



运维基础设施之数字化运营

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了么 徐巍

饿

基础设施的定义

- IDC
- 网络
- OS
- 基础服务
 - 负载均衡/防火墙(VPN)
 - 私有云/公有云/CDN
 - 分布式文件系统
 - 日志平台
 - Monitor/DNS/YUM/NTP/LDAP

努力的方向

- ▶ 稳定
- ▶ 快
- ▶ 低成本

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遇到的问题1

▶ 网络

- ▶ 设备性能不足：核心/接入/F5/防火墙
- ▶ 带宽收敛比过低
- ▶ 网络结构复杂
- ▶ 网络单点
- ▶ 不同型号混用
- ▶ 监控不全

遇到的问题2

- ▶ 服务器

- ▶ 不够标准化:

- ▶ 机型混乱, 且硬盘/内存存在插拔

- ▶ OS版本混乱

- ▶ 外网ip/bond有的有, 有的没有

- ▶ 单点:

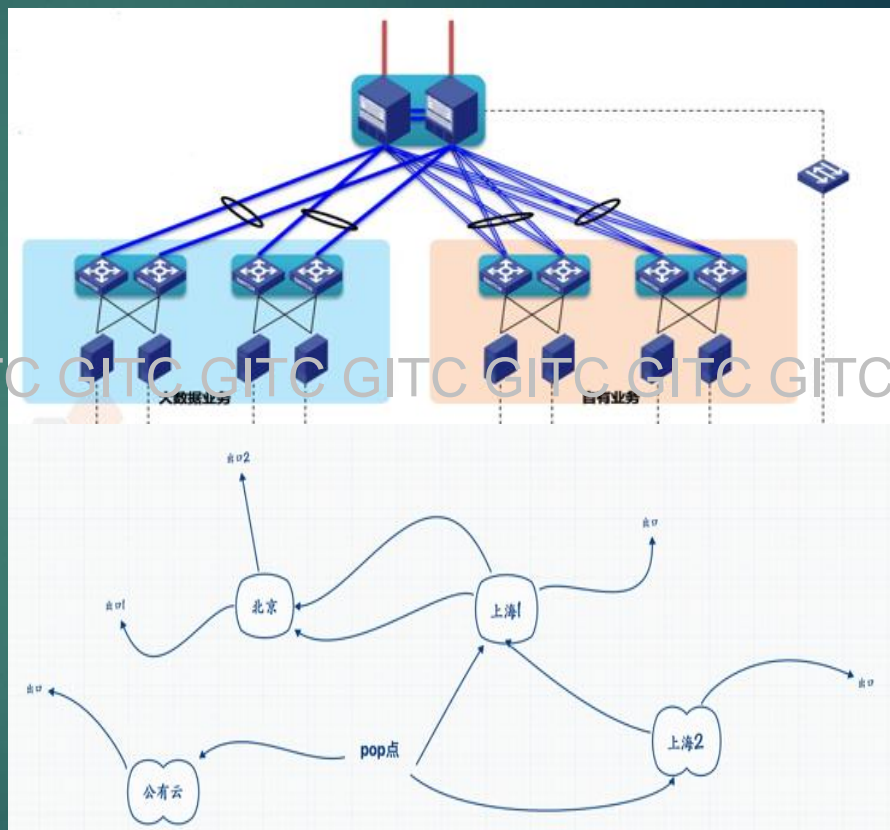
- ▶ 部分设备单电/单网卡

遇到的问题3

- ▶ xfs 坑
- ▶ mode0
- ▶ 省电模式
- ▶ 网卡中断/网卡百兆
- ▶ CPU温度过高
- ▶ 磁盘io
- ▶ 虚拟化超分

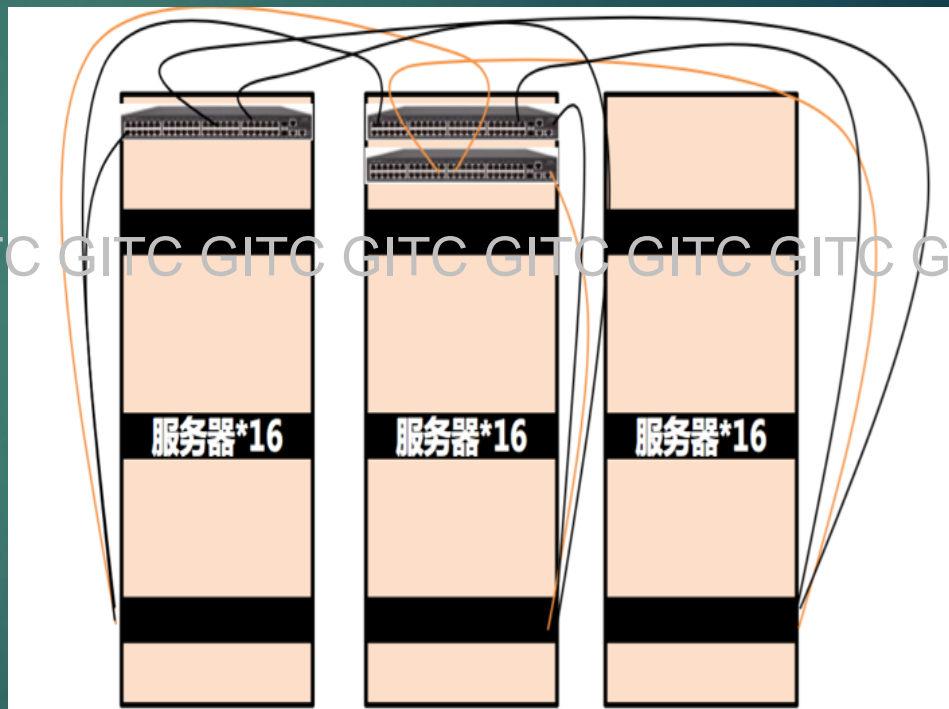
How-标准化-network

- ▶ 高收敛比
- ▶ 大二层
- ▶ 无单点
- ▶ 关于防攻击



How-标准化-IDC

▶ 机柜标准化



How-标准化-服务器



- ▶ 机型标准化
- ▶ 服务器定制化
- ▶ 采购周期化
- ▶ 采购框架协议
- ▶ OS标准化

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How-标准化-应用

- ▶ 统一公司层面运维支持技术平台
- ▶ 控制研发技术使用
- ▶ 谨慎引入新技术，要经过arch review讨论
- ▶ 简化技术平台
- ▶ 适当允许引入新技术
- ▶ 维护一个稳定版，一个推进版
- ▶ '用好'技术，比'用'好技术更重要

How- 自动化+流程

- ▶ 标准化是自动化实现的前提
- ▶ 自动化促进标准化
- ▶ 流程才能保证运营数据流转的闭环
- ▶ 不能为了流程而流程
- ▶ 简单即可用

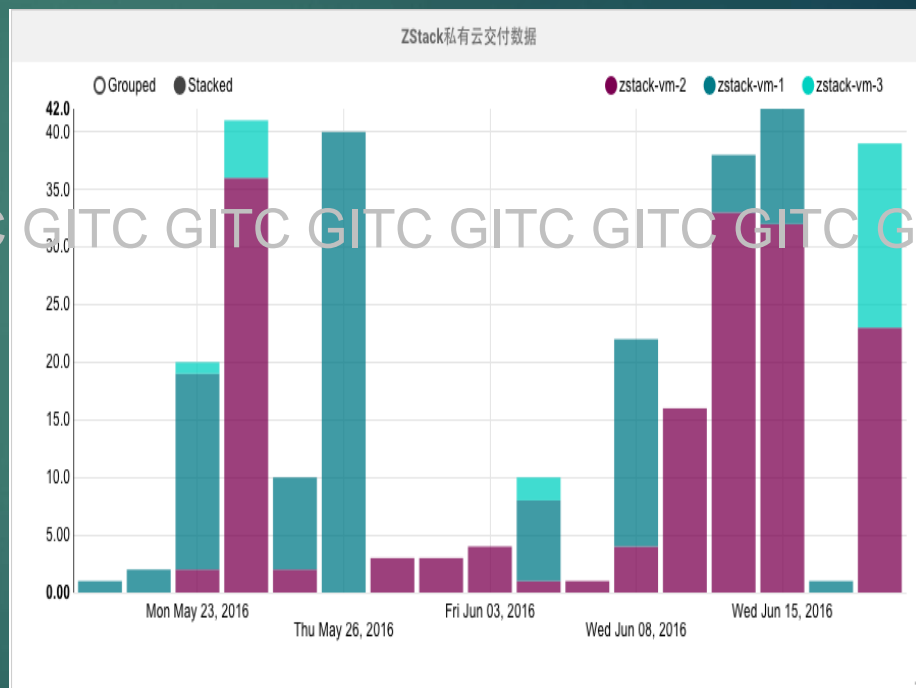
How-自动化-装机

- ▶ 装机和交付分离
- ▶ 接电自动化安装

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How-自动化-私有云zstack

- ▶ zstack和EWF结合
- ▶ 和PRO完全解耦
- ▶ 快速部署和恢复



How-自动化-故障检测和报修

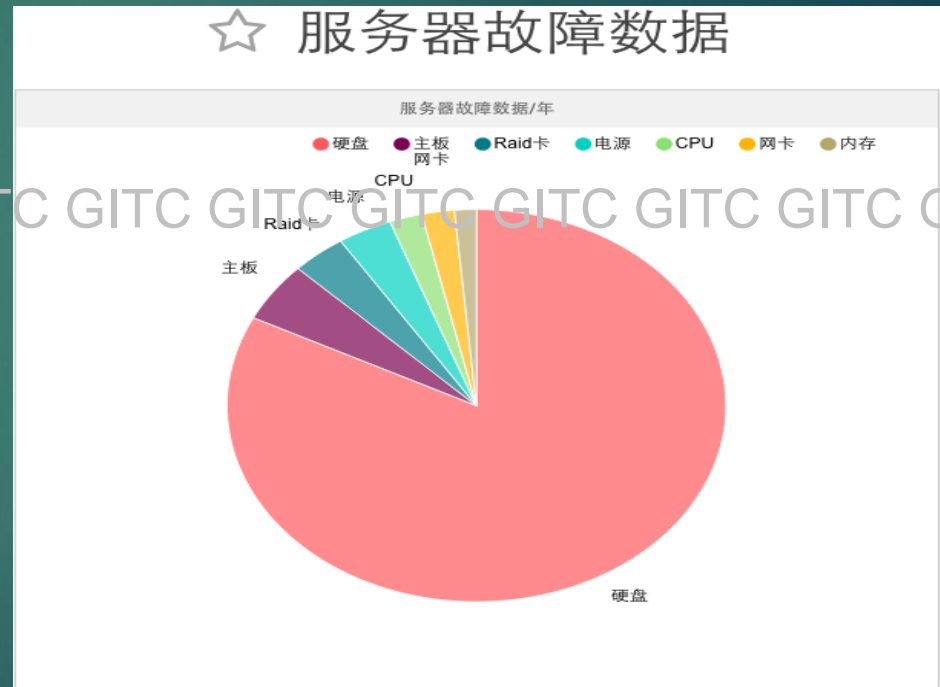
▶ Disk/mem/raid卡/cpu/网卡百兆

▶ 监控

▶ 处理

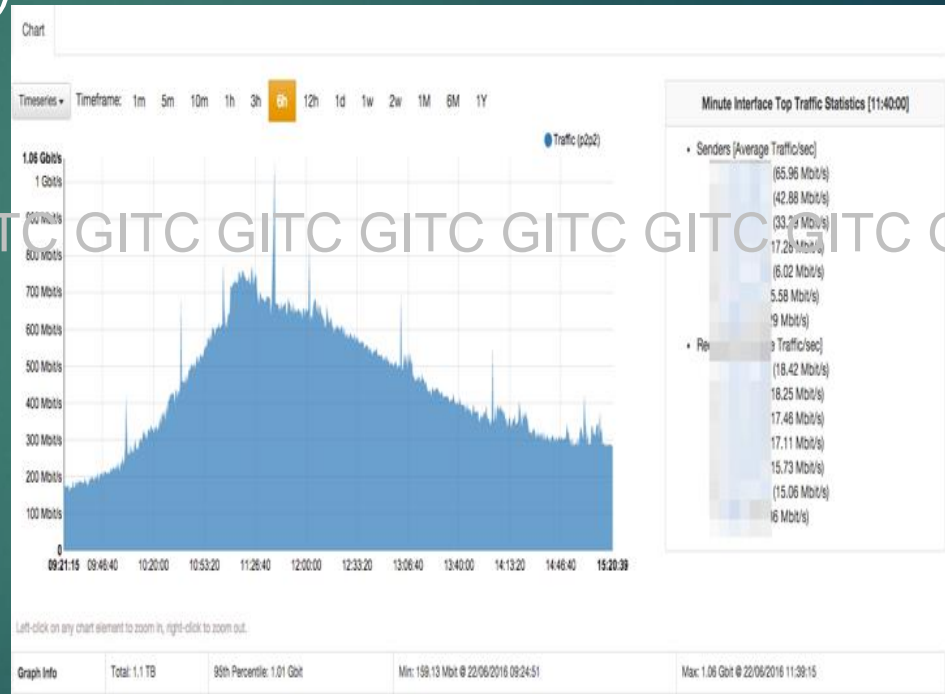
▶ 记录

☆ 服务器故障数据



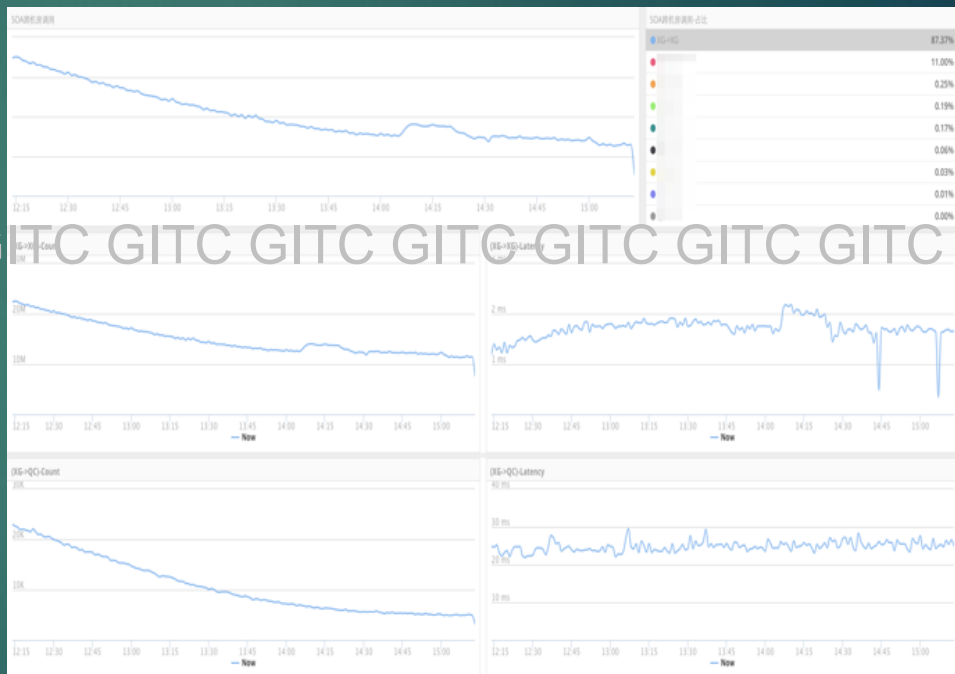
How-自动化-监控

- ▶ 网络(traffic+连通性)
- ▶ 硬件
- ▶ OS
- ▶ App
- ▶ metric



How-自动化-监控

▶ 各机房调用关系



How-自动化-监控管理

- ▶ 报警阈值自定义
- ▶ Snooze

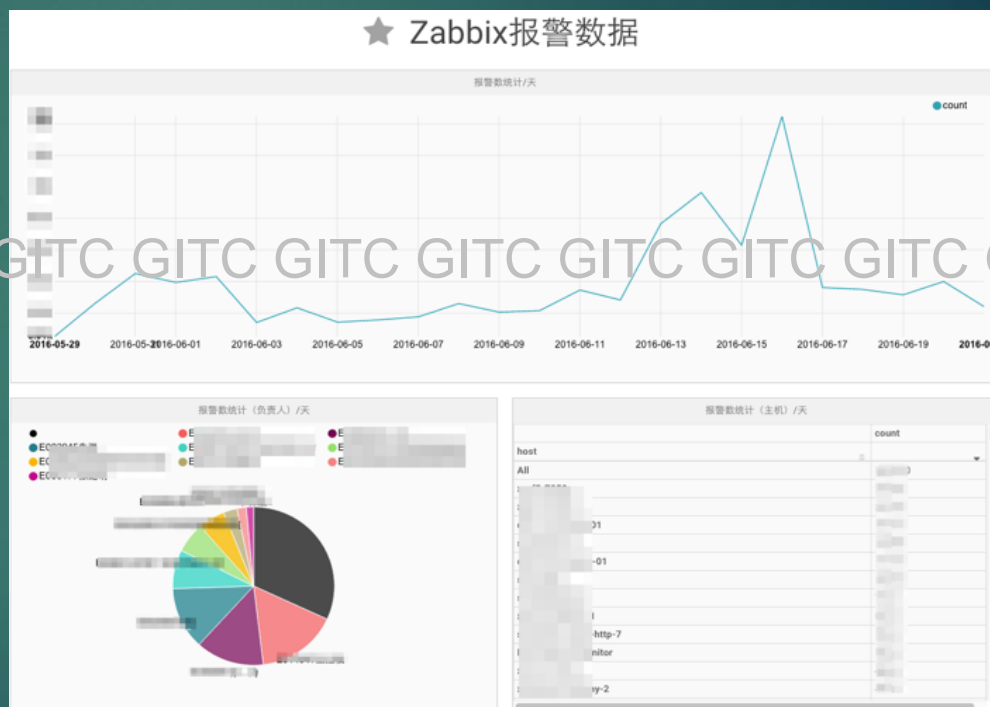
qcloud alert syslog snooze

Task Info

Host_name	Item_name	Trigger_id	Trigger_name	Trigger_status	Snooze_time	Create_time	
x	supr	nvice status	5570606 (HOST.NAME) i	is down	disabled	2016-06-20 18:30:58 修改	
x	r-2	supr	n.service status	5572792 (HOST.NAME) i	ice is down	disabled	2016-06-20 18:31:12 修改
x	NU	ca	5552859 (HOST.NAME)-)/(data/log/ves/osc.soraka/lorr.log) > (\$SELOGNUM) on osc.soraka	disabled	2016-06-18 16:37:33 修改	
x	NU	ca	5552857 (HOST.NAME)-)/(data/log/ves/osc.soraka/lorr.log) > (\$SELOGNUM) on osc.soraka	disabled	2016-06-18 16:37:20 修改	
x	ync-1	NU	ys	5552853 (HOST.NAME)-)/(data/log/ves/osc.chronos/lorr.log) > (\$SELOGNUM) on osc.chronos	disabled	2016-06-18 16:37:59 修改
x	-17	ICM	380822 (HOST.NAME) i		disabled	2016-06-17 19:35:15 修改	

How-自动化-监控数据分析

- ▶ 报警量
- ▶ 谁负责
- ▶ 报警top



How-自动化-日志平台

▶ how

▶ 实时+离线

▶ 展示&告警

▶ what

▶ access log

▶ Cdn log

▶ 大禹 log

▶ Server log

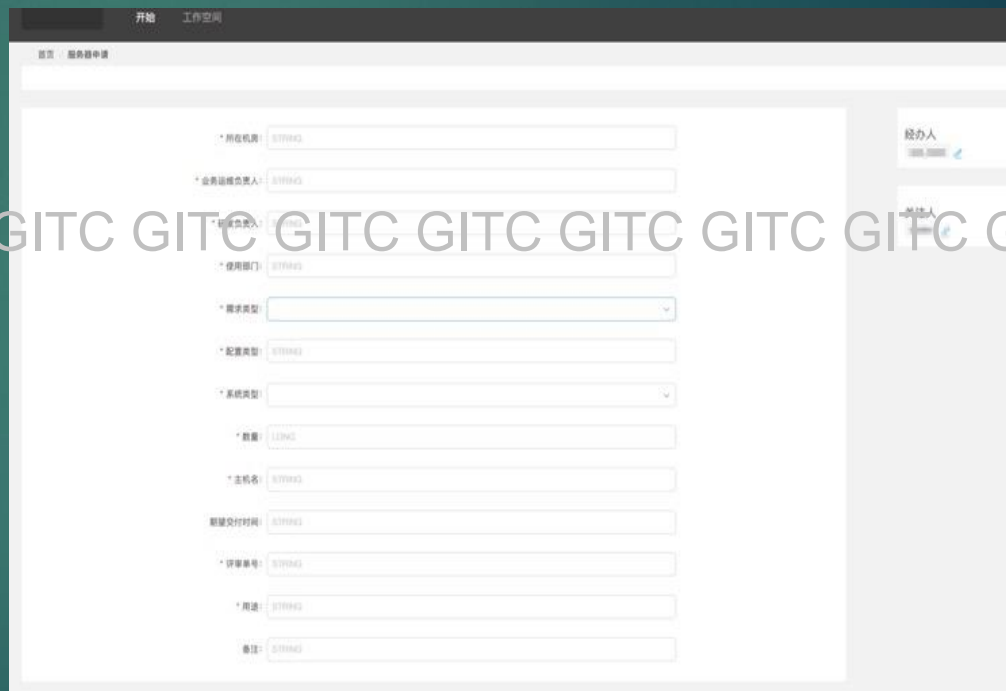
▶ Network log

The screenshot shows a log management interface with a table of alerts. The table has columns for time, severity, message, and count. A search bar for 'Hostname:' is visible on the left. The table contains various entries, including 'detection recovered in v', 'MAC move detected', and 'MAC flapping detected'. One entry is highlighted in yellow, indicating a login failure: 'e-admin, Lock Time=00 min, Lock Reason=password incorrect for 3 times, Access Type=telnet'.

Time	Severity	Message	Count
2016-06-21 18:04:30	4	<154-Jun 21 2016 18:04:30> detection recovered in v	1
2016-06-21 18:03:59	5	<189-Jun 21 2016 18:03:59> BJSERAdminMAC#9-f	1
2016-06-21 18:03:31	6	<190-Jun 21 2016 18:03:31> DIFS-GE0/0/1,STATE-D	1
2016-06-21 18:02:51	4	<154-Jun 21 2016 18:02:51> Original Port = GE0/0/2	1
2016-06-21 18:02:43	4	<154-Jun 21 2016 18:02:43> detection recovered in v	1
2016-06-21 18:01:43	4	<154-Jun 21 2016 18:01:43> Original Port = GE0/0/2	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> Port = Eth-Trunk0, Flap	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> Port = Eth-Trunk0, Flap	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> detection recovered in v	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> Port = Eth-Trunk0, Flap	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> detection recovered in v	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> Port = Eth-Trunk0, Flap	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> detection recovered in v	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> Port = Eth-Trunk0, Flap	1
2016-06-21 18:02:23	4	<154-Jun 21 2016 18:02:23> detection recovered in v	1
2016-06-21 18:02:21	3	e-admin, Lock Time=00 min, Lock Reason=password incorrect for 3 times, Access Type=telnet	1
2016-06-21 18:02:01	5	<189-Jun 21 2016 18:02:01> BJSERrootMAC#8-8-f	1

How-自动化和流程结合

自动化流程整合



The image shows a screenshot of a web application interface for a server request form. The form is titled "服务器申请" (Server Request) and is located within a "工作台" (Workbench) area. The form contains several input fields and dropdown menus, all of which are currently filled with the placeholder text "ST0001". The fields include:

- * 所在机房 (Location)
- * 业务组负责人 (Business Group Manager)
- * 申请人 (Applicant)
- * 使用部门 (Using Department)
- * 需求类型 (Request Type)
- * 配置类型 (Configuration Type)
- * 系统类型 (System Type)
- * 数量 (Quantity)
- * 主机名 (Host Name)
- 期望交付时间 (Expected Delivery Time)
- * 订单编号 (Order Number)
- * 用途 (Usage)
- 备注 (Remarks)

On the right side of the form, there are two sections for "经办人" (Handler), each with a name and a blue checkmark icon. The overall interface is clean and modern, with a white background and a dark header.

How-架构review

▶ 架构评审

▶ 架构

▶ 资源

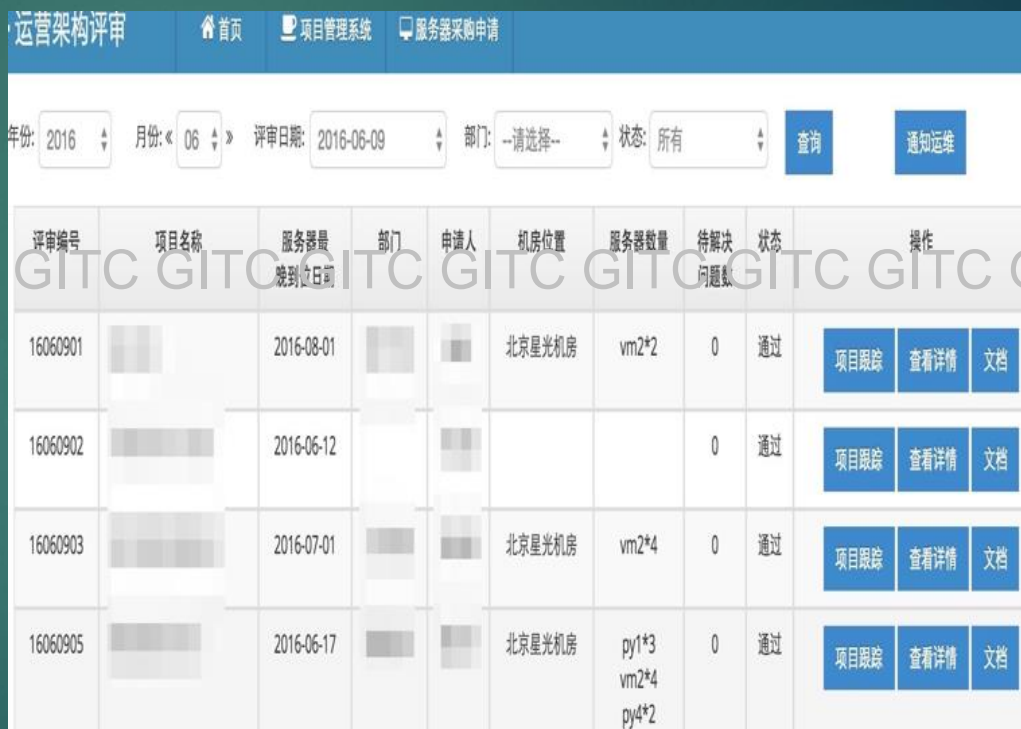
▶ 技术选型

▶ 部署模式

▶ 监控埋点

▶ 熔断/降级

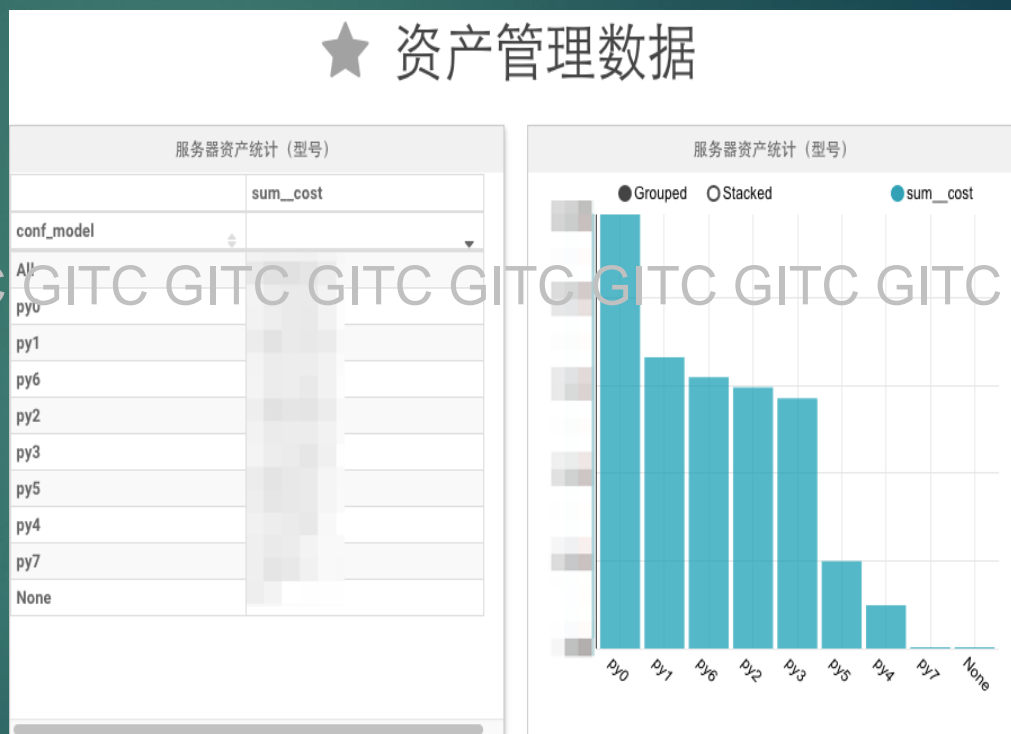
▶ 容量预估



评审编号	项目名称	服务器量 晚到日期	部门	申请人	机房位置	服务器数量	待解决 问题数	状态	操作
16060901		2016-08-01			北京星光机房	vm2*2	0	通过	项目跟踪 查看详情 文档
16060902		2016-06-12					0	通过	项目跟踪 查看详情 文档
16060903		2016-07-01			北京星光机房	vm2*4	0	通过	项目跟踪 查看详情 文档
16060905		2016-06-17			北京星光机房	py1*3 vm2*4 py4*2	0	通过	项目跟踪 查看详情 文档

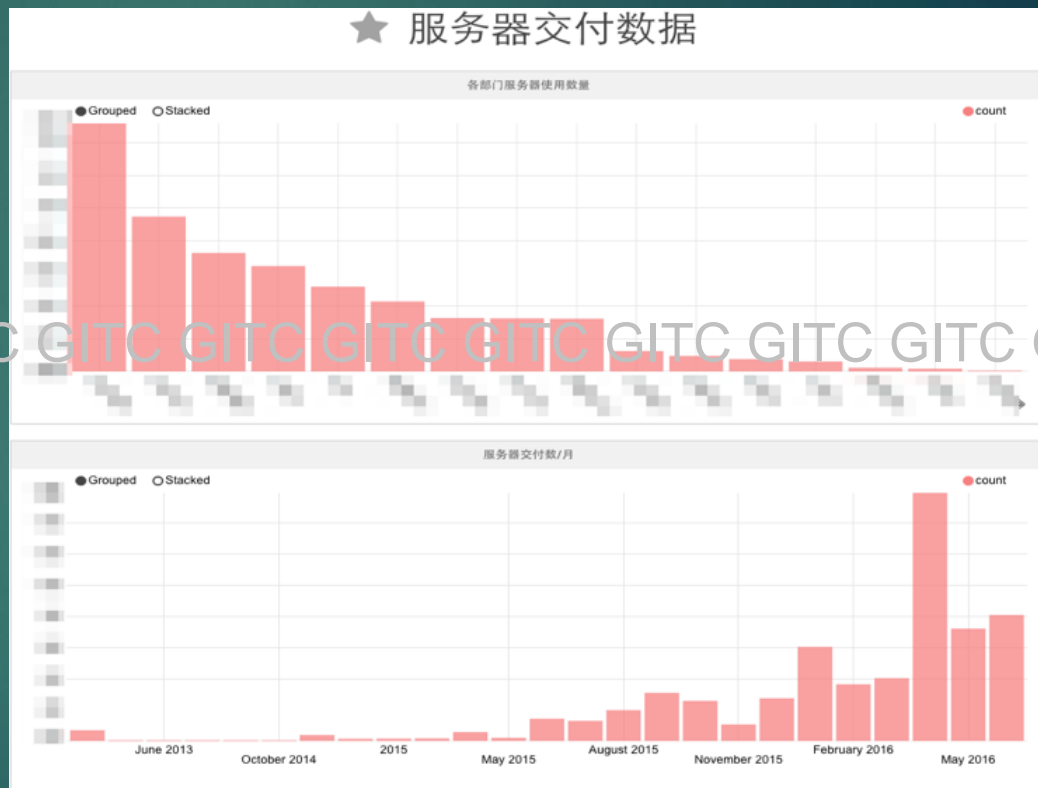
How-数据驱动

- ▶ 资产
- ▶ 成本



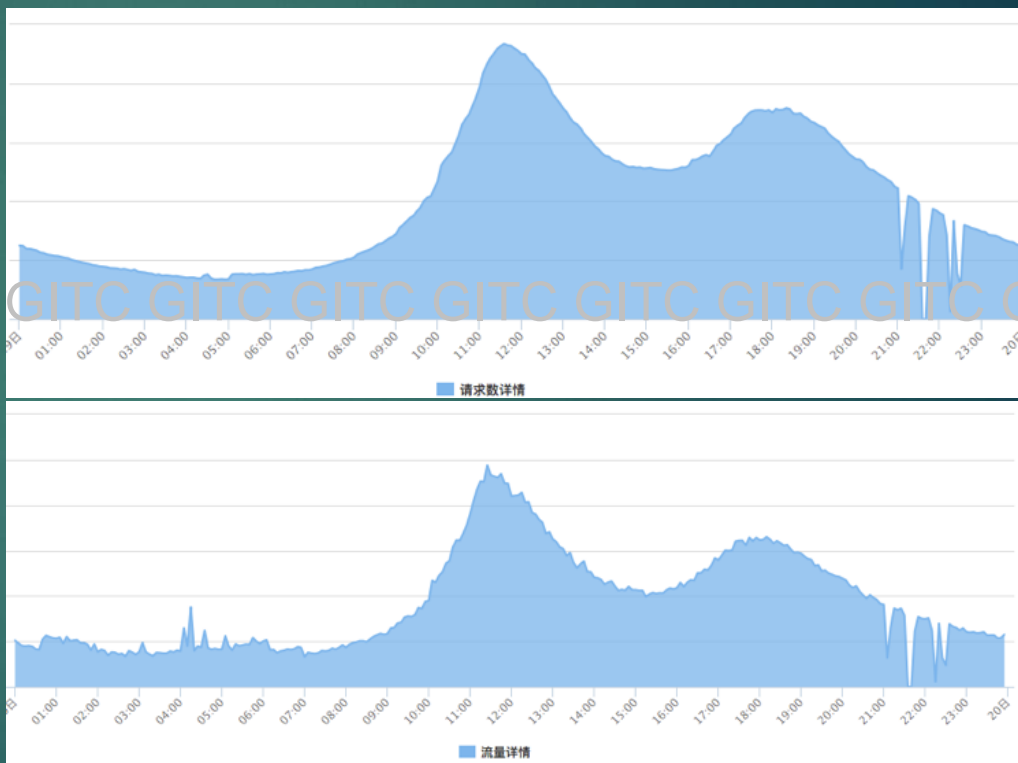
How-数据驱动

- ▶ 利用率
- ▶ 交付



How-数据驱动

▶ CDN日志



To do

- ▶ 多数据中心高可用，支持多活
- ▶ 全万兆网络/DPDK
- ▶ Docker容器化实践
- ▶ 资源利用率提高
 - ▶ 机器学习
 - ▶ 混合云架构
- ▶ 精细化运营
 - ▶ 数据分析(瓶颈/容量)
 - ▶ 数据挖掘

一些感想

- ▶ 基础设施永远要超前投资
- ▶ 业务导向，不能为了技术而技术
- ▶ 服务意识很重要
- ▶ 简单及可用
- ▶ 不要重复造轮子
- ▶ 拥抱变化



Q&A

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Thank you

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欢迎入伙

Wechat:xw2014