

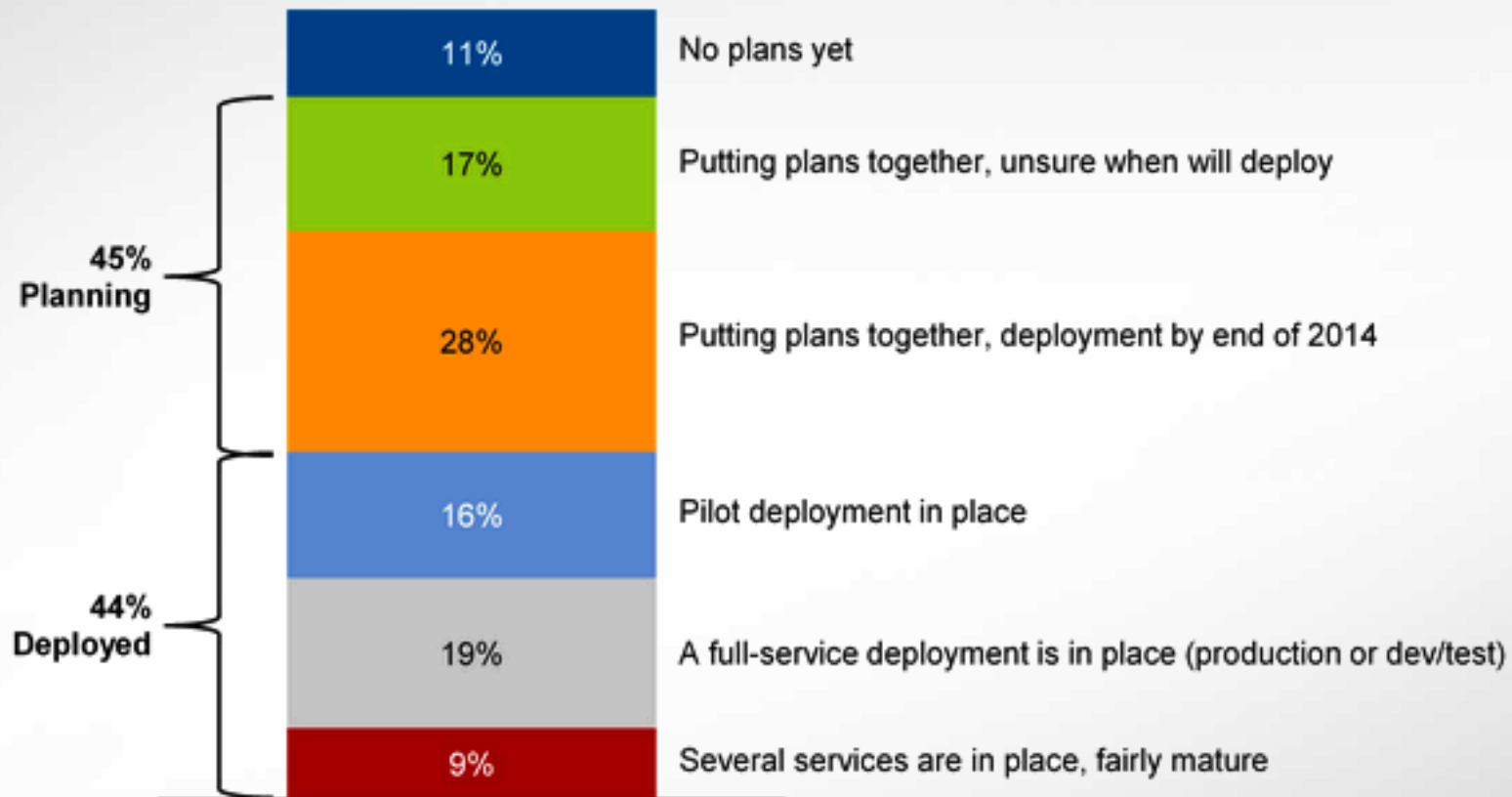


# Redhat混合云解决方案

高效管理您的异构环境

Martin Liu  
高级解决方案架构师

# 私有云发展趋势



Source: Gartner (September 2013)

Forty-four percent of those enterprises polled had deployed a private cloud service, at least as a pilot project.

**Analysis:** The private cloud trend is moving quickly. By 2014, 72% of respondents planned to have a private cloud service in place. Only 11% of respondents in the poll said they had no plans to deploy a private cloud service.



# 云计算需要哪些关键功能？

自服务的申请流程

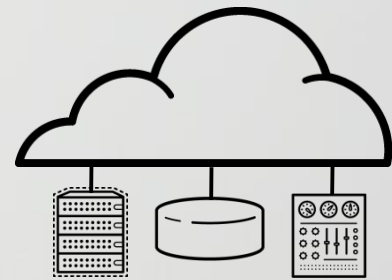
有效的基础平台管理

灵活的计费规则

快速部署

灵活的扩展和释放资源

有效利用现有硬件资源



# 云计算运维面临的挑战

## FLEXIBILITY

- 闭源软件在大规模部署的成本巨大
- 需要开源解决方案满足不断扩充的业务
- 避免重构现有架构和硬件
- 避免厂商Lock-in

## MANAGEMENT

- 规模化后维护工作量巨大
- 多种虚拟化平台没有统一管理平台，需要分别维护
- 用户自服务和控制策略和安全管理的冲突
- 缺乏有效的审批管理流程
- 差异化的监控策略

## WORKLOADS

- 传统的业务无法快速切换到云平台
- 新业务更容易适应云环境
- 需要混合架构统一管理



# RED HAT混合云解决方案

PaaS

Application



Red Hat  
OpenShift

PORTABILITY

Applications  
&

IaaS

Operating System



Linux; Windows

Infrastructure



Virtual or Physical

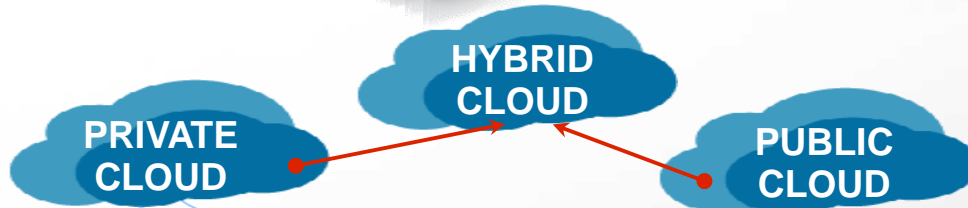
Operating System  
and Hardware



CLLOUDFORMS



SELF-SERVICE  
Consumption with Control



VIRTUAL  
RESOURCES

PHYSICAL  
RESOURCES

PUBLIC  
RESOURCES



VMware  
vSphere



Red Hat  
RHEV



Microsoft  
System  
Center



Red Hat  
OpenStack



Red Hat  
Enterprise  
Linux



Microsoft  
Windows



Amazon  
EC2

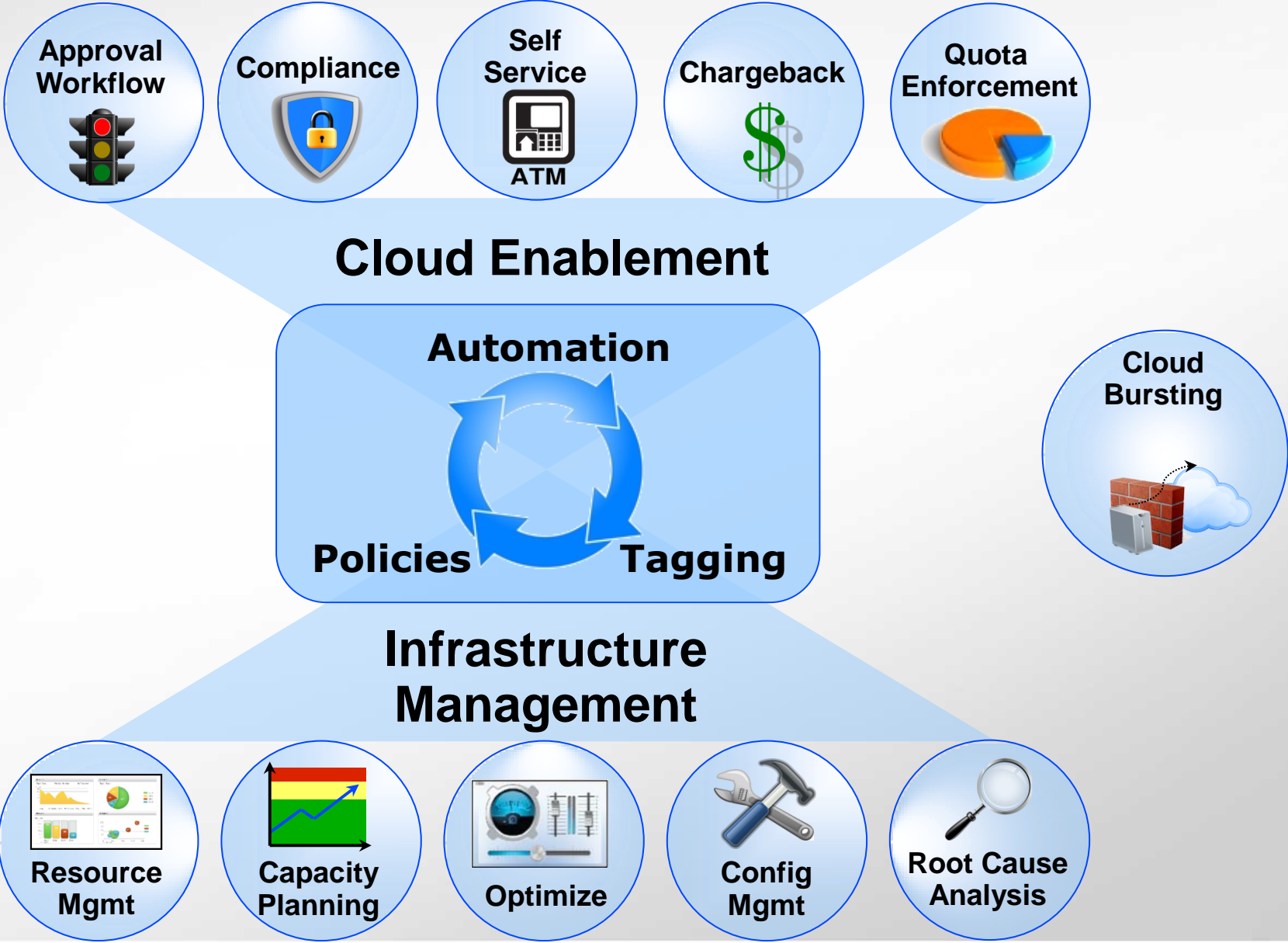


Rackspace

Red font denotes a future enhancement



# RED HAT CLOUDFORMS



# CLouDFORMS

## 有效利用现有基础设施

**AGENT-FREE,  
VIRTUAL APPLIANCE  
ARCHITECTURE**



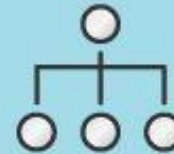
Rapid deployment, non-invasive  
(Industry Standard OVF)

**WEB-BASED  
OPERATIONS, ADMIN  
AND SELF-SERVICE**



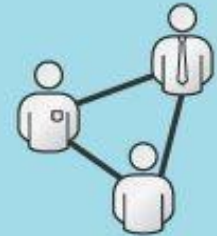
Access anywhere from  
any browser

**ENTERPRISE  
DIRECTORY SUPPORT**



Leverage directory for  
authentication and role

**SUPPORTS  
MULTI-TENANCY**



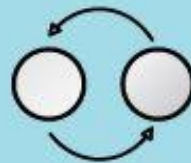
Securely share  
infrastructure

**HORIZONTALLY  
SCALABLE**



Highly scalable,  
load balancing

**LOAD BALANCING,  
FAILOVER/BACK**



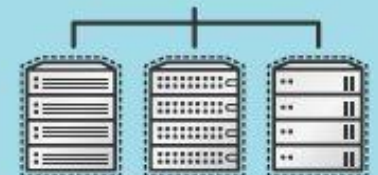
Provides reliability,  
high availability

**MANAGEMENT  
ACROSS MULTIPLE  
LOCATIONS**



Single pane of glass,  
unified management

**MANAGEMENT  
ACROSS VIRTUAL  
PLATFORMS &  
PUBLIC CLOUDS**



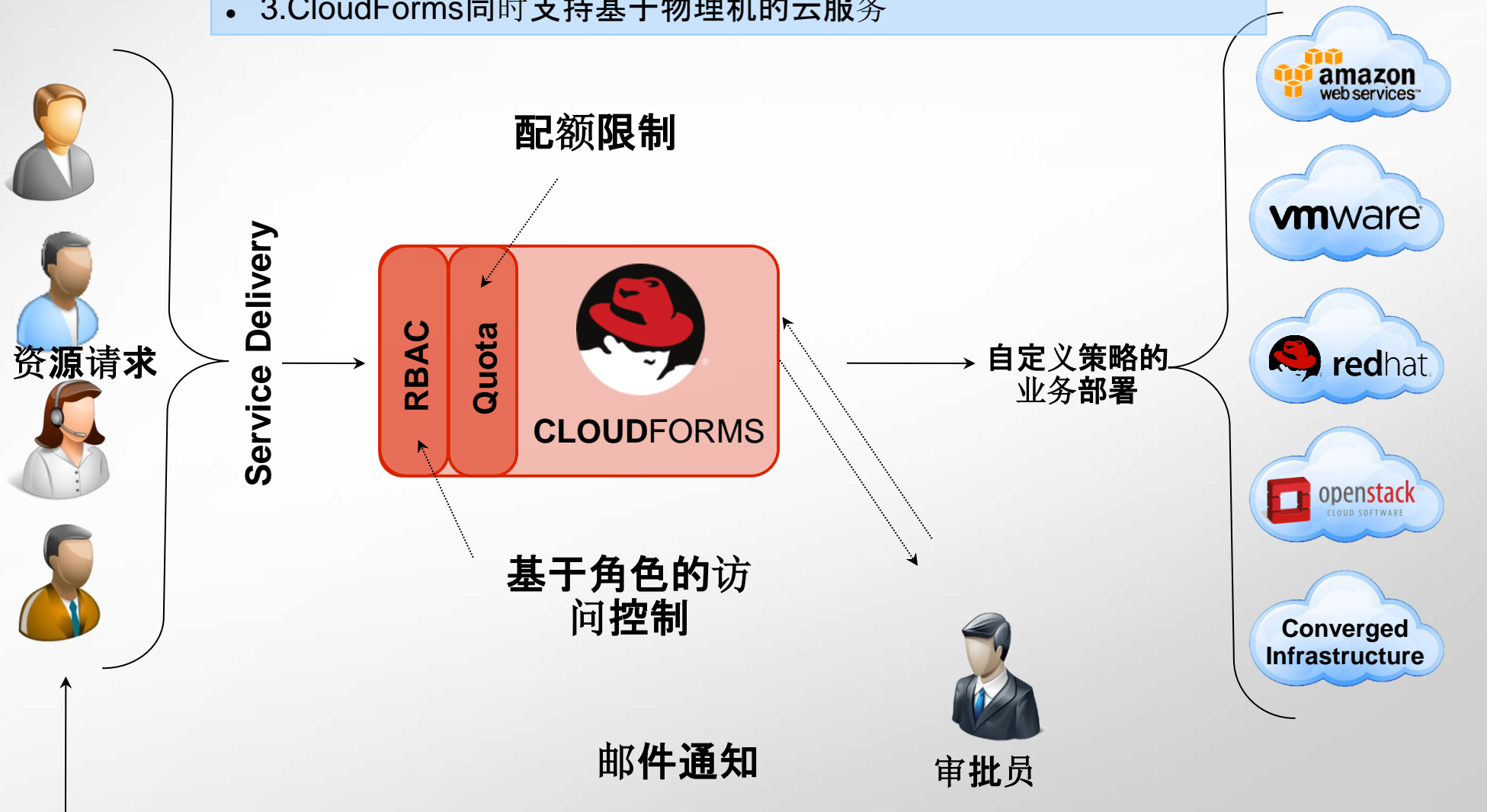
Single pane of glass,  
unified management





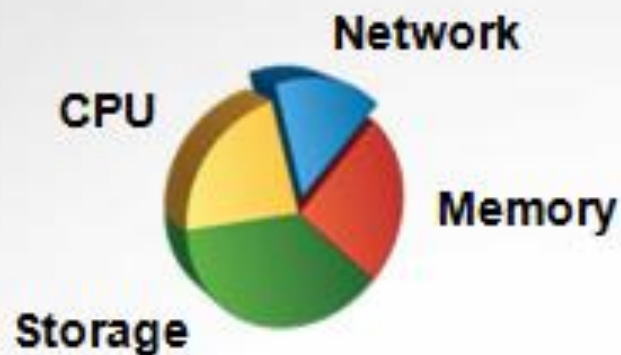
# 混合云业务-自服务部署

- 1.CloudForms提供了标准的云业务审批流程
- 2.CloudForms提供强大的自定义扩展功能
- 3.CloudForms同时支持基于物理机的云服务





# 混合云业务-计费



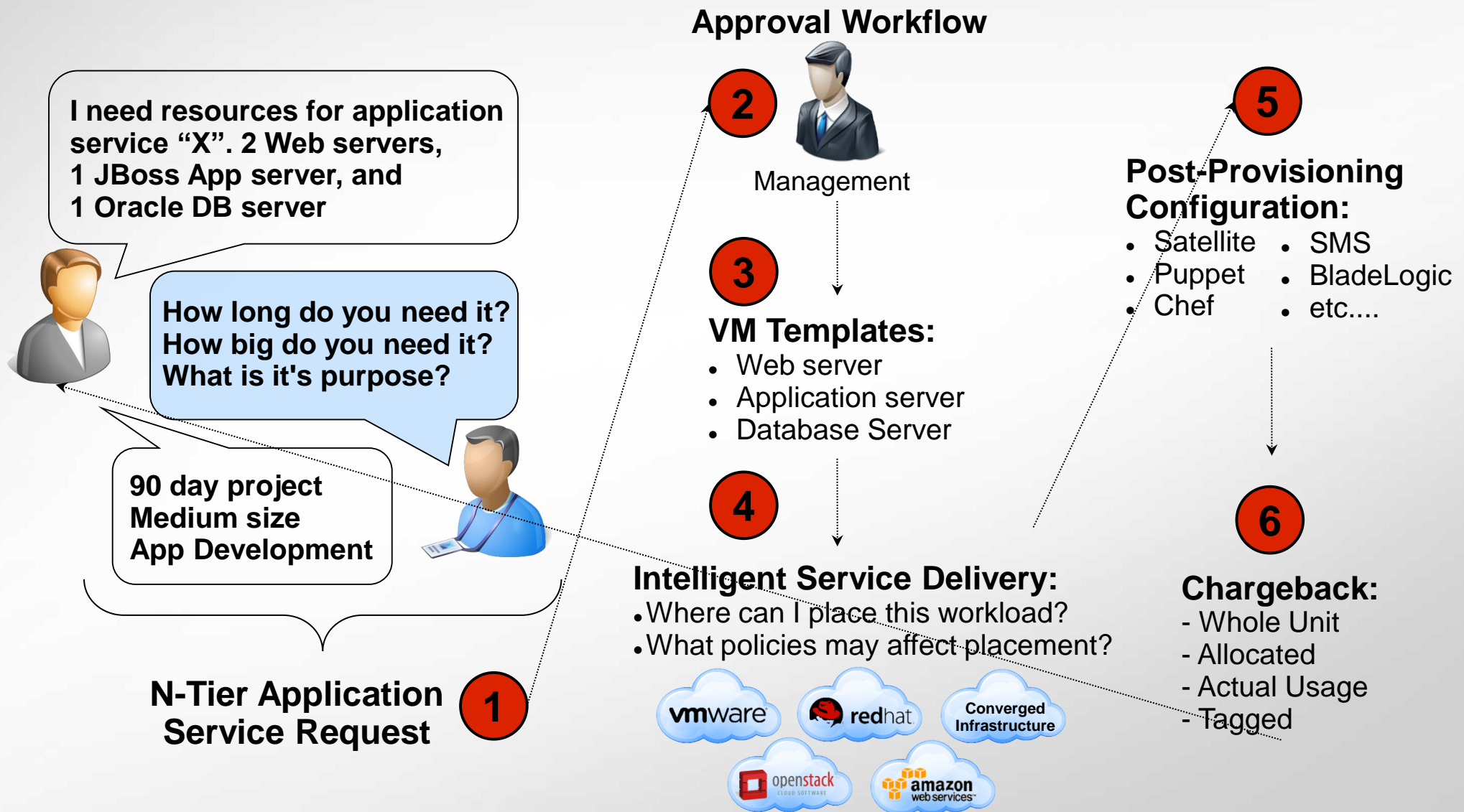
## 4 Dimensions to Cost:

- Whole Unit
- Allocated
- Actual Usage
- Tagged

Instance ID	Name	Total Cost	Owner	CPU Allocated	CPU Allocated Cost	CPU Total Cost	CPU Total	CPU Used Cost	CPU Used	Disk I/O Used Cost	Disk I/O Used	Fixed Compute Cost 1	Fixed Compute Cost 2	Fixed Total Cost	Memory Allocated Cost	Memory Allocated	Memory Total Cost	Memory Total	Memory Used Cost	Memory Used
...	V50001	\$216.43		\$0.01	24 MHz	\$32.83	312 MHz	\$32.81	328 MHz	\$3.73	373 KBps	\$1.71	\$1.17	\$2.88	\$3.41	48 GB	\$177.00	40.7 GB	\$173.59	1.7 GB
...	V50002	\$12,396.84		\$0.02	48 MHz	\$11,927.00	119 GHz	\$11,926.98	119 GHz	\$0.00	0 KBps	\$1.71	\$1.17	\$2.88	\$6.83	96 GB	\$466.96	100.5 GB	\$460.14	4.5 GB
...	IAAPP001	\$233.33	Cloud	\$0.02	48 MHz	\$33.83	336 MHz	\$33.81	338 MHz	\$0.00	0 KBps	\$1.71	\$1.17	\$2.88	\$30.24	144 GB	\$176.42	145.6 GB	\$166.18	1.6 GB
...	IAAPP002	\$148.66	Cloud	\$0.01	24 MHz	\$35.55	170 MHz	\$35.54	151 MHz	\$0.00	0 KBps	\$1.71	\$1.17	\$2.88	\$6.83	96 GB	\$130.23	97.2 GB	\$123.40	1.2 GB
...	IAAPP003	\$32.32	Cloud	\$0.01	24 MHz	\$9.17	116 MHz	\$9.16	92 MHz	\$0.01	1 KBps	\$1.71	\$1.17	\$2.88	\$3.41	48 GB	\$40.71	48.4 GB	\$36.80	36.8 MB
<b>12/13/2012</b>																				
Totals:		\$13,647.37			268 MHz	\$12,094.36	123 GHz		120 GHz	378 KBps				\$14.40		432 GB	\$990.82	441.4 GB		9.4 GB
<b>12/14/2012</b>																				
12/14/2012	ATCPKV50001	\$176.87		\$0.01	24 MHz	\$28.81	312 MHz	\$28.84	288 MHz	\$1.76	176 KBps	\$1.71	\$1.17	\$2.88	\$3.41	48 GB	\$143.38	45.4 GB	\$139.97	1.4 GB
12/14/2012	ATCPKV50002	\$12,244.38		\$0.02	48 MHz	\$11,787.74	118 GHz	\$11,787.72	118 GHz	\$0.00	0 KBps	\$1.71	\$1.17	\$2.88	\$6.83	96 GB	\$453.56	100.4 GB	\$446.73	4.4 GB
12/14/2012	ATCPNDAPP001	\$127.22	Cloud	\$0.02	48 MHz	\$38.83	436 MHz	\$38.81	388 MHz	\$0.00	0 KBps	\$1.71	\$1.17	\$2.88	\$30.24	144 GB	\$85.51	144.7 GB	\$75.27	752.7 MB
12/14/2012	ATCPNDAPP002	\$136.02	Cloud	\$0.01	24 MHz	\$34.36	167 MHz	\$34.35	143 MHz	\$0.00	0 KBps	\$1.71	\$1.17	\$2.88	\$6.83	96 GB	\$118.79	97.1 GB	\$111.96	1.1 GB
12/14/2012	ATCPNDAPP003	\$48.79	Cloud	\$0.01	24 MHz	\$8.44	108 MHz	\$8.43	84 MHz	\$0.04	4 KBps	\$1.71	\$1.17	\$2.88	\$3.41	48 GB	\$36.82	48.3 GB	\$33.41	334.1 MB
<b>12/14/2012</b>																				
Totals:		\$12,732.48			268 MHz	\$11,876.22	119 GHz		119 GHz	380 KBps				\$14.40		432 GB	\$498.06	499.9 GB		7.9 GB



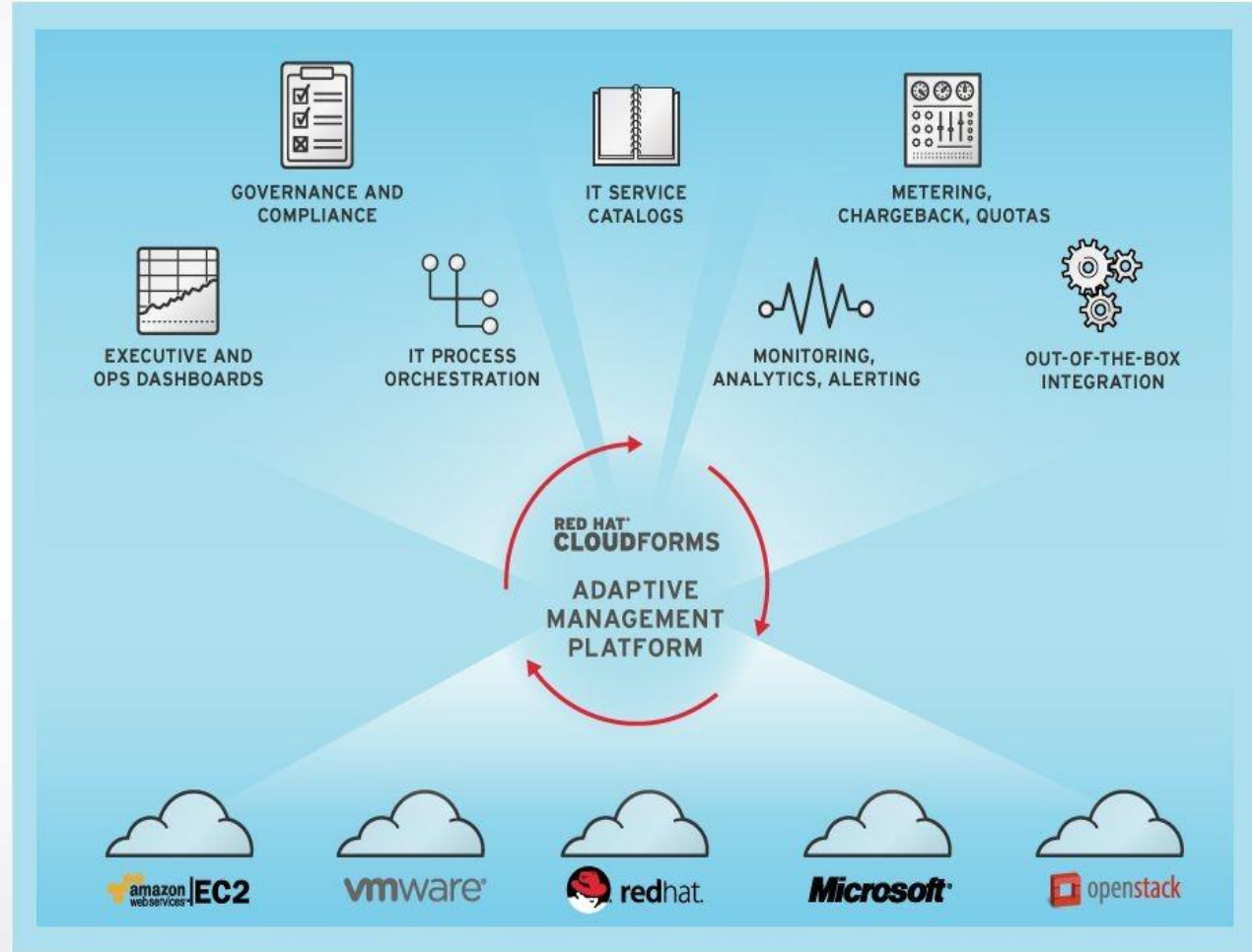
# 混合云业务-快速部署



# CLOUDFORMS 基础架构管理

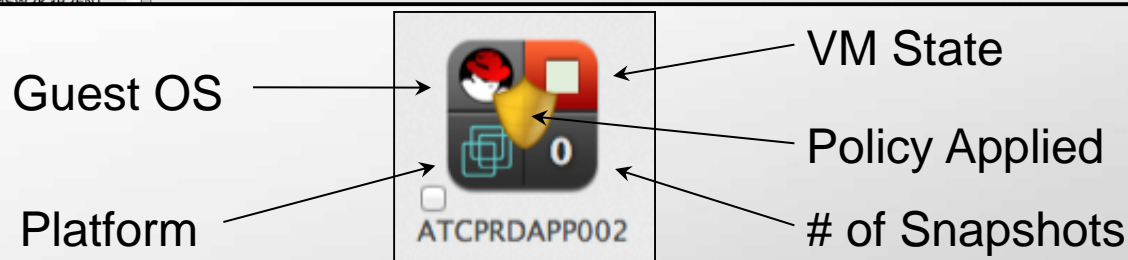
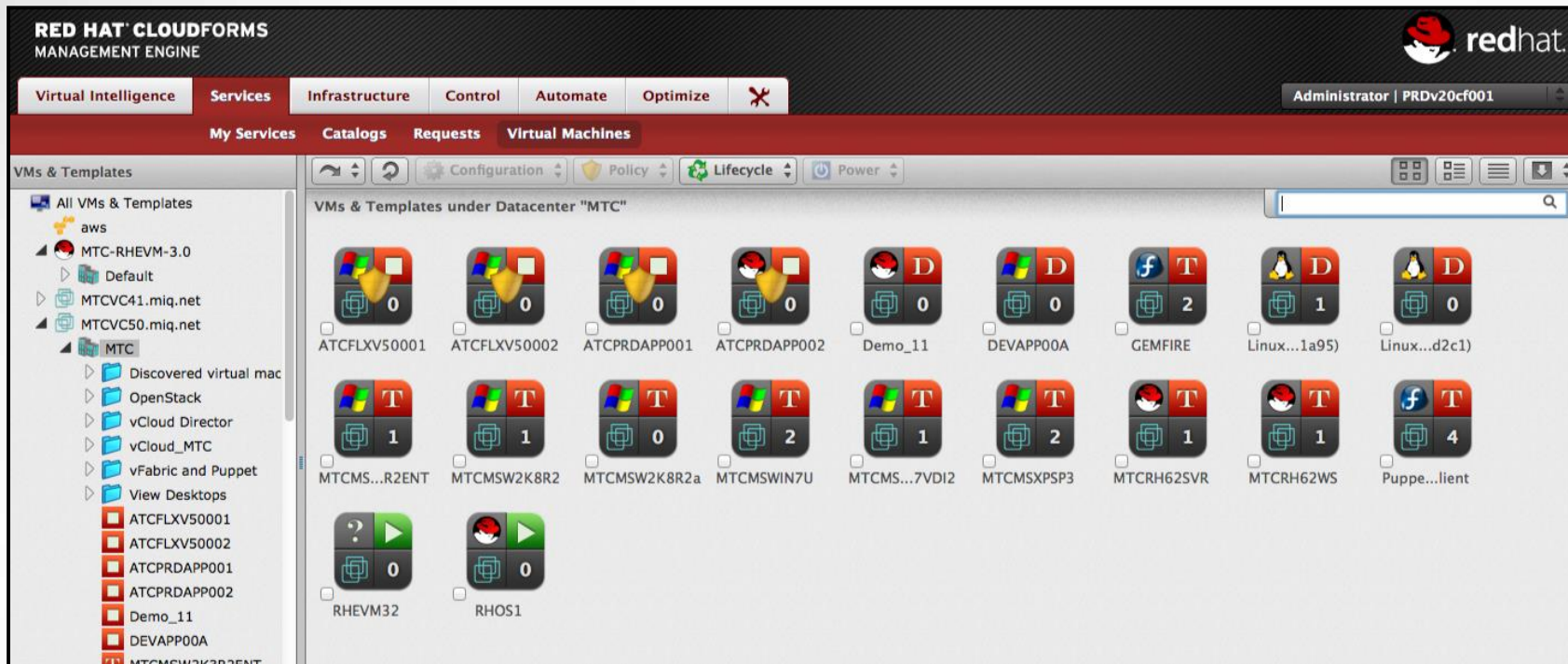


- CloudForms提供了一系列的运维工具，提升基础设施的维护效率
- 统一的管理界面，提供运维过程Host, VM的基本操作管理
- 定制的安全规范检查功能，快速检查环境合规性。
- 可定制的告警监控，满足不同业务要求
- 可定制的报表功能，有效进行资源浪费检测
- 避免厂商Lock-In



# 基础设施管理-支持混合架构

CloudForms支持对虚拟机磁盘进行SmartState分析, 获取管理平台 以外的管理数据





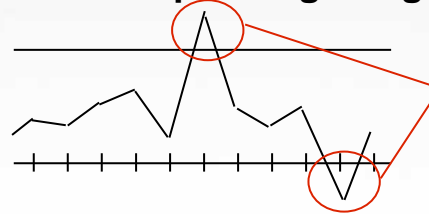
# 基础设施管理-故障分析

Where is the best place to run a new workload?  
How can I optimize existing resources?



I didn't create the workload, but I need to determine what's the problem and how to fix it

## 1 Workload Balancing Normal Operating Range



What is causing spikes?



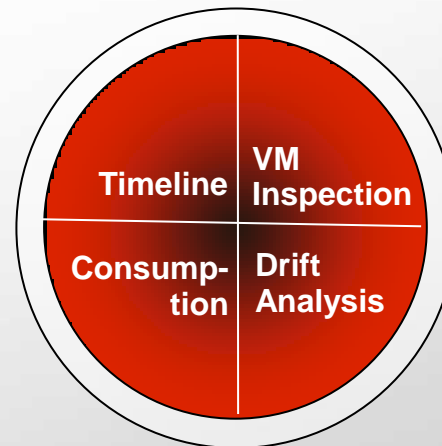
## 2 Capacity Management



Can cluster "X" handle workload?  
Where do I have performance issues?  
Where do I have waste?



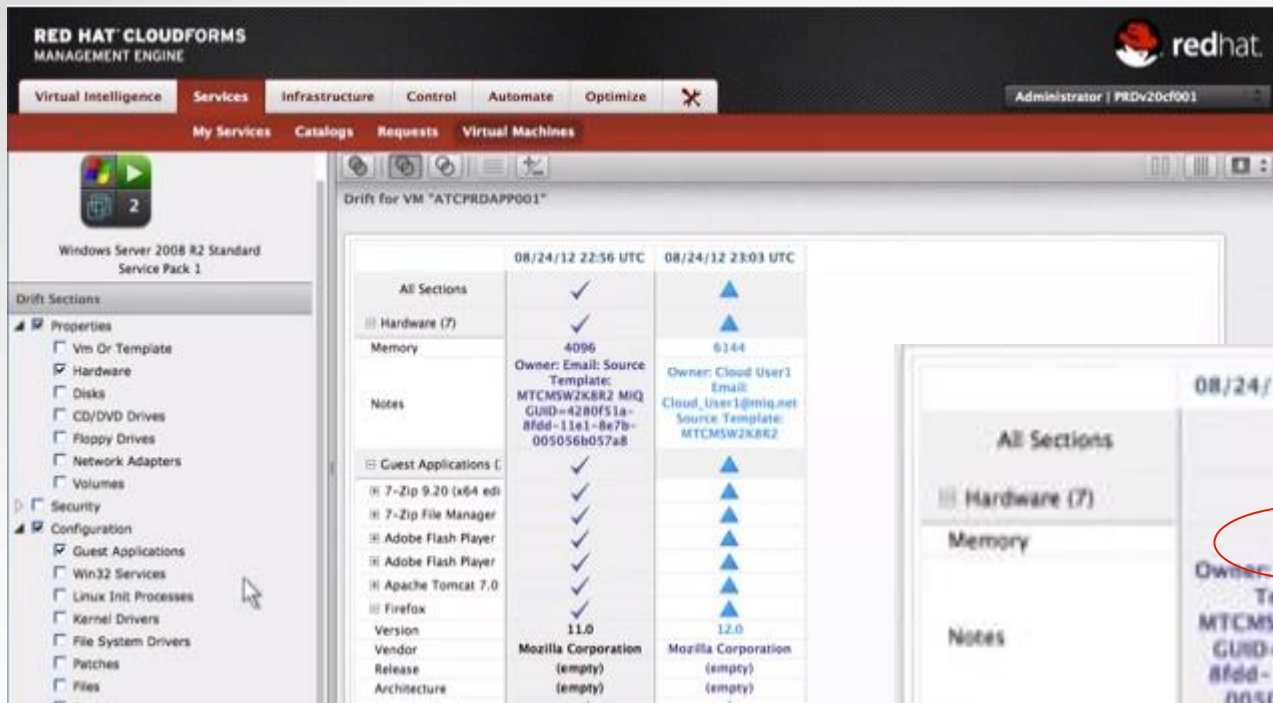
## 3 Operations and Support



Identify root cause and reduce mean time to resolution (MTTR) by viewing workloads in 4 dimensions



# 基础设施管理-故障分析



When VM compared to template, quickly see issue was caused by recently increased memory

- 分析最近虚拟机相关差异，方便快捷定位问题
- 支持虚拟机配置，虚拟机内操作系统差异

	08/24/12 22:56 UTC	08/24/12 23:03 UTC
All Sections	✓	▲
Hardware (7)	✓	▲
Memory	4096	6144
Notes	Owner: Email: Source Template: MTCMSW2K8R2 MIQ GUID=4280f51a-8fdd-11e1-8e7b-005056b057a8	Owner: Cloud User1 Email: Cloud_user1@miq.net Source Template: MTCMSW2K8R2
Guest Applications (	✓	▲
7-Zip 9.20 (x64 edi	✓	▲
7-Zip File Manager	✓	▲
Adobe Flash Player	✓	▲
Adobe Flash Player	✓	▲
Apache Tomcat 7.0	✓	▲
Firefox	✓	▲
Version	11.0	12.0
Vendor	Mozilla Corporation	Mozilla Corporation
Release	(empty)	(empty)
Architecture	(empty)	(empty)

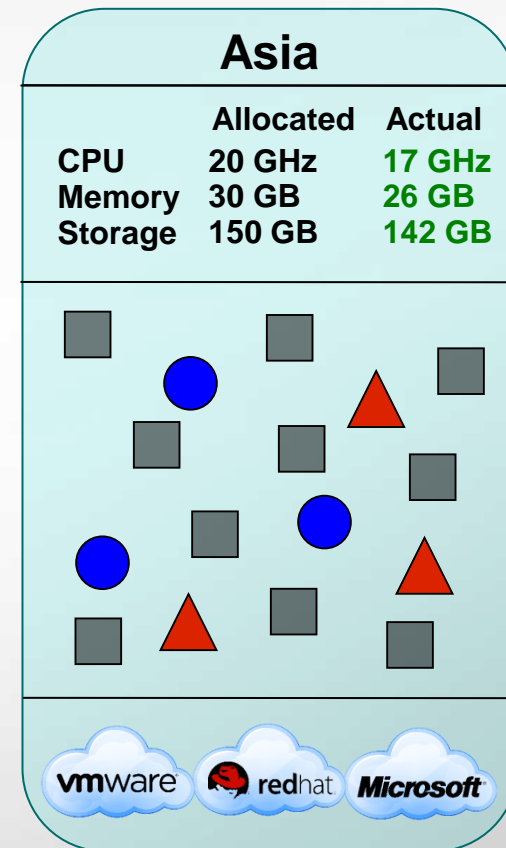
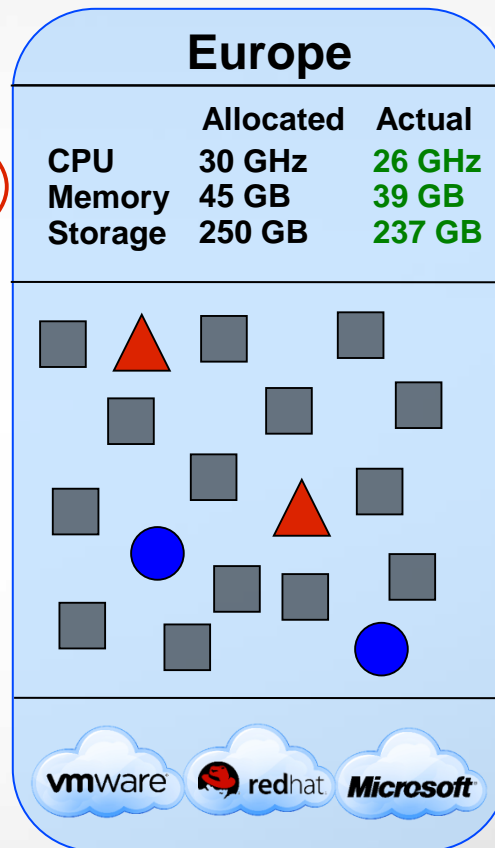
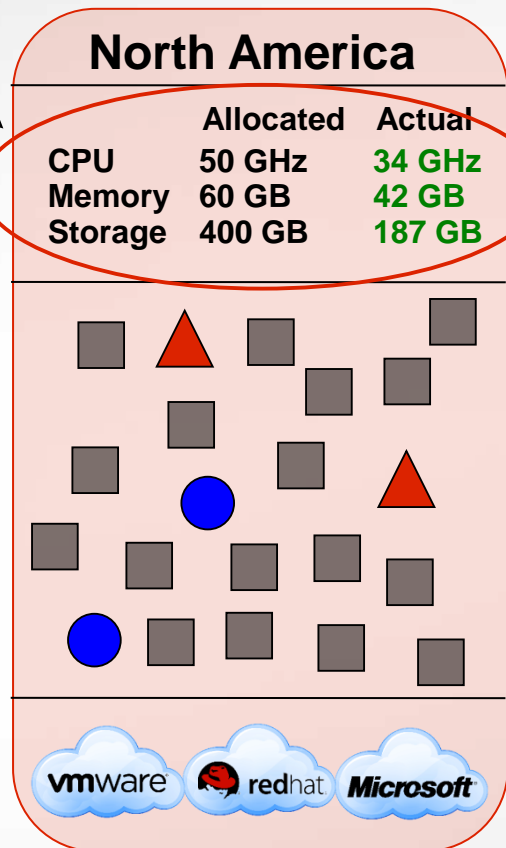


# 基础设施管理-虚拟资源浪费检测

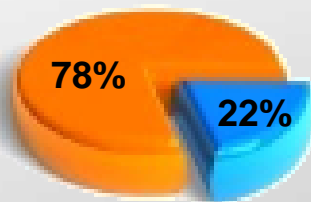
## Over-Allocated

CPU by 16 GHz  
Memory by 18 GB  
Storage by 213 GB

- = VM
- = VM sprawl
- ▲ = Incorrectly configured workload



- 虚拟机资源配置合理性检查
- 存储垃圾文件检测



## Storage Consumption

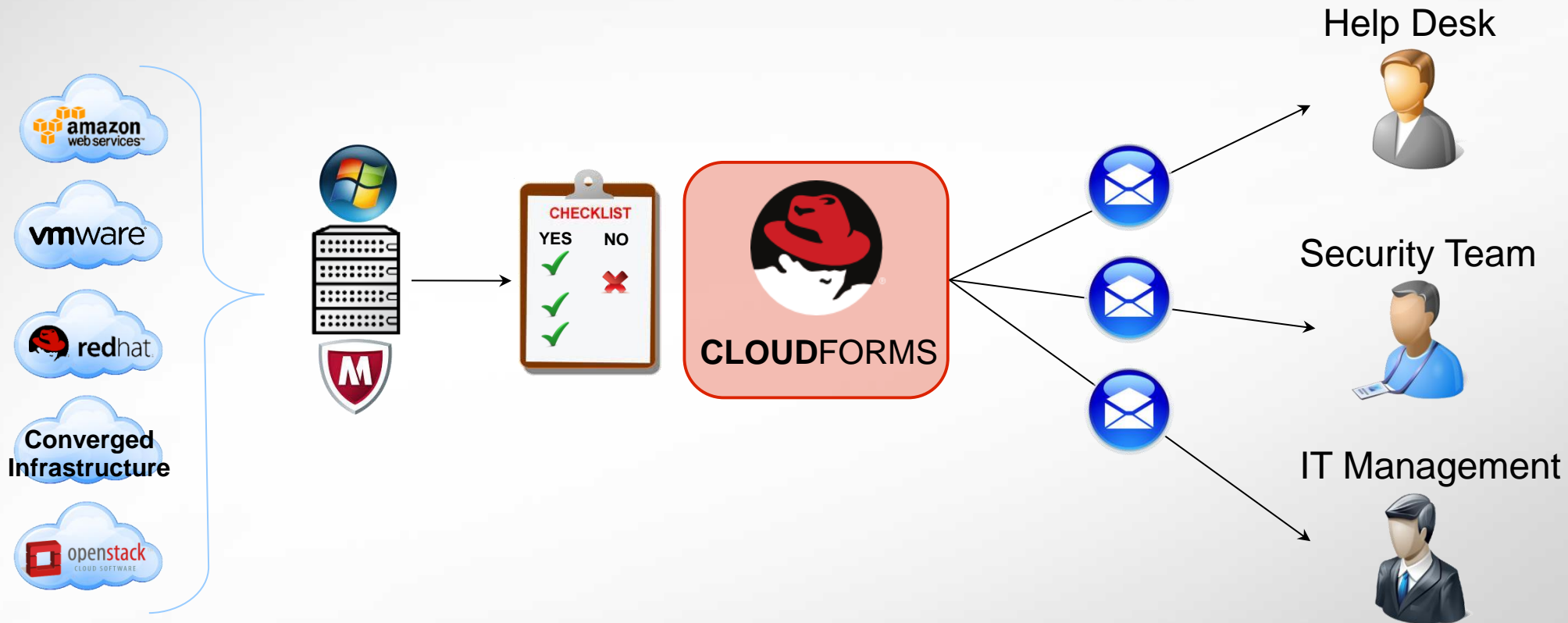
Understand resource consumption today and trending over time:  
Storage – **78% Used** **22% Free**





# 基础设施管理-有效的安全管理

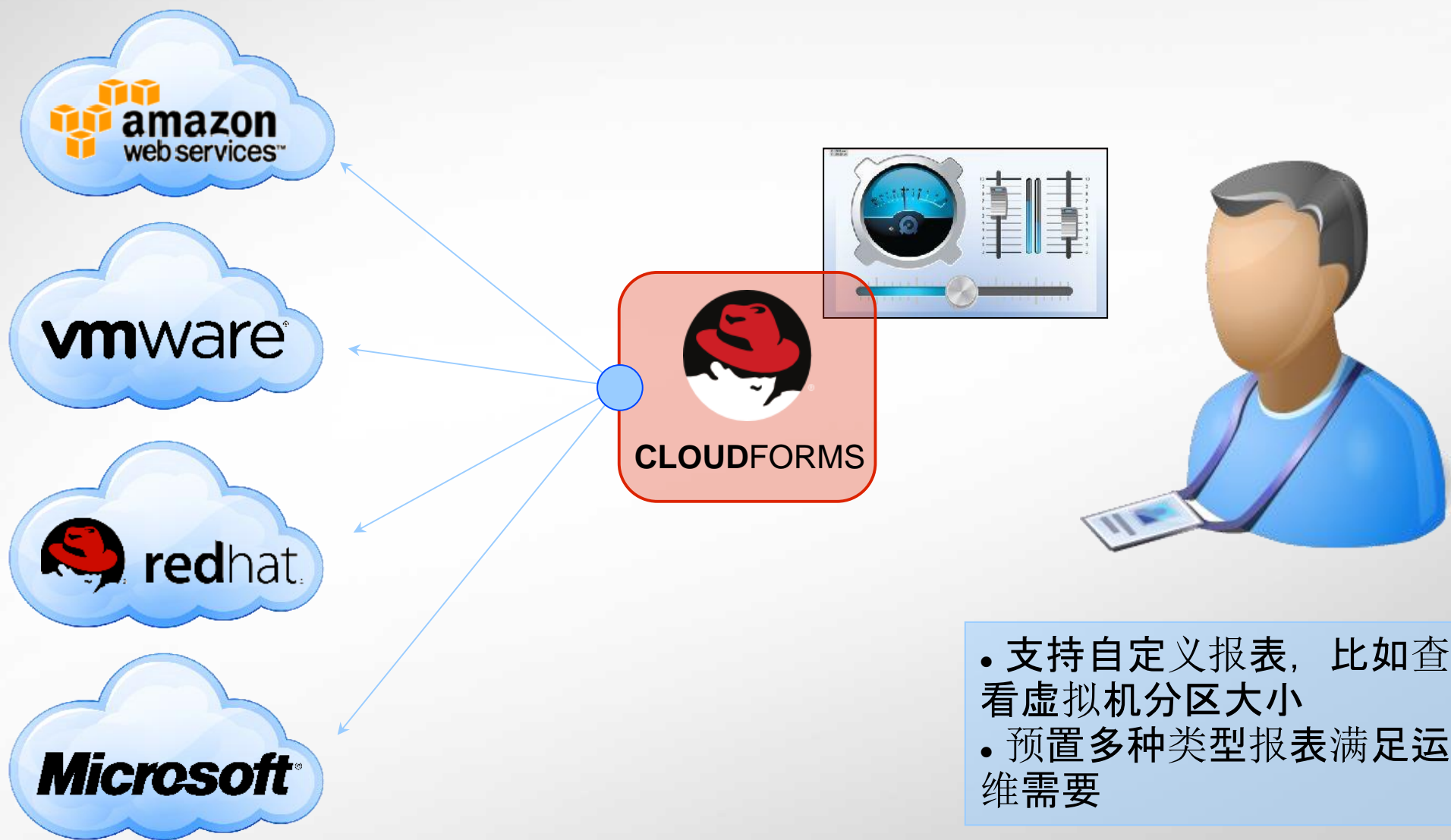
简单规则: 所有开发测试环境中的Windows必须运行McAfee v2.0



- 用户只可以使用满足合规性的虚拟机
- 不满足合规性的虚拟机禁止运行
- 自动进行管理员邮件通知
- 可针对不同资源单独指定规则



# 基础设施管理-报表



- 支持自定义报表，比如查看虚拟机分区大小
- 预置多种类型报表满足运维需要



# IT CLOUD MANAGEMENT集成

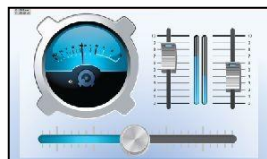
Enterprise Service Catalogs



Management & Reporting



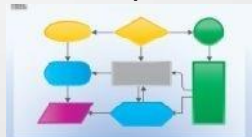
Event Consoles



CMDB



ITPA/RBA



- 1.CloudForms可以和IPA、AD认证，集成到用户现有的用户集中管理系统中
- 2.CloudForms可以和第三方的告警平台集成
- 3.CloudForms可以和现有的资产管理系统集成 ( Host VM ) 。
- 4.CloudForms可以和现有系统的IPAM进行集成，有效完成IP、DNS管理。



# CLouDFORMS 优势

- **成本优势**
  - Lowest cost of leading commercial vendors
- **快速平滑提供云服务**
  - CloudForms部署在虚拟机上, 无需代理
- **统一界面**
  - 统一的界面提供多种功能
- **有效提升维护效率**
  - 灵活的自定义和集成功能, 减少人工维护工作
- **开放/灵活**
  - 支持多种虚拟化平台

