress | Deployed Host                | Undeployed Host |
+-----+-----+-----+-----+
| database-change-handler | 3/3      | 127.0.0.1 10.237.37.24 10.237.37.23 |                 |
+-----+-----+-----+-----+
All jobs is done, clean /tmp/passport-1.0.0.1/ and /tmp/passport-1.0.0.1.tar.gz.
```

- `god status`

```
[work@server08 ~]$ god status
frigga[25933 root]: running (2014-03-26 23:03:43)
database-change-handler_database-change-handler_production-sd[8617 root]: running (2014-04-01 10:48:54)
```

规范要求



发布过程

- 发布版本管理
- 打包格式一致

目录结构

- 发布包结构固定
- 日志与程序分离
- 数据与程序分离

系统环境

- lib库
- 解释器
- 命令行

Runtime依赖

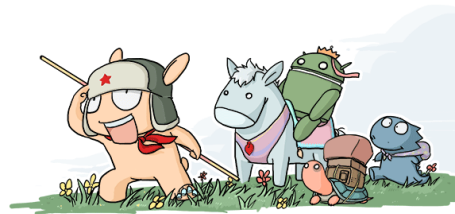
- 系统依赖
- 模块依赖

统一模块控制方式

- 启停
- reload

关联配置解耦

- 模块间RPC配置
- 开关类配置
- 功能逻辑配置



规范要求 – 目录结构

- 发布包结构

Passport-agent

- |- release

- |- target

- |- deploy

- |- config.template.yml

- |- init.yml

- |- 模板目录

- |- dch.conf.erb

- 程序、数据分离

/home/work/passport-agent

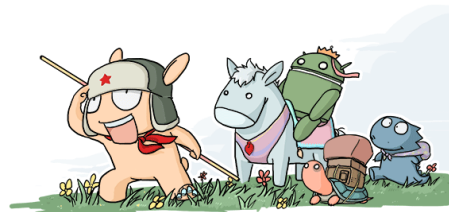
- |- bin

- |- conf

/data/passport-agent

- |- log

- |- dict



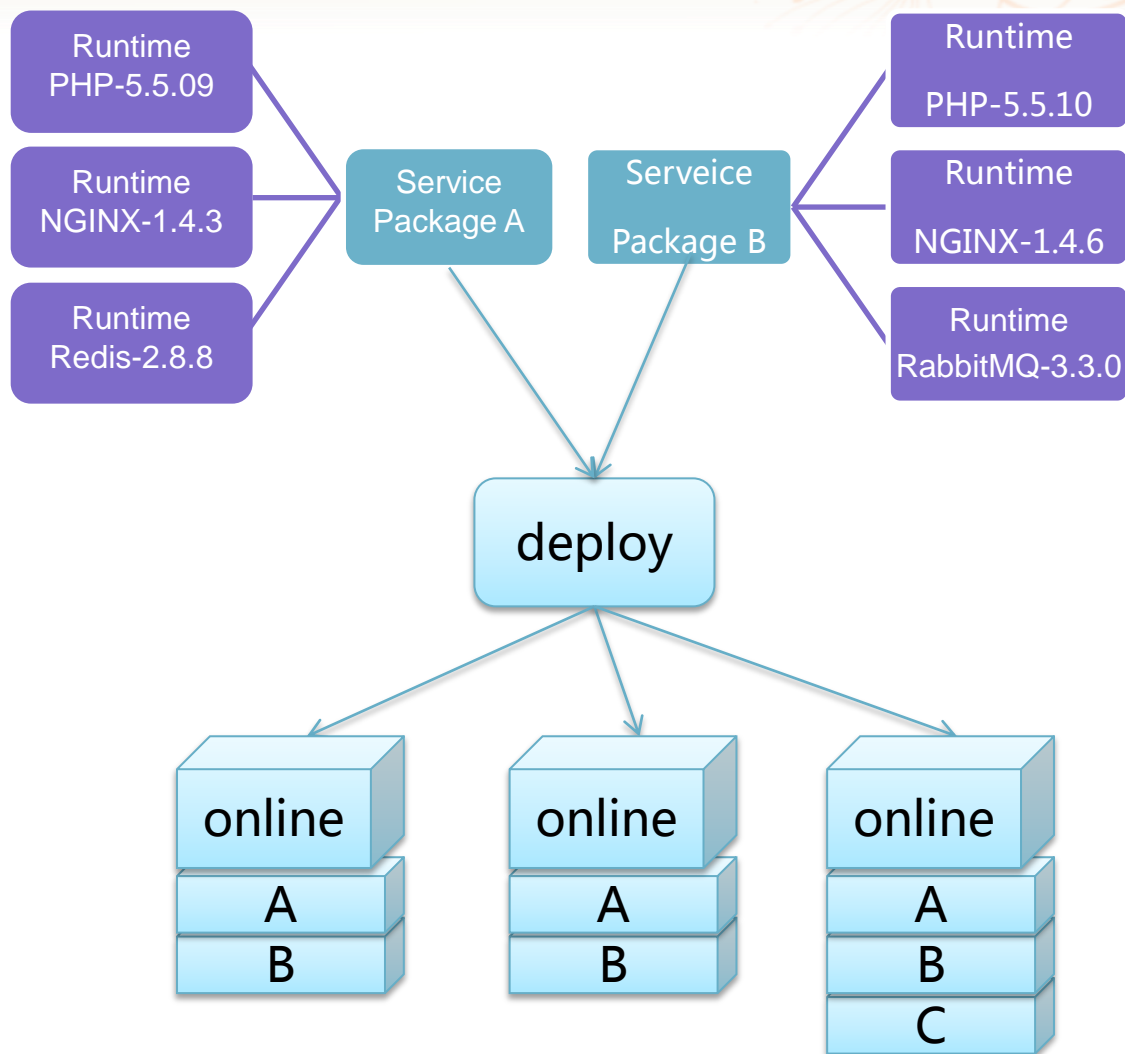
规范要求 – 环境

- 统一系统内核、发行版、初始环境

- 编译环境
- 解释器
- 系统Lib
- 关键配置依赖
- 命令行



规范要求 - Runtime依赖

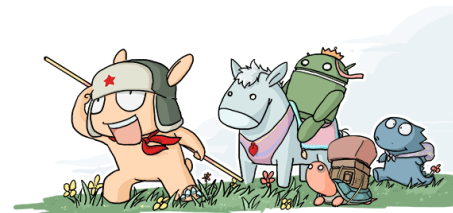


● 优点

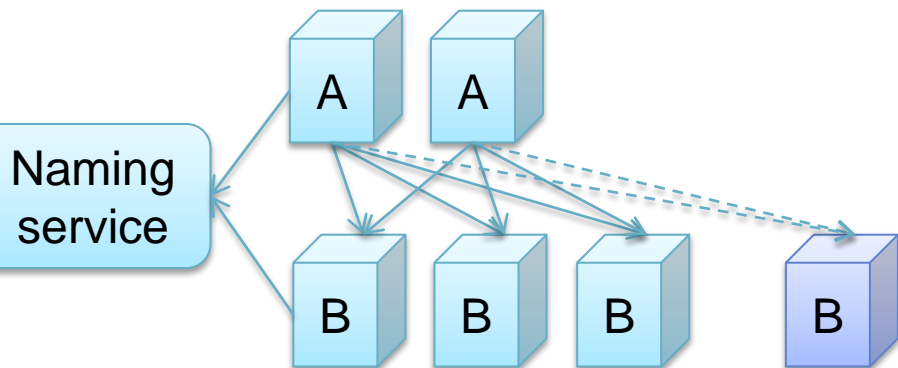
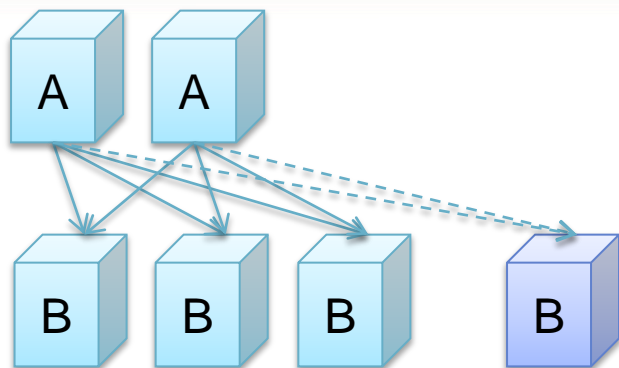
- 部署动作简单
- 不污染系统及其业务

● 问题

- 权限
- 公有、私有runtime



规范要求 - 解耦关联配置

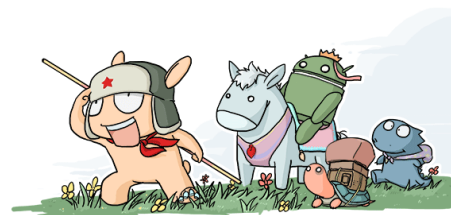


● Naming所做

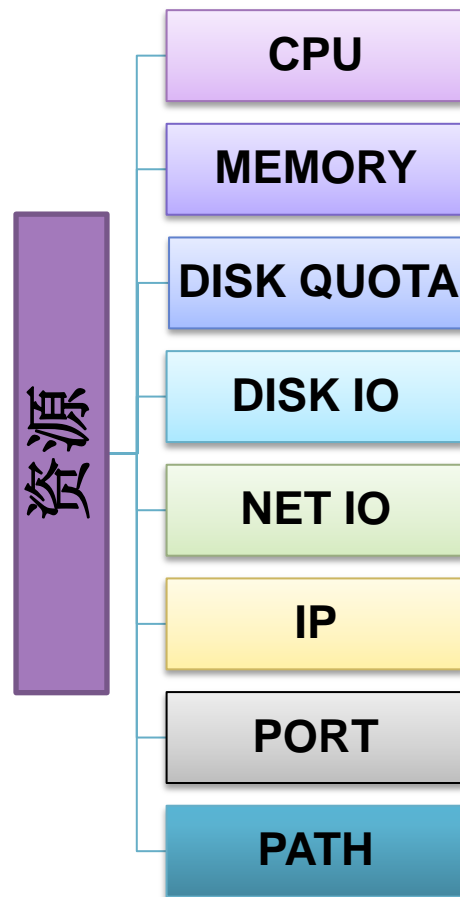
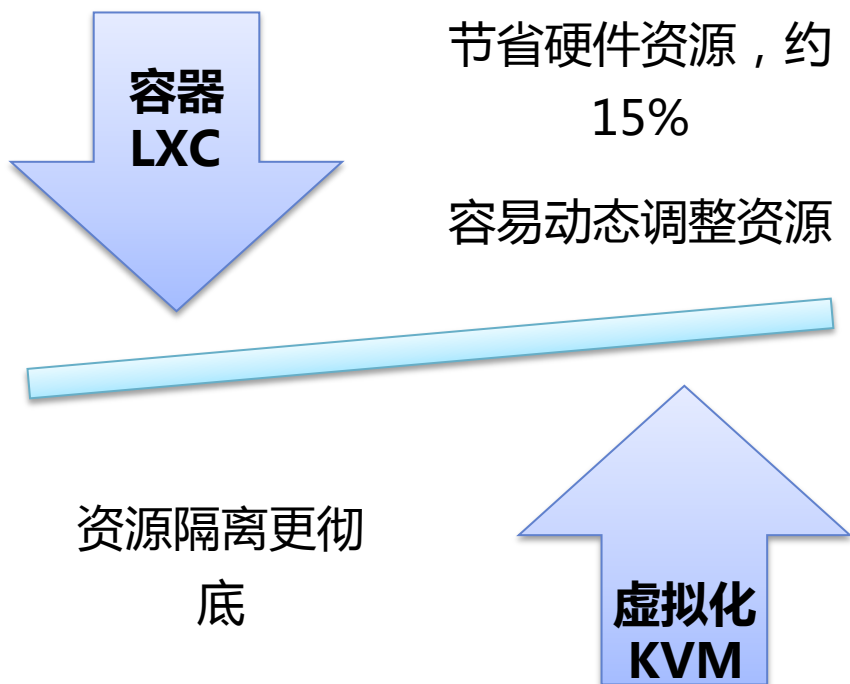
- 抽取连接类信息
- 树状结构
- 固定tag组合查询
- 区域化解析

● Naming不做

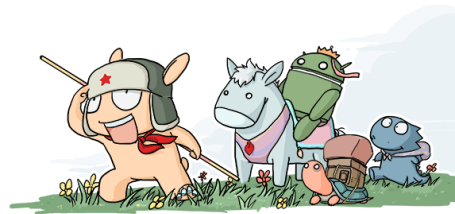
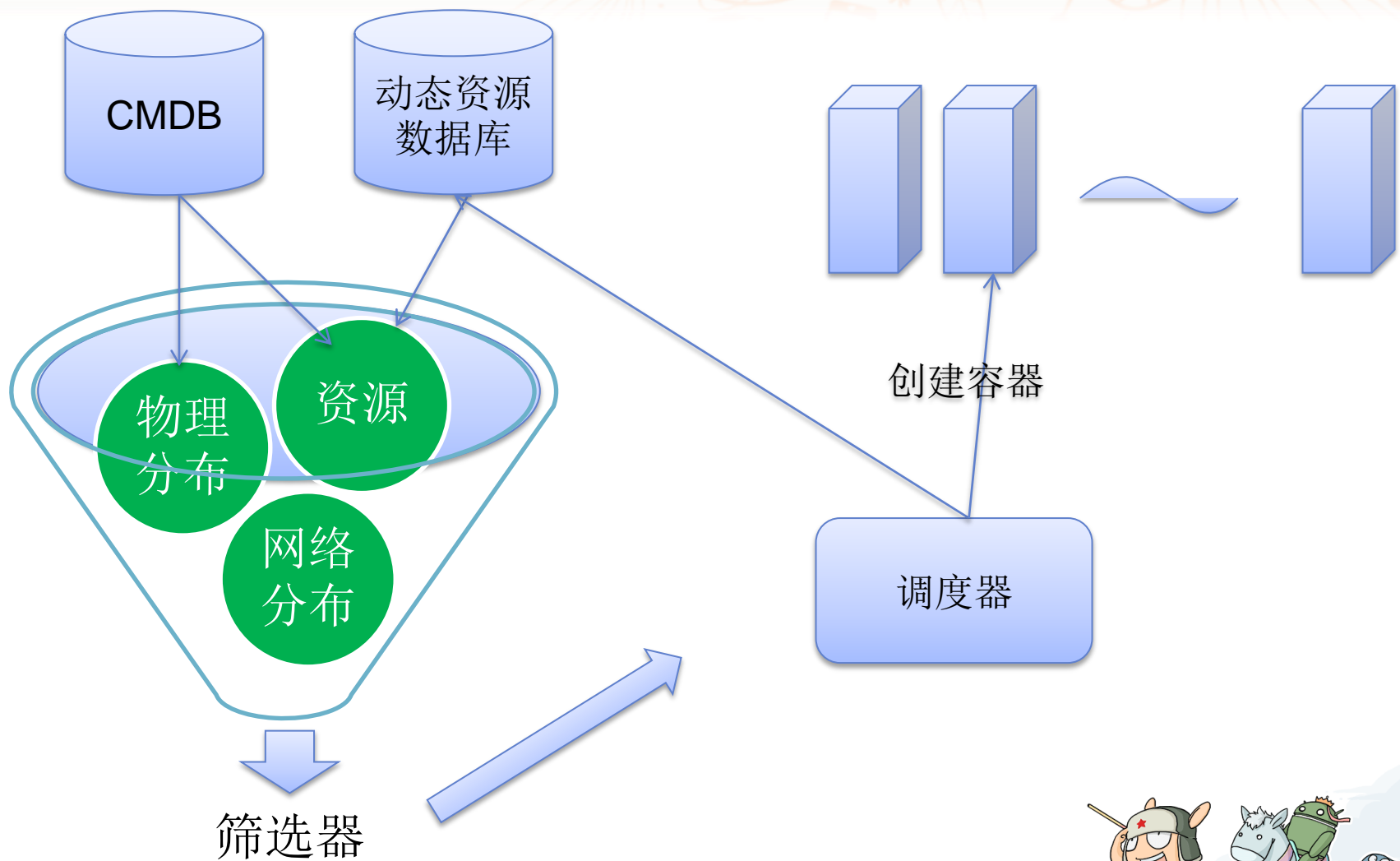
- 配置管理
- 实时通知



未来 - 资源隔离



未来 - 动态筛选、调度

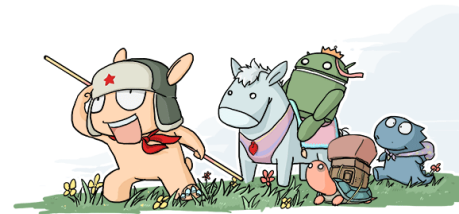


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Thanks!

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特别感谢媒体伙伴（部分）

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