RED HAT'S APPROACH TO AN OPEN HYBRID CLOUD

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Solutions Architect
AUG 2013

AGENDA

- Qué es Red Hat?
- El modelo Open Source
- Cloud y cambio de paradigma de IT
- Ventajas de una nube híbrida abierta
- Modelo IaaS – PaaS
- Red Hat Enterprise Linux
- Soluciones de virtualización y cloud

¿QUÉ ES RED HAT?

Nº1

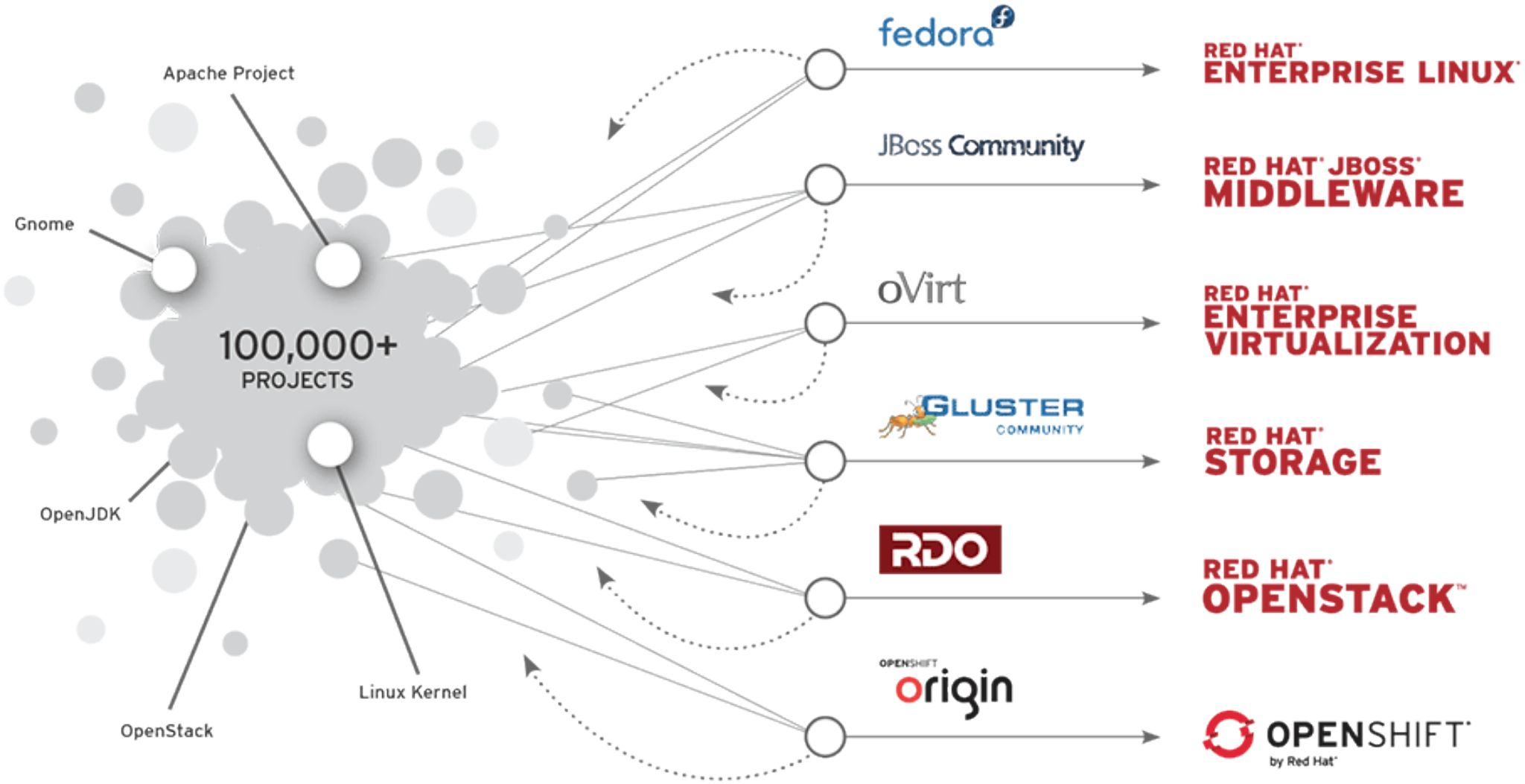
OPEN SOURCE LEADER

Ofrecemos software para aplicaciones de misión crítica junto con servicios y soporte Enterprise

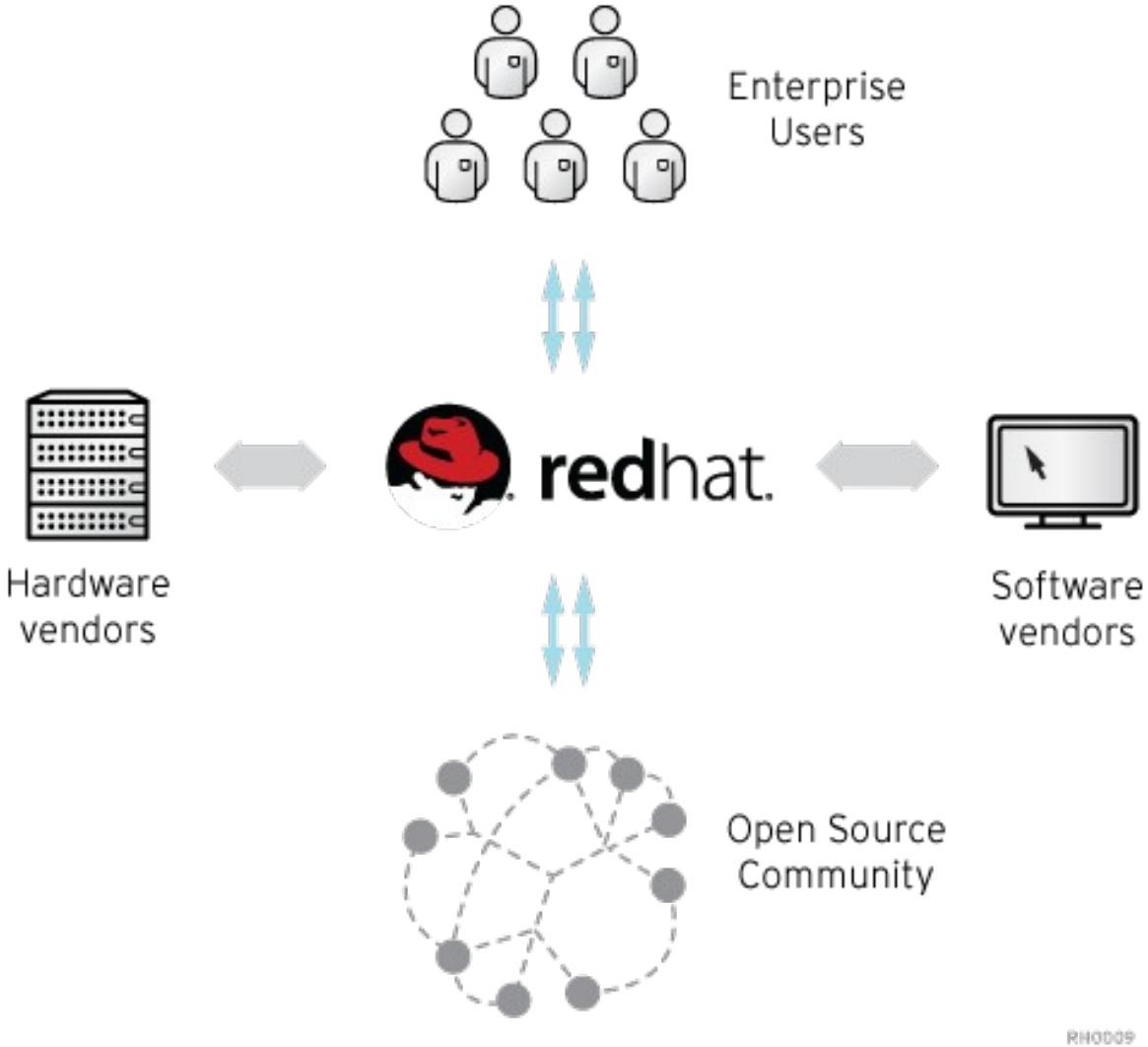
CLOUD | MIDDLEWARE | OPERATING SYSTEM

VIRTUALIZATION | STORAGE

RED HAT leads through open innovation

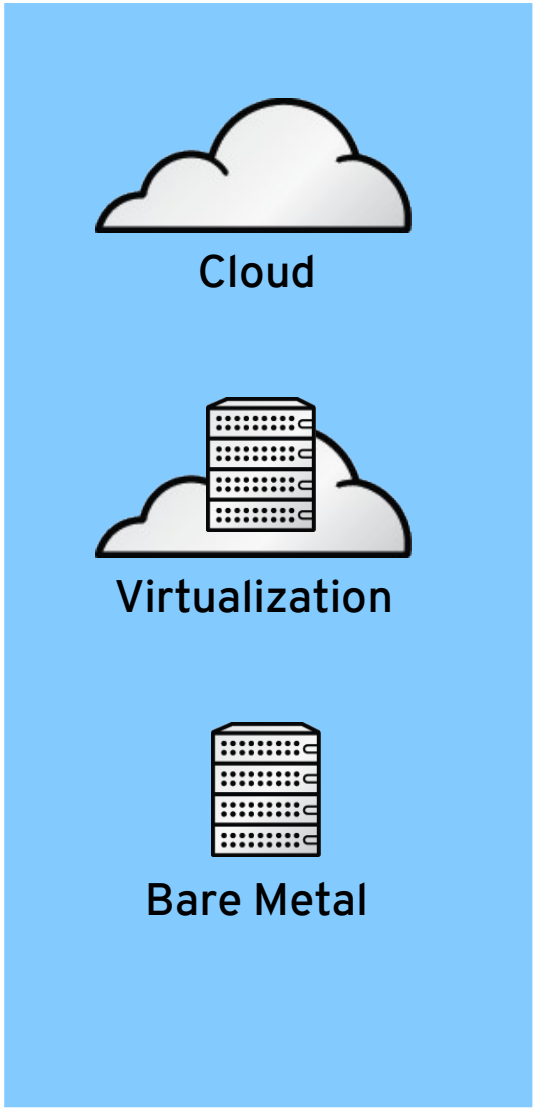


The RED HAT Way



A CLOUD PROVIDES AN ABSTRACTION LAYER TO MANAGE SCALE AND COMPLEXITY

- Self Service
- Abstracted, elastic resources
- Location Independent Storage & Services
- User, Groups
- Accounting
- API's, Tools
- Federation



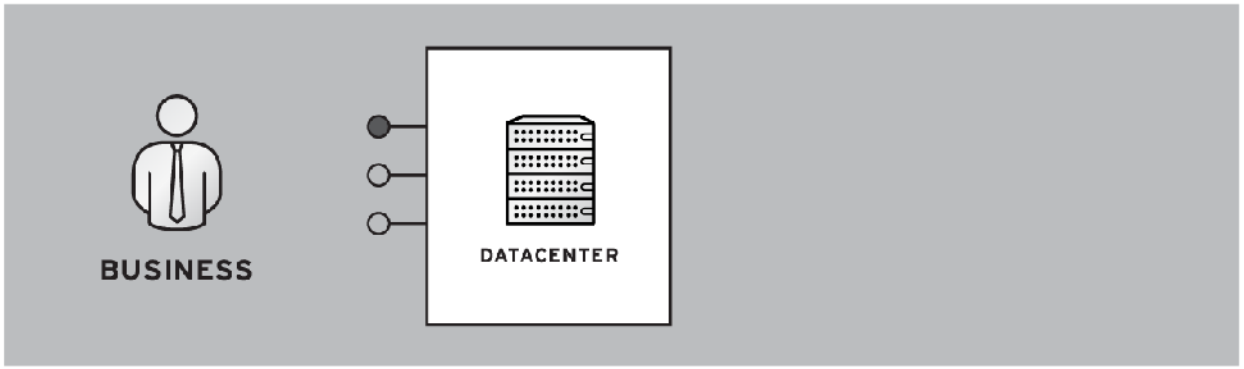
Resource Abstraction
Second abstraction maps cloud to virtual resources

Hardware Abstraction
First maps virtual to physical resources

Full Access
No abstraction

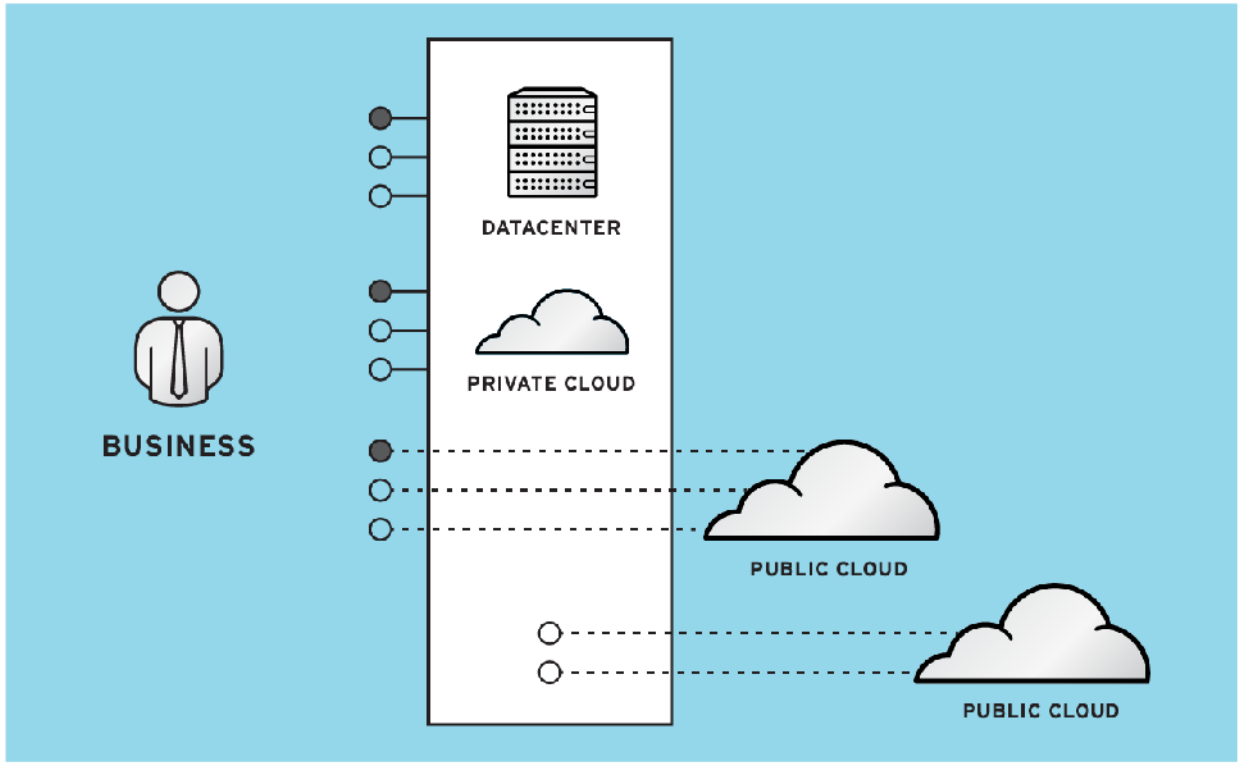
THE ROLE OF IT IS CHANGING

From service provider to strategic partner



TRADITIONAL IT

- IT providing services on traditional infrastructure



HYBRID IT

IT is:

- providing services on traditional infrastructure
- providing services on private cloud
- brokering services from public clouds
- consuming services from public clouds

CLOUD DEPLOYMENT MODEL COMPARISON

- Quickly deploy
- Not as secure
- Externally controlled

- Best of both worlds
- Select environment per project
- IT mananged

- Slower to deploy
- Very secure
- Internally controlled

I.T. NEEDS ARE SHIFTING

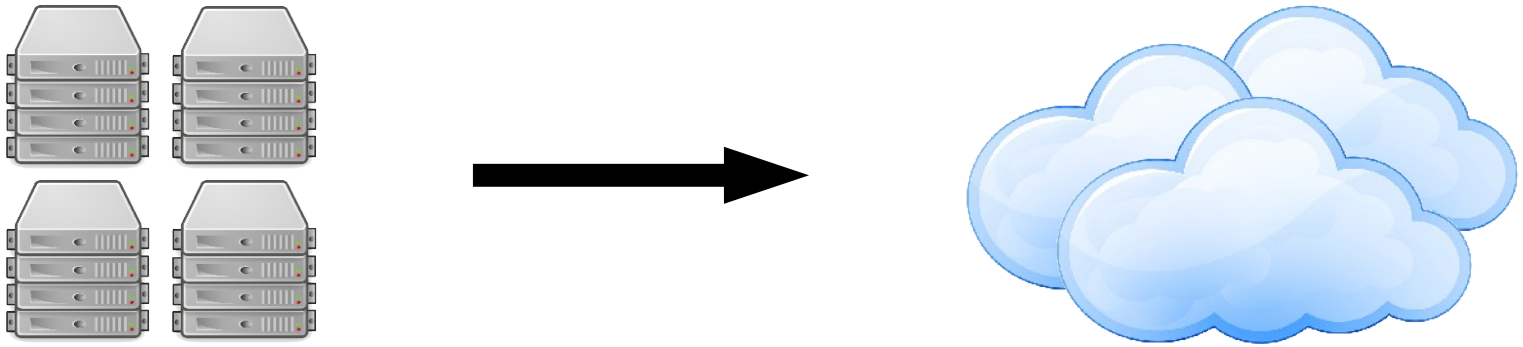
VIRTUALIZATION INFRASTRUCTURES

- Greater server utilization
- Less server sprawl
- Minimize space & power
- Higher staff productivity
- Business continuity
- Fault tolerance and high availability
- Extended service levels
- Lifecycle management
- CapEx budgeting

CLOUD INFRASTRUCTURES

- Self-service
- Automated provisioning
- Chargeback and quotas
- Workload portability
- Disposable resources
- Heterogeneous management
- OpEx budgeting

WORKLOADS ARE EVOLVING

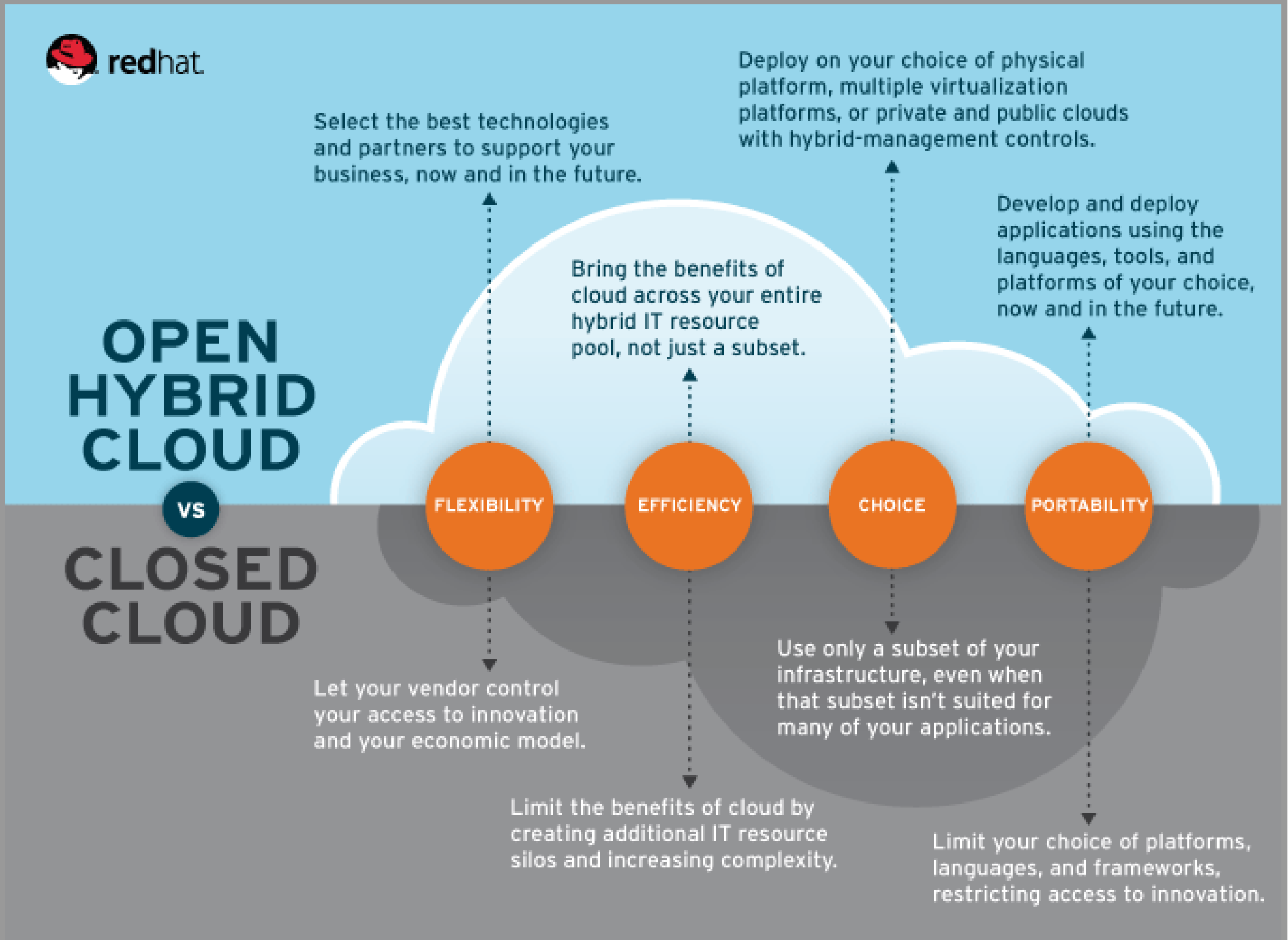


TRADITIONAL WORKLOADS

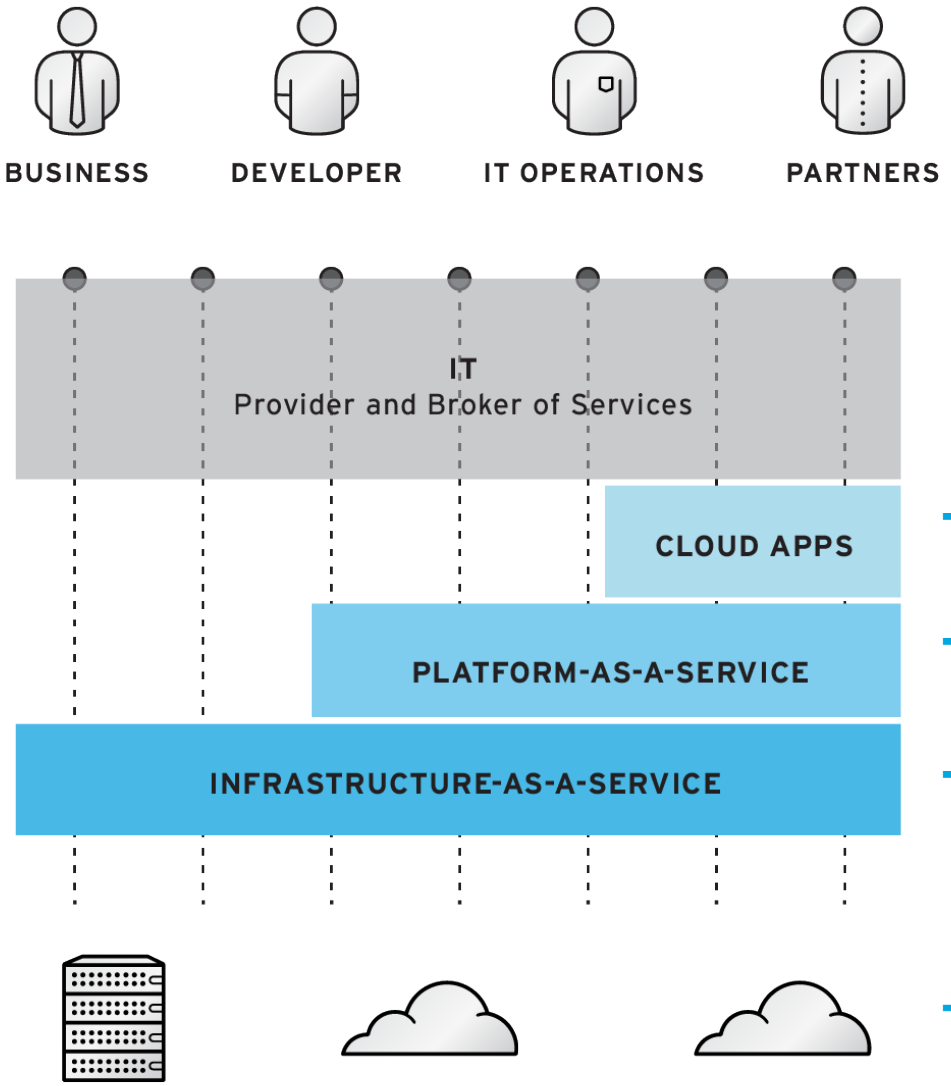
- Stateful VMs, application = VM
- Big VMs: vCPU, vRAM, storage inside VM
- Application SLA = SLA of VM
- SLA requires enterprise virtualization features to keep VMs highly available
- Lifecycle measured in years
- VMs scale up: add vCPU, vRAM, etc.
- Applications not designed to tolerate failure of VMs

CLOUD WORKLOADS

- Stateless VMs
- Small VMs: vCPU, vRAM, storage separate
- Application SLA <> SLA of any one VM
- SLA requires ability to create and destroy VMs where needed
- Lifecycle measured in hours to months
- Applications scale out: add more VMs
- Applications tolerate failure of VMs


redhat
OPEN HYBRID CLOUD
VS
CLOSED CLOUD
Select the best technologies and partners to support your business, now and in the future.
Deploy on your choice of physical platform, multiple virtualization platforms, or private and public clouds with hybrid-management controls.
Develop and deploy applications using the languages, tools, and platforms of your choice, now and in the future.
Bring the benefits of cloud across your entire hybrid IT resource pool, not just a subset.
FLEXIBILITY
EFFICIENCY
CHOICE
PORTABILITY
Let your vendor control your access to innovation and your economic model.
Use only a subset of your infrastructure, even when that subset isn't suited for many of your applications.
Limit the benefits of cloud by creating additional IT resource silos and increasing complexity.
Limit your choice of platforms, languages, and frameworks, restricting access to innovation.

RED HAT APPROACH TO OPEN HYBRID CLOUD



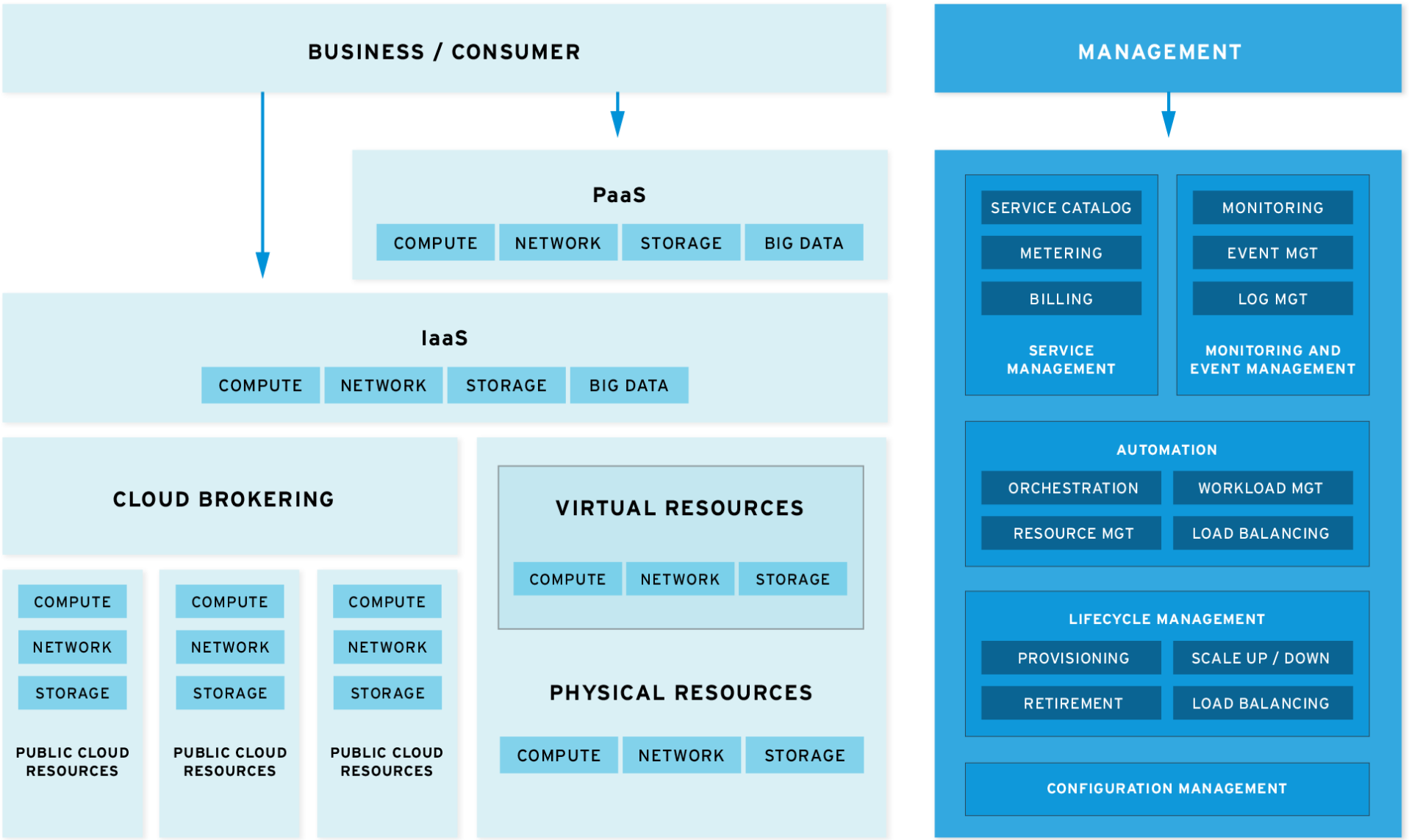
Red Hat Enterprise Linux
Red Hat Storage
Red Hat CloudForms
Red Hat OpenShift

Red Hat OpenShift Enterprise
Red Hat JBoss

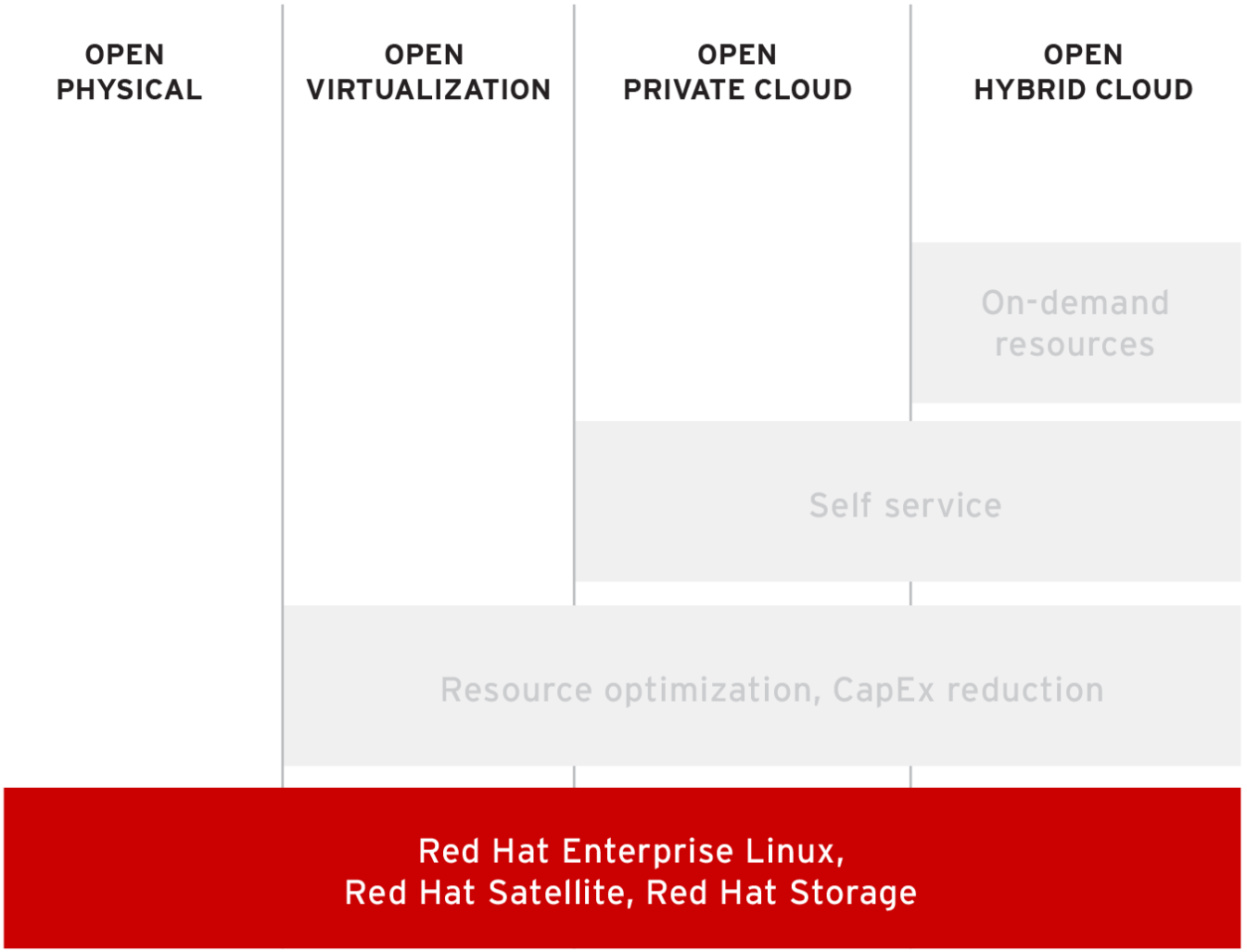
Red Hat CloudForms
Red Hat Storage
Red Hat Enterprise Virtualization
Red Hat Satellite

Red Hat OpenStack
Red Hat Enterprise Linux
Red Hat Update
Red Hat Certified Cloud Provider

NEXT GENERATION I.T. INFRASTRUCTURES



INFRASTRUCTURE-AS-A-SERVICE



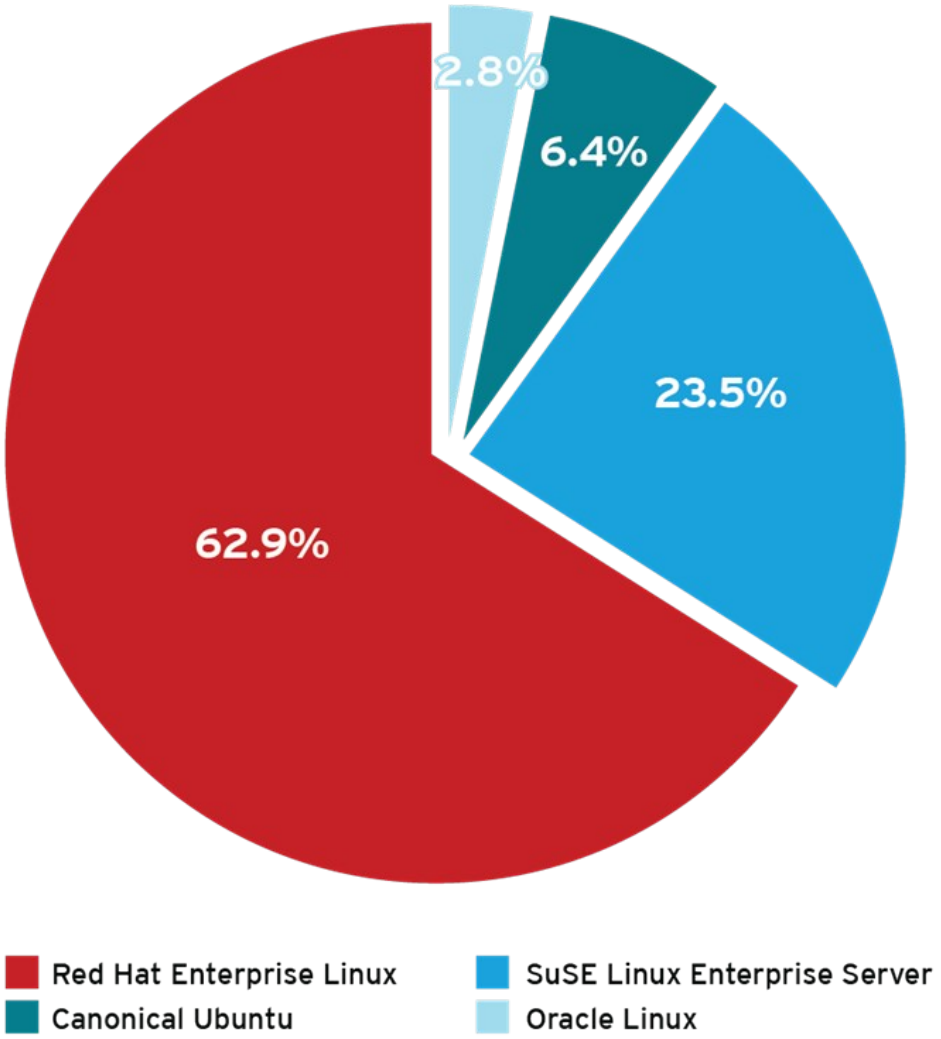
Builds on an industry-leading OS that is certified across physical, virtual, and cloud

Unifies storage across environments

Offers scalable, secure systems management

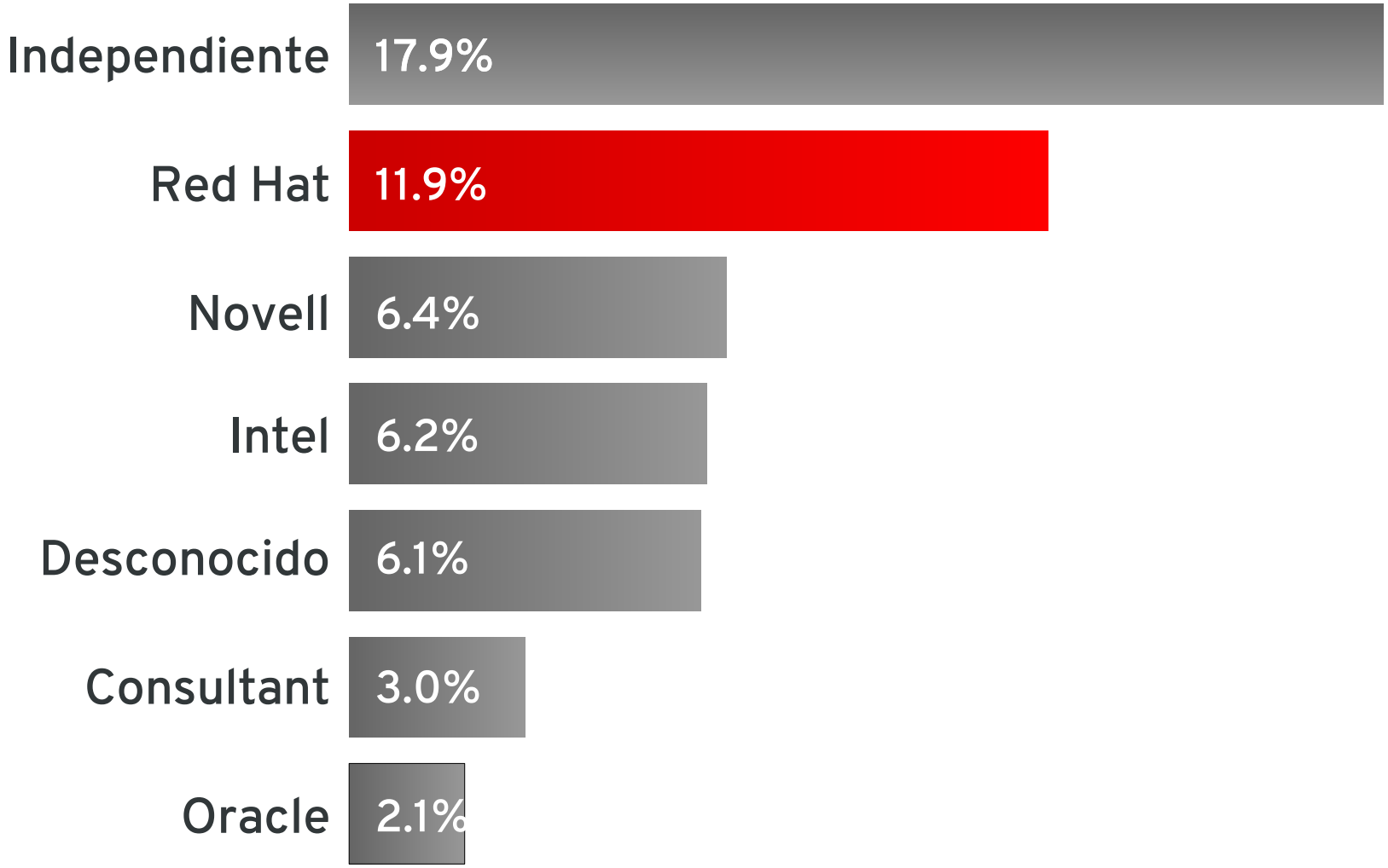
Provides value using a subscription model

RED HAT ENTERPRISE LINUX

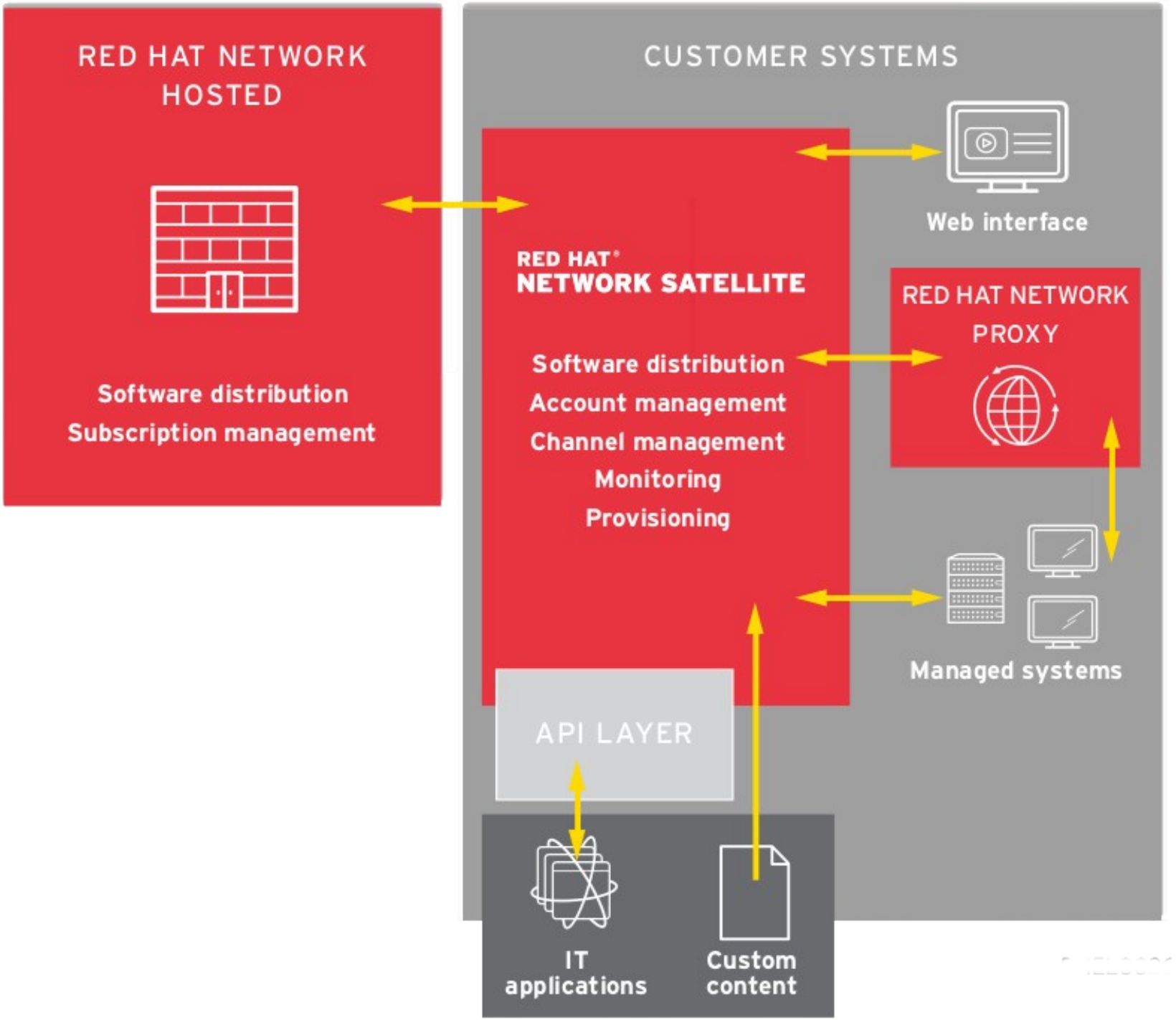


Source: IDC Worldwide Linux Client & Server Operating Environments 2012-2016 Forecast and 2011 Vendor Shares. July 2012 Doc #236064

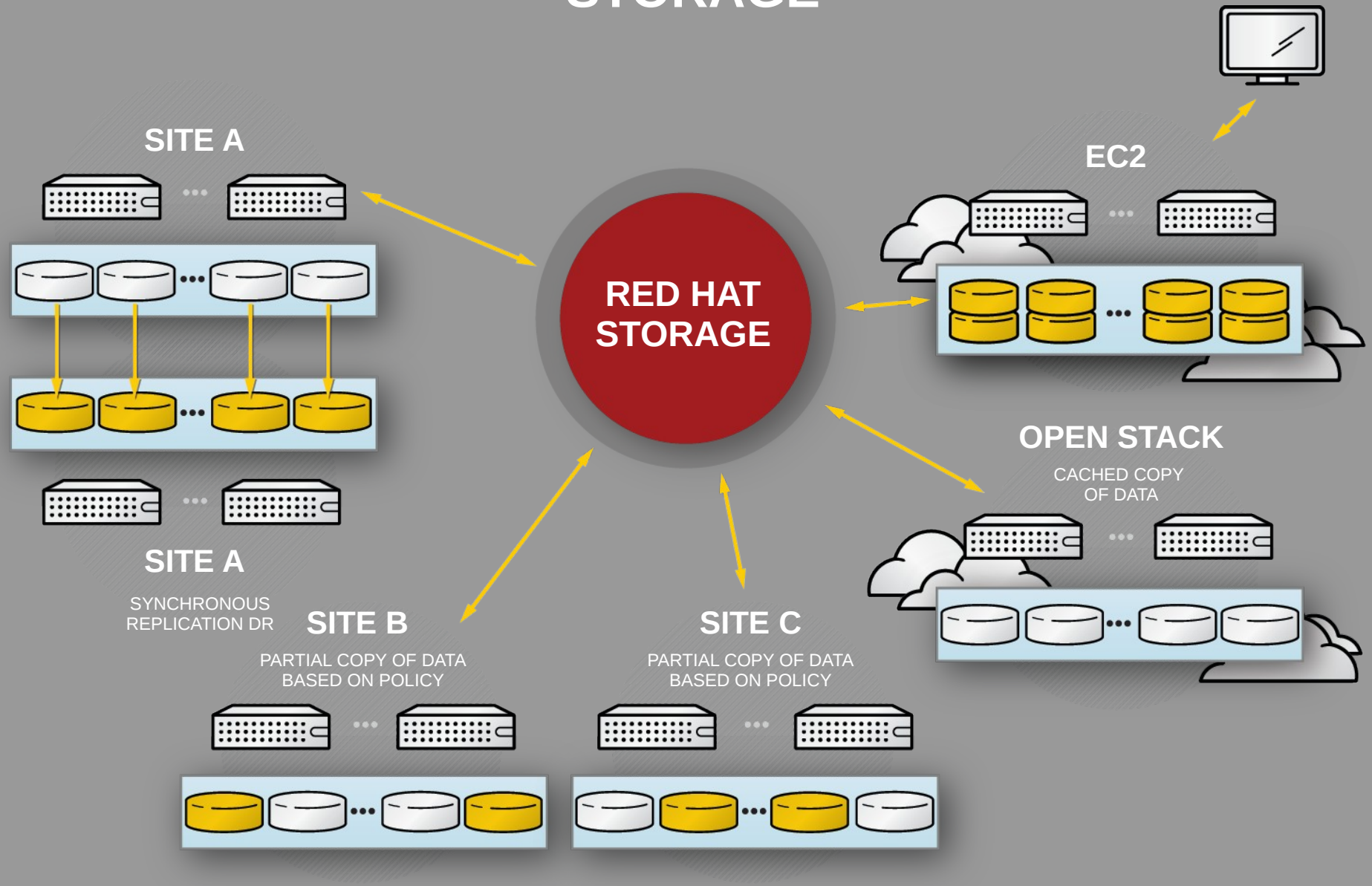
¿QUIÉN HACE EL TRABAJO?



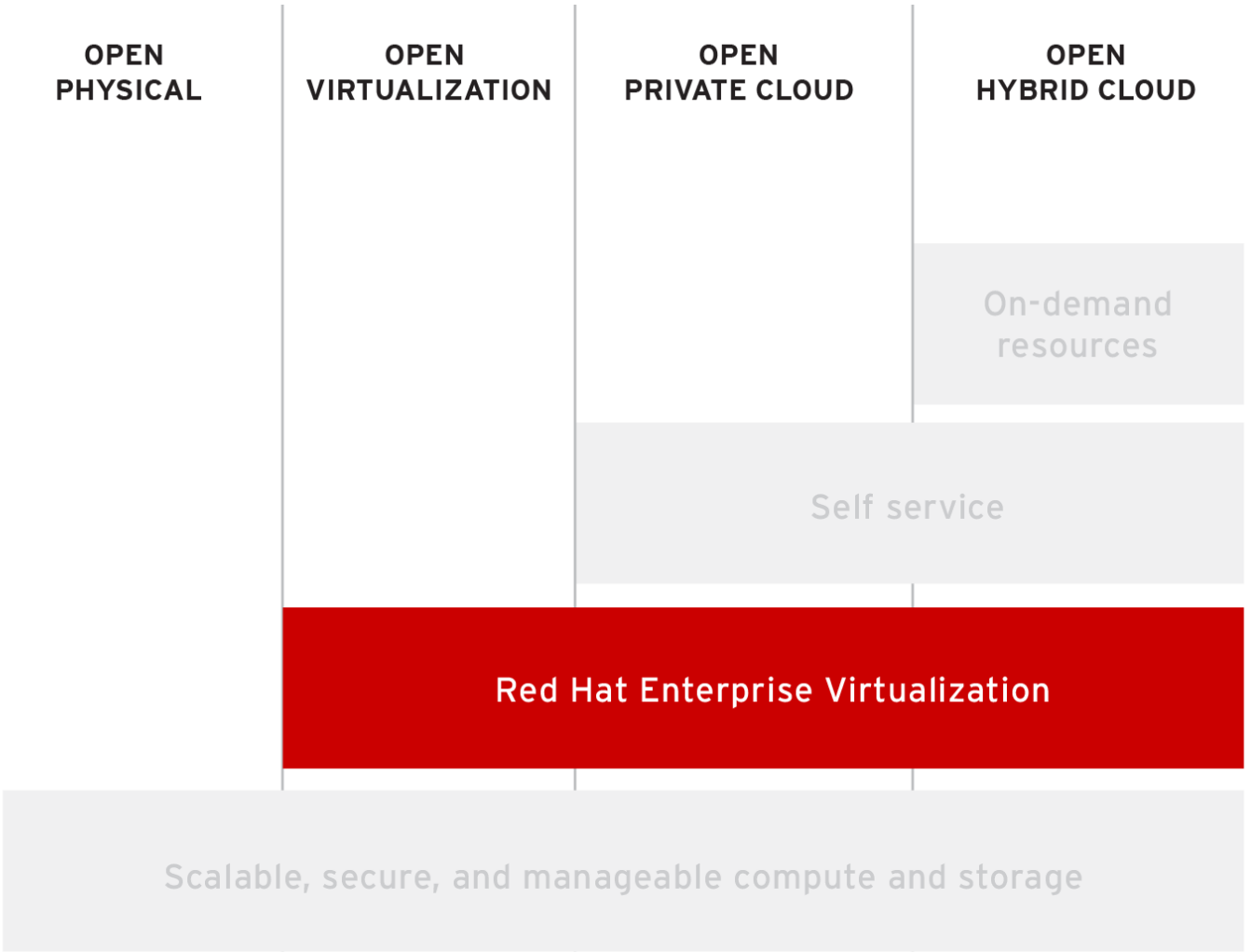
- Fuente: Linux Kernel Development – The Linux Fountation (3/2012)


RED HAT NETWORK HOSTED
Software distribution
Subscription management
CUSTOMER SYSTEMS
Web interface
RED HAT®
NETWORK SATELLITE
Software distribution
Account management
Channel management
Monitoring
Provisioning
RED HAT NETWORK PROXY
Managed systems
API LAYER
IT applications
Custom content

THE POWER OF OPEN SOFTWARE DEFINED STORAGE



INFRASTRUCTURE-AS-A-SERVICE

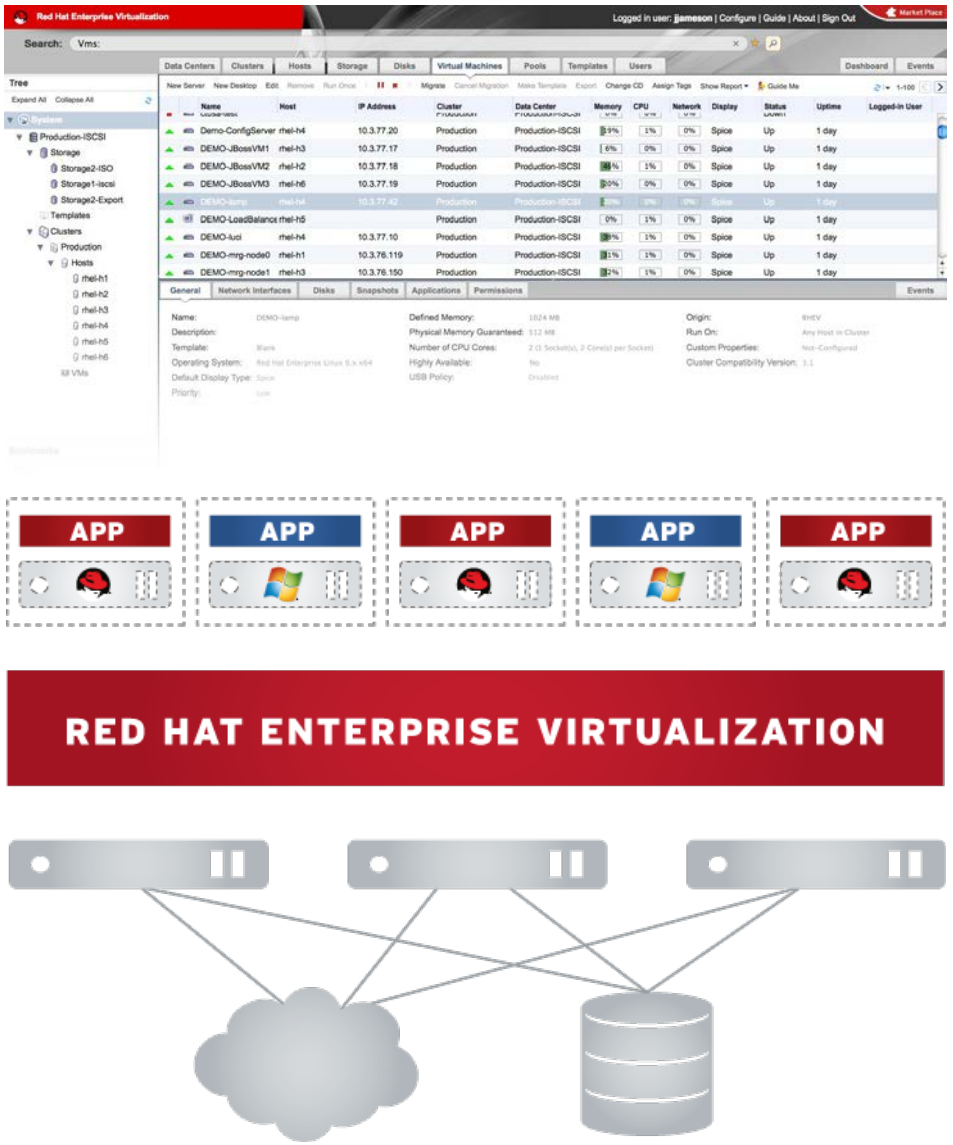


Provides a secure and scalable virtualization platform

Uses existing resources and reduces capital expenditures

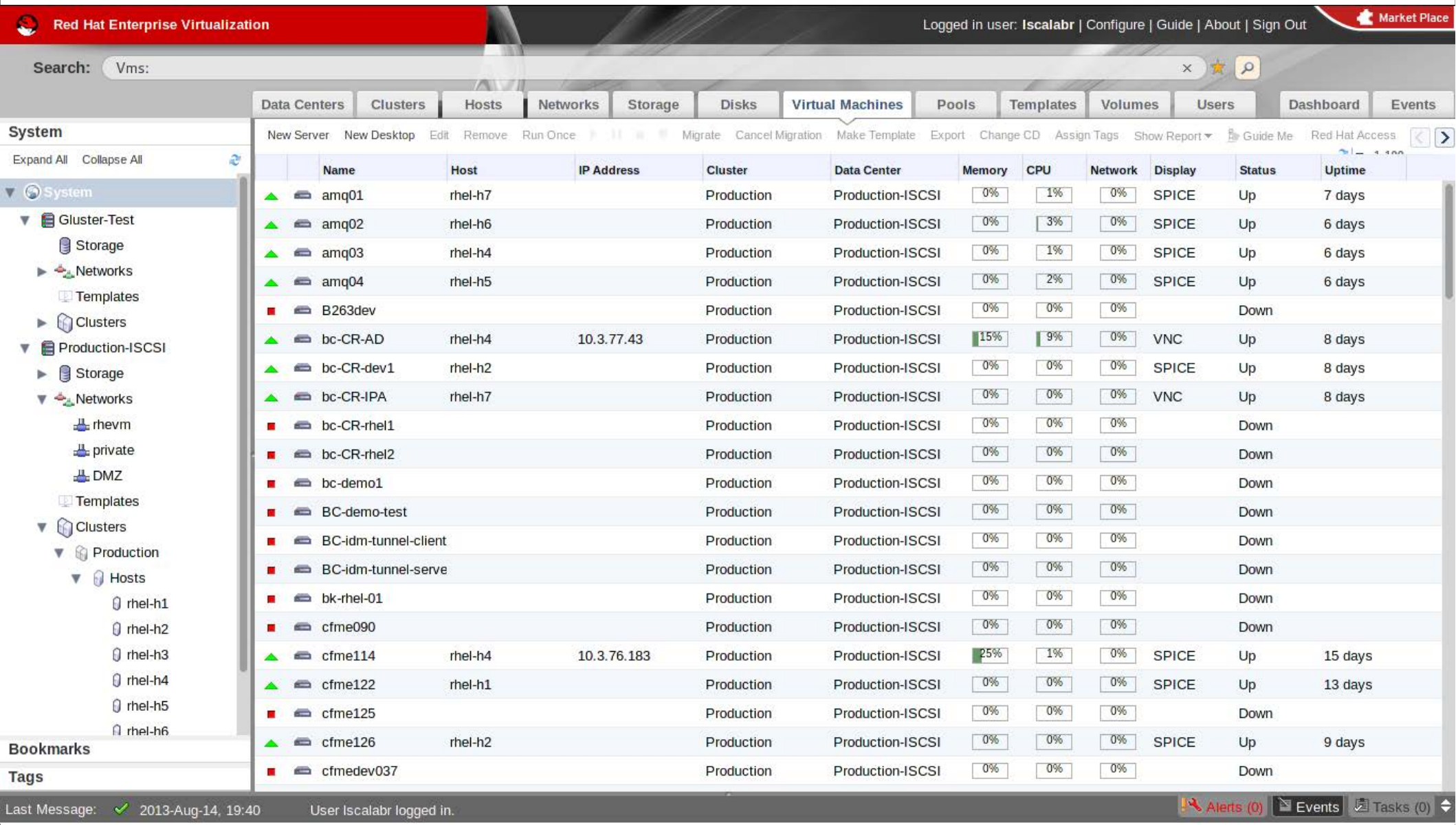
Creates a solid foundation for private cloud

RHEV Manager Features

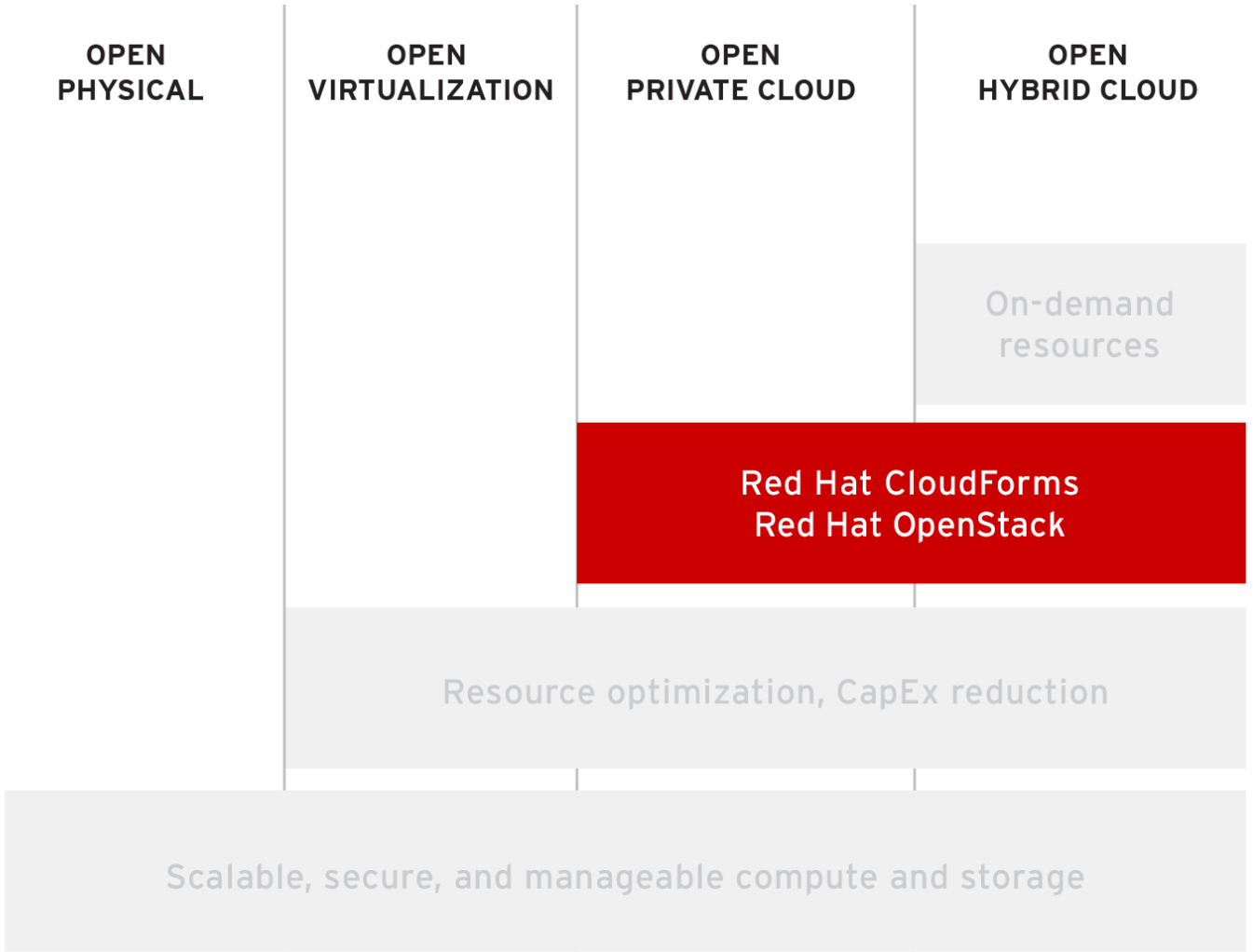


- High availability
- Live migration
- Storage live migration
- Live snapshots
- Load balancing (DRS)
- Power saver (DPM)
- Hot-plug disk and NIC
- Storage on local disk, FC, iSCSI, NFS, Red Hat Storage, IBM GPFS, POSIX or Direct LUN
- Self-service portal with quotas
- Integrated Red Hat Storage management*
- Eco-system marketplace
- Third-party UI plugin support

* Technology preview


Red Hat Enterprise Virtualization
Logged in user: Iscalabr | Configure | Guide | About | Sign Out
Market Place
Search: Vms:
Data Centers
Clusters
Hosts
Networks
Storage
Disks
Virtual Machines
Pools
Templates
Volumes
Users
Dashboard
Events
System
Expand All
Collapse All
System
Gluster-Test
Storage
Networks
Templates
Clusters
Production-ISCSI
Storage
Networks
rhevm
private
DMZ
Templates
Clusters
Production
Hosts
rhel-h1
rhel-h2
rhel-h3
rhel-h4
rhel-h5
rhel-h6
Bookmarks
Tags
New Server
New Desktop
Edit
Remove
Run Once
Migrate
Cancel Migration
Make Template
Export
Change CD
Assign Tags
Show Report
Guide Me
Red Hat Access
Name
Host
IP Address
Cluster
Data Center
Memory
CPU
Network
Display
Status
Uptime
amq01 rhel-h7 Production Production-ISCSI 0% 1% 0% SPICE Up 7 days
amq02 rhel-h6 Production Production-ISCSI 0% 3% 0% SPICE Up 6 days
amq03 rhel-h4 Production Production-ISCSI 0% 1% 0% SPICE Up 6 days
amq04 rhel-h5 Production Production-ISCSI 0% 2% 0% SPICE Up 6 days
B263dev Production Production-ISCSI 0% 0% 0% Down
bc-CR-AD rhel-h4 10.3.77.43 Production Production-ISCSI 15% 9% 0% VNC Up 8 days
bc-CR-dev1 rhel-h2 Production Production-ISCSI 0% 0% 0% SPICE Up 8 days
bc-CR-IPA rhel-h7 Production Production-ISCSI 0% 0% 0% VNC Up 8 days
bc-CR-rhel1 Production Production-ISCSI 0% 0% 0% Down
bc-CR-rhel2 Production Production-ISCSI 0% 0% 0% Down
bc-demo1 Production Production-ISCSI 0% 0% 0% Down
BC-demo-test Production Production-ISCSI 0% 0% 0% Down
BC-idm-tunnel-client Production Production-ISCSI 0% 0% 0% Down
BC-idm-tunnel-serve Production Production-ISCSI 0% 0% 0% Down
bk-rhel-01 Production Production-ISCSI 0% 0% 0% Down
cfme090 Production Production-ISCSI 0% 0% 0% Down
cfme114 rhel-h4 10.3.76.183 Production Production-ISCSI 25% 1% 0% SPICE Up 15 days
cfme122 rhel-h1 Production Production-ISCSI 0% 0% 0% SPICE Up 13 days
cfme125 Production Production-ISCSI 0% 0% 0% Down
cfme126 rhel-h2 Production Production-ISCSI 0% 0% 0% SPICE Up 9 days
cfmedev037 Production Production-ISCSI 0% 0% 0% Down
Last Message: 2013-Aug-14, 19:40 User Iscalabr logged in.
Alerts (0)
Events
Tasks (0)

INFRASTRUCTURE-AS-A-SERVICE



Offers self-service provisioning, deployment, and management

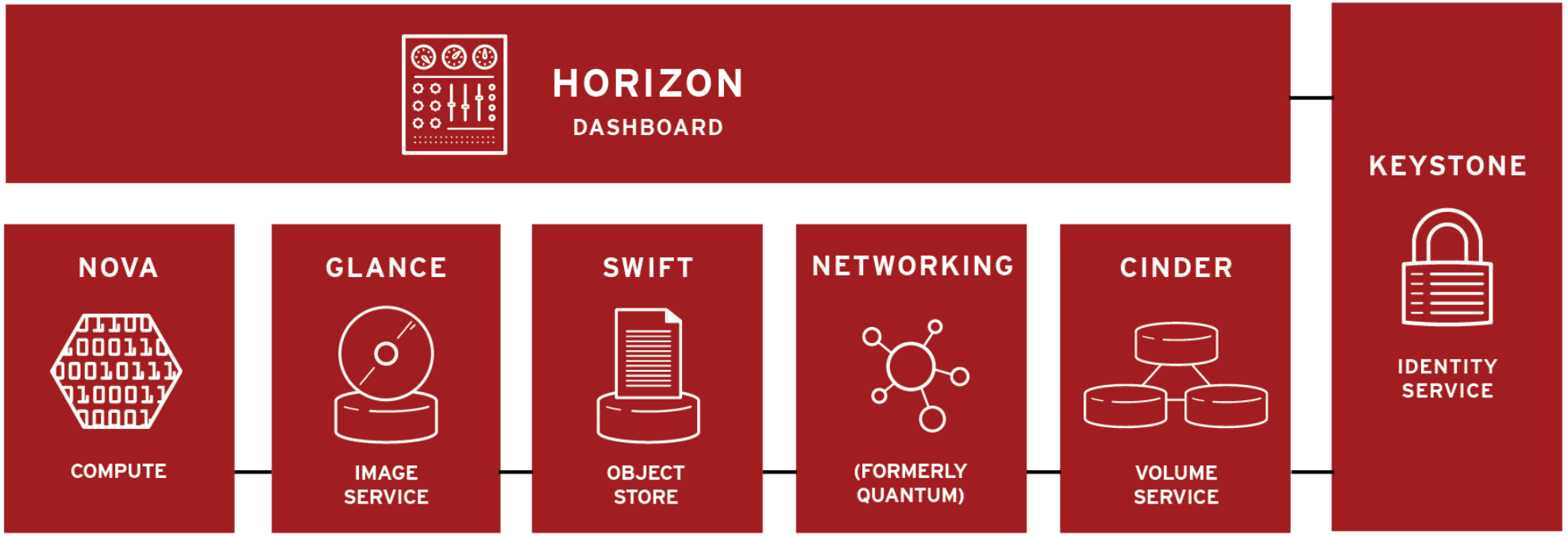
Includes a service catalog with automated provisioning and life cycle management

Uses policy-based resource management

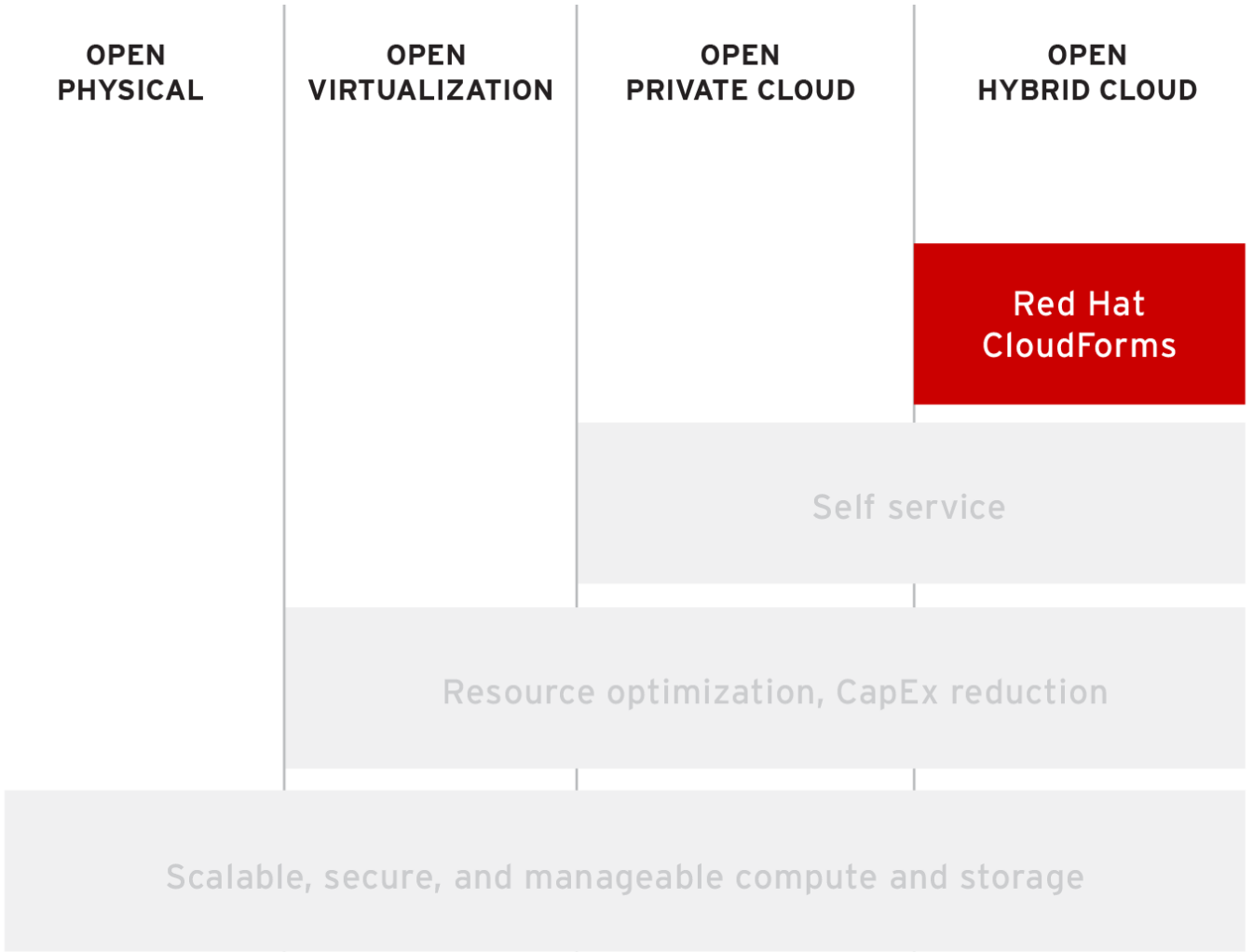
Includes chargeback and metering

RED HAT OPENSTACK
CLOUD INFRASTRUCTURE FOR CLOUD-ENABLED WORKLOADS

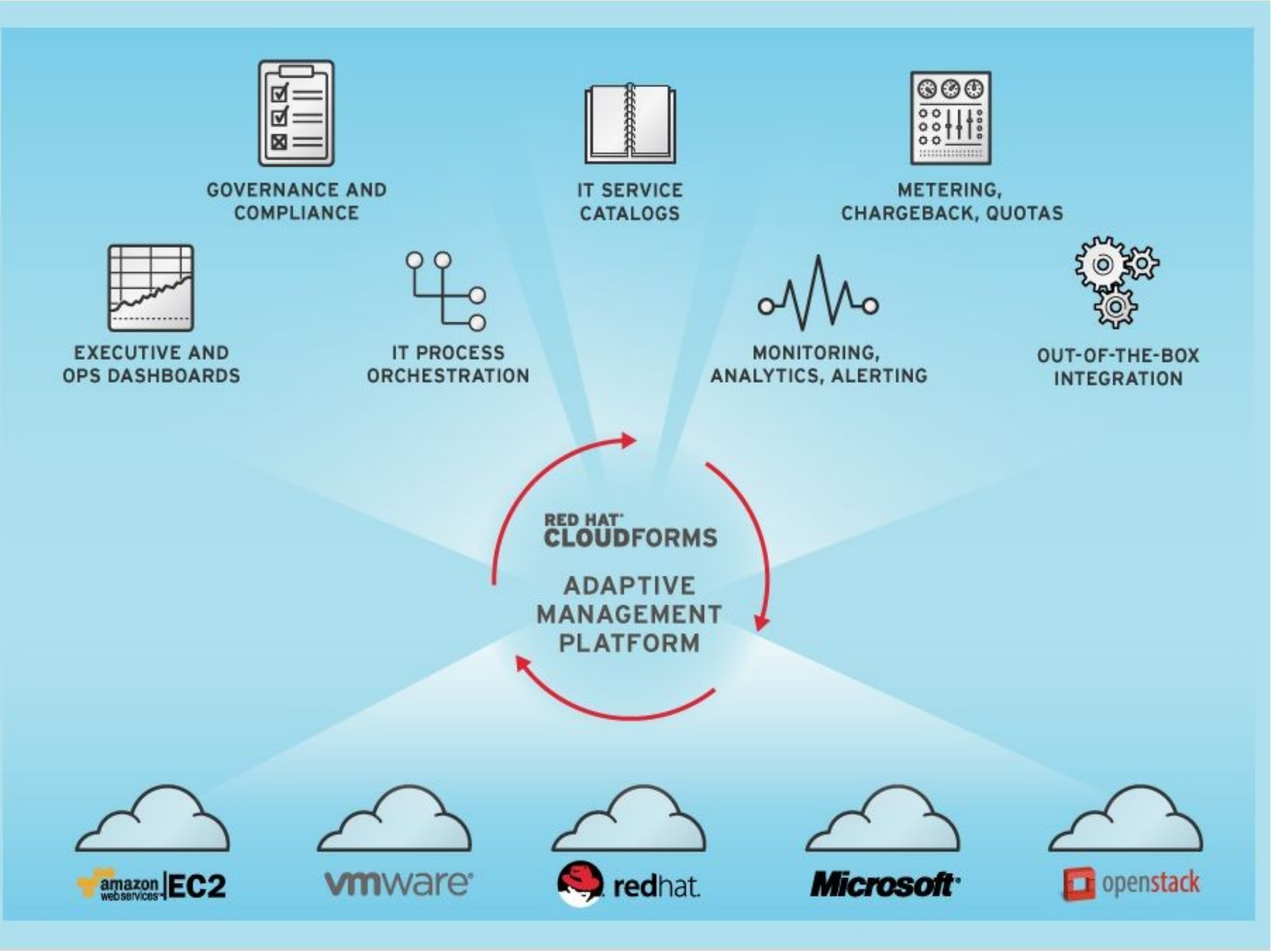
- Modular architecture
- Designed to easily scale out
- Based on (growing) set of core services



INFRASTRUCTURE-AS-A-SERVICE



- Unifies management
- Allows cloud brokering, bursting
- Provides workload portability
- Includes self-service options
- Offers many certified public cloud provider options


GOVERNANCE AND COMPLIANCE
IT SERVICE CATALOGS
METERING, CHARGEBACK, QUOTAS
EXECUTIVE AND OPS DASHBOARDS
IT PROCESS ORCHESTRATION
MONITORING, ANALYTICS, ALERTING
OUT-OF-THE-BOX INTEGRATION
RED HAT CLOUDFORMS
ADAPTIVE MANAGEMENT PLATFORM
amazon web services EC2
vmware
redhat
Microsoft
openstack

RED HAT CLOUDFORMS
MANAGEMENT ENGINE

redhat.

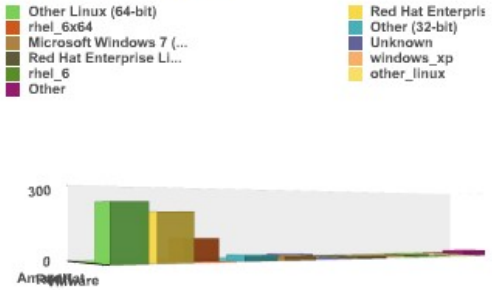
Virtual Intelligence | Services | Infrastructure | Control | Automate | Optimize

Administrator | EVM

Dashboard | Reports | Usage | Chargeback | Timelines | RSS

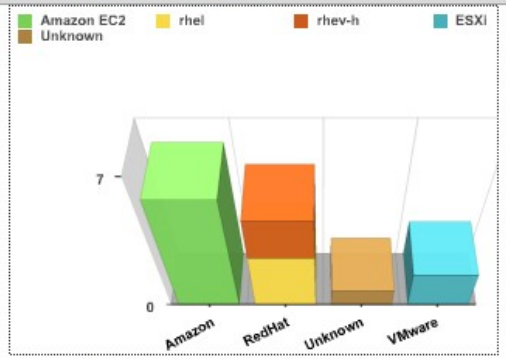
Default Dashboard

Vendor and Guest OS Chart



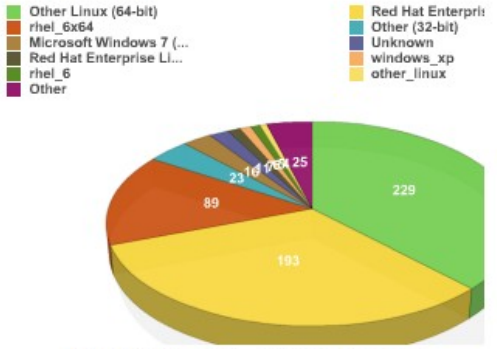
Updated 08/13/13 21:00 | Next 08/14/13 21:00

Virtual Infrastructure Platforms



Updated 08/13/13 21:00 | Next 08/14/13 21:00

Guest OS Information



Updated 08/13/13 21:01 | Next 08/14/13 21:00

EVM: Recently Discovered Hosts

host2, hostname: 10.96.16.12, running RedHat VMM
Date : 2013-07-11 00:52:05 -0300

host1, hostname: 10.96.16.14, running RedHat VMM
Date : 2013-07-11 00:52:02 -0300

clyde.salab.eze.redhat.com, hostname: 10.96.18.3, running RedHat VMM
Date : 2013-05-13 19:48:46 -0300

Windows2008host, hostname: ad.salab.eze.redhat.com, running Unknown VMM
Date : 2013-04-26 00:34:55 -0300

qeblade28.rhq.lab.eng.bos.redhat.com, hostname: qeblade28.rhq.lab.eng.bos.redhat.com, running VMware VMM
Date : 2013-04-17 12:11:21 -0300

Updated 08/14/13 19:00 | Next 08/14/13 20:00

Top CPU Consumers (hourly)

VM Name	CPU Usage	Allocated vCPUs
ramesh-test-vm-dnd	78.8%	4
vsphere-connection-srvr-dnd	61.9%	1
community-cfme-520.16	60.8%	2
aziza-ssl-520-16	44.3%	2
community-cfme-520.12	42.7%	2
rlandy-cfme-5.2.0.16	33.1%	2
dajo-cfme-510.12-2	20.3%	2
dajo-cfme-510.12-1	20.0%	2
community-cfme-510.10	12.5%	2
qe-prod-rhevm-donotdelete	10.6%	8

Updated 08/14/13 00:00 | Next 08/15/13 00:00

EVM: Recently Discovered VMs

pages-clean - location unknown
Date : 2013-08-14 17:27:54 -0300

pages-clean - location unknown
Date : 2013-08-14 17:09:44 -0300

shv_cfme_520_16_dnd on Host qeblade28.rhq.lab.eng.bos.redhat.com
Date : 2013-08-14 15:33:09 -0300

pages-clean - location unknown
Date : 2013-08-14 12:57:42 -0300

pages-clean - location unknown
Date : 2013-08-14 12:39:51 -0300

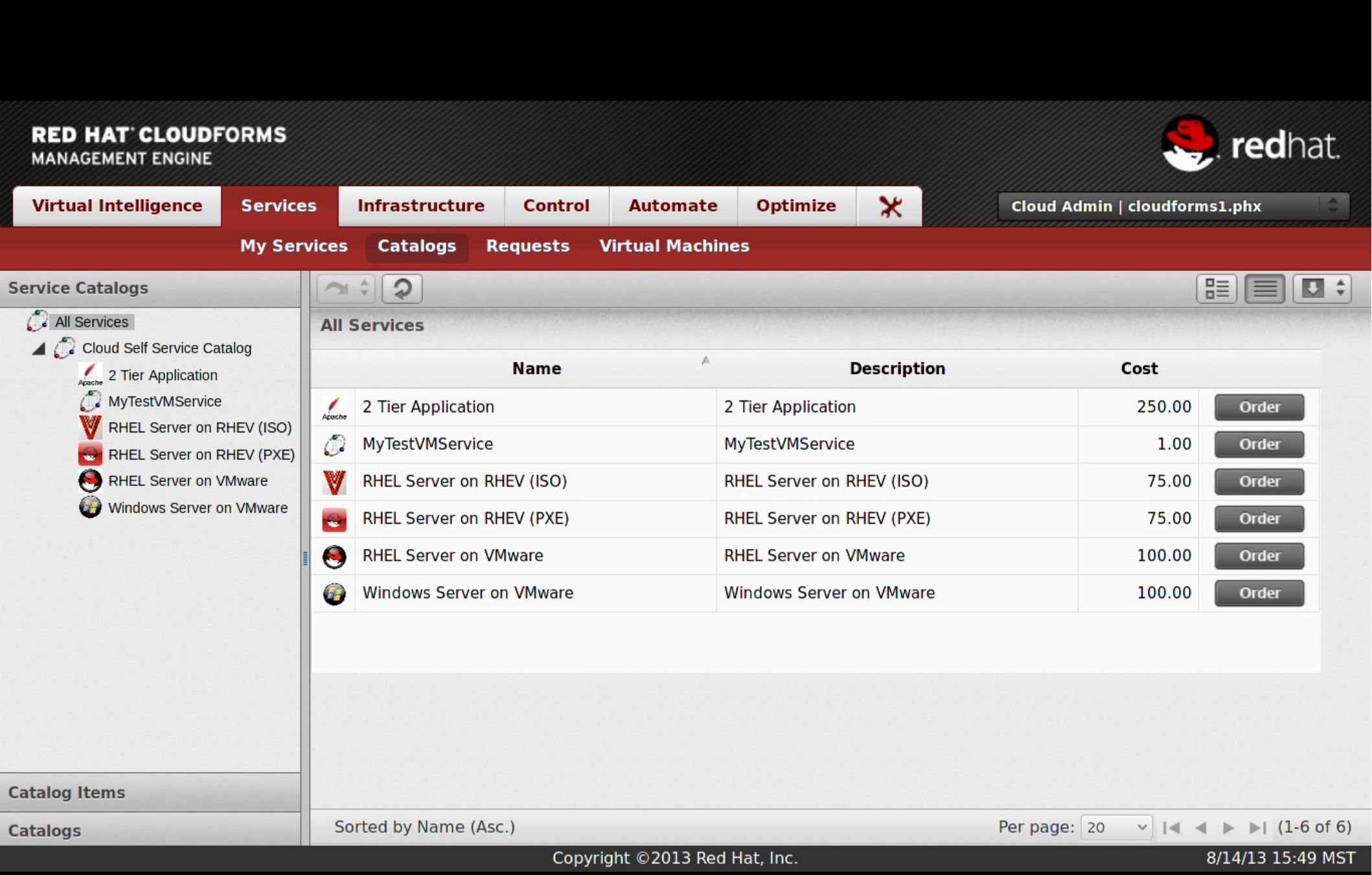
Updated 08/14/13 19:00 | Next 08/14/13 20:00

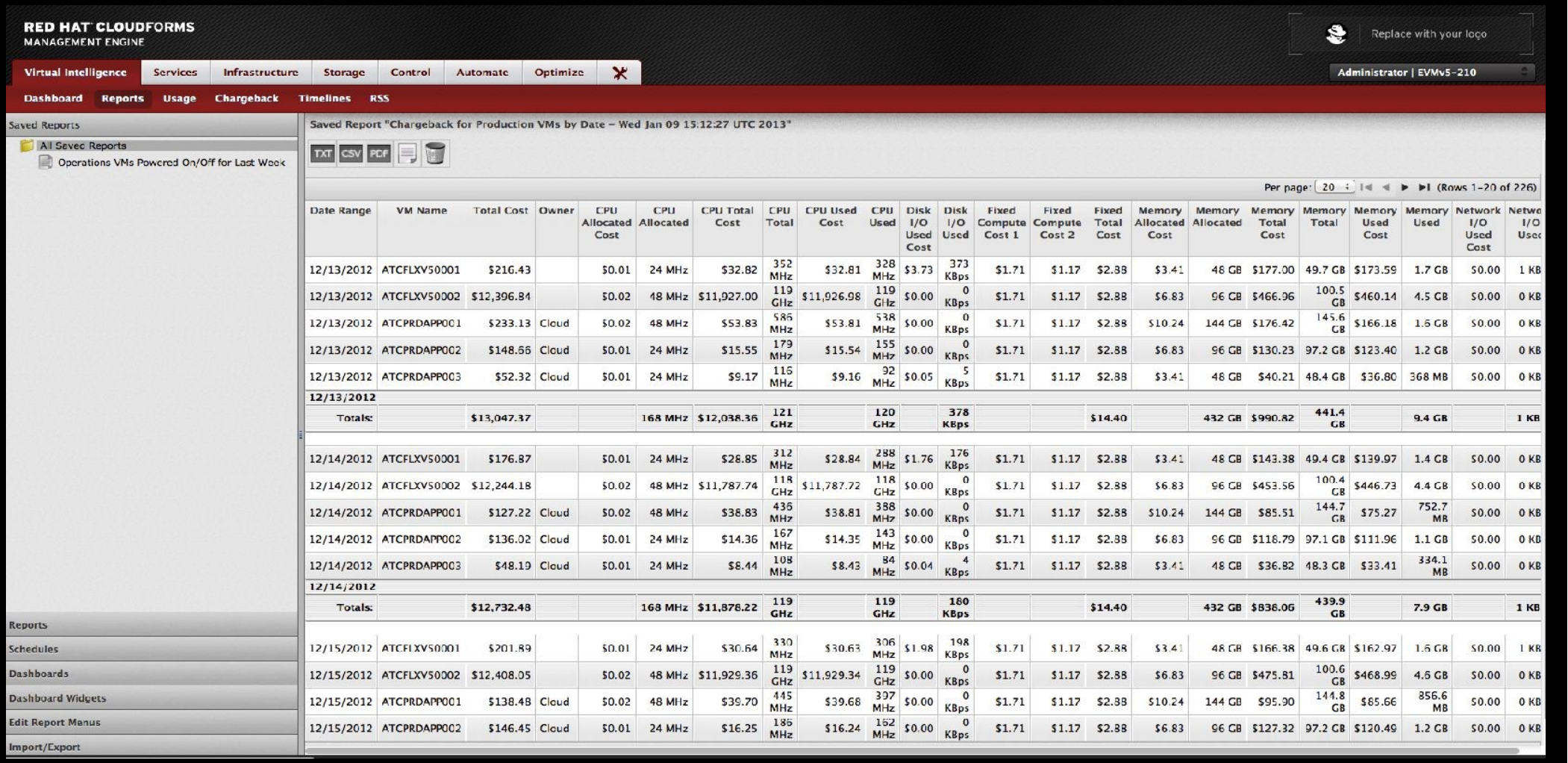
Top Memory Consumers (last hour)

Top Storage Consumers

Name	Cluster Name	Host Name

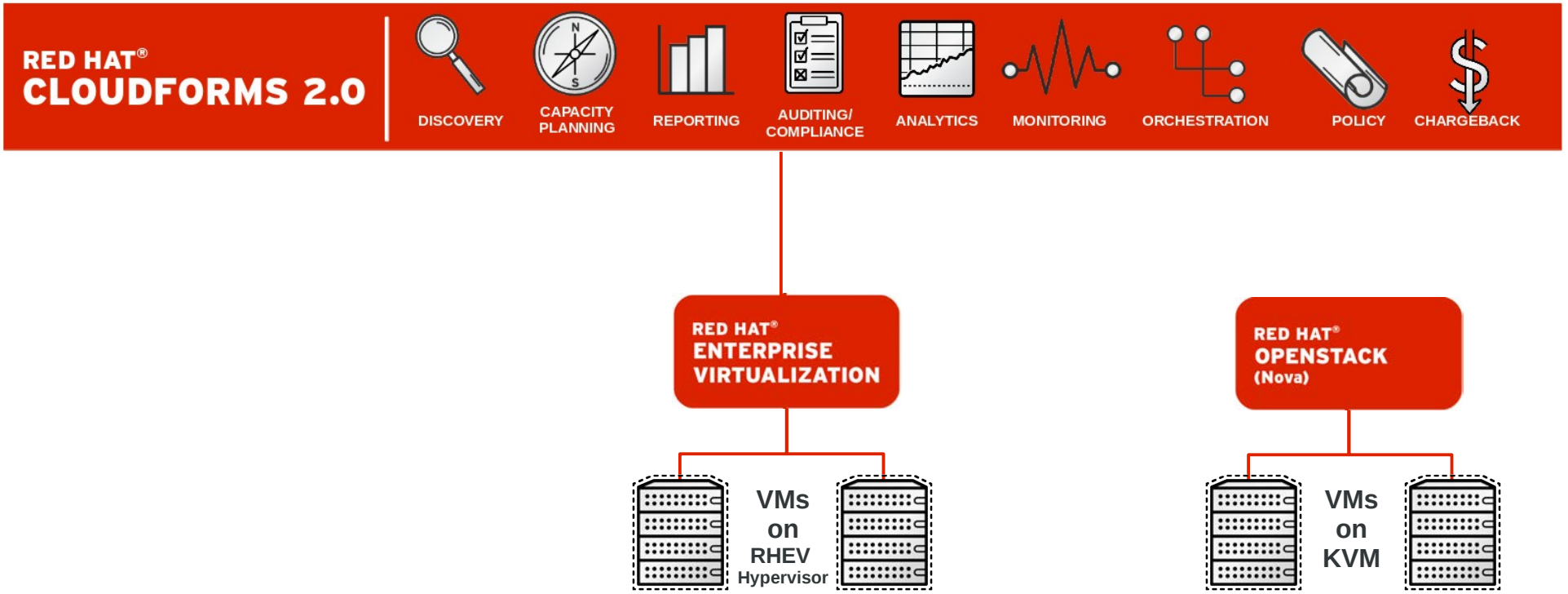
8/14/13 19:43 ART


RED HAT CLOUDFORMS
MANAGEMENT ENGINE
redhat.
Virtual Intelligence
Services
Infrastructure
Control
Automate
Optimize
Cloud Admin | cloudforms1.phx
My Services
Catalogs
Requests
Virtual Machines
Service Catalogs
All Services
Cloud Self Service Catalog
2 Tier Application
MyTestVMService
RHEL Server on RHEV (ISO)
RHEL Server on RHEV (PXE)
RHEL Server on VMware
Windows Server on VMware
Catalog Items
Catalogs
All Services
Name
Description
Cost
2 Tier Application
2 Tier Application
250.00
Order
MyTestVMService
MyTestVMService
1.00
Order
RHEL Server on RHEV (ISO)
RHEL Server on RHEV (ISO)
75.00
Order
RHEL Server on RHEV (PXE)
RHEL Server on RHEV (PXE)
75.00
Order
RHEL Server on VMware
RHEL Server on VMware
100.00
Order
Windows Server on VMware
Windows Server on VMware
100.00
Order
Sorted by Name (Asc.)
Per page: 20
(1-6 of 6)
Copyright ©2013 Red Hat, Inc.
8/14/13 15:49 MST



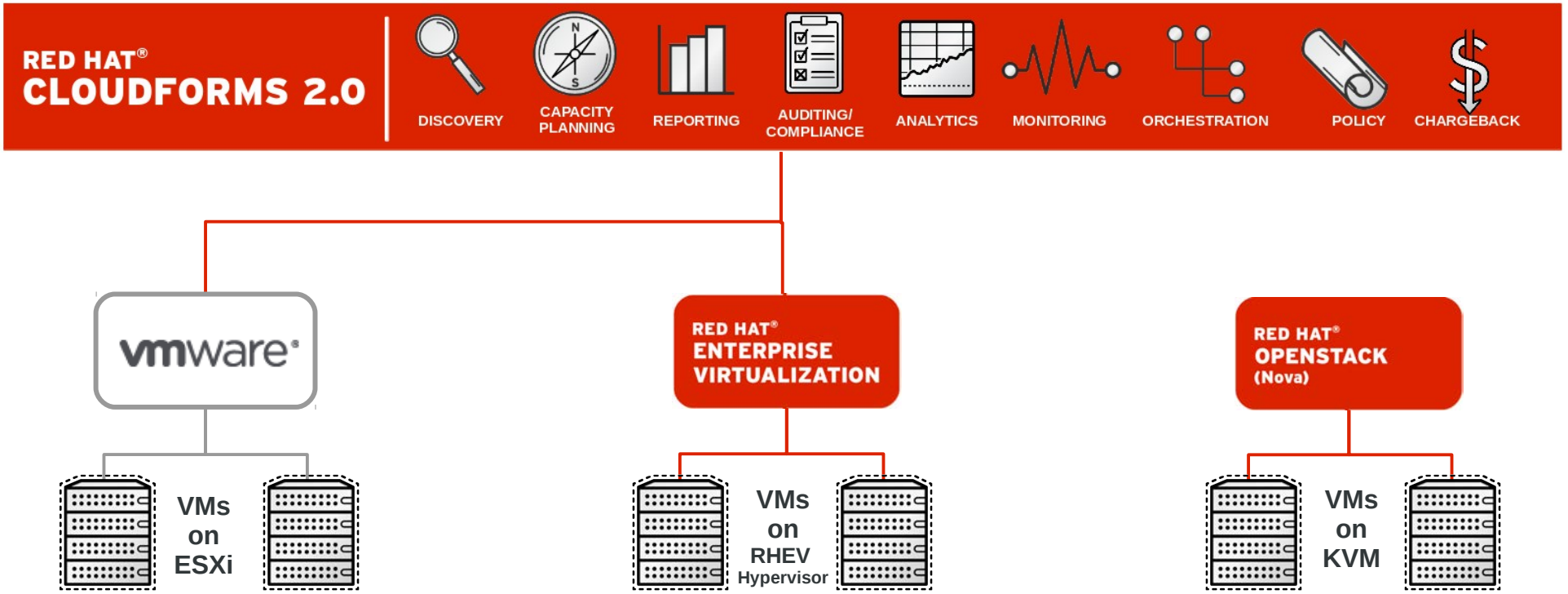
Date Range	VM Name	Total Cost	Owner	CPU Allocated Cost	CPU Allocated	CPU Total Cost	CPU Total	CPU Used Cost	CPU Used	Disk I/O Used Cost	Disk I/O Used	Fixed Compute Cost 1	Fixed Compute Cost 2	Fixed Total Cost	Memory Allocated Cost	Memory Allocated	Memory Total Cost	Memory Total	Memory Used Cost	Memory Used	Network I/O Used Cost	Netwo I/O Used
12/13/2012	ATCFLXV50001	$216.43		$0.01	24 MHz	$32.82	352 MHz	$32.81	328 MHz	$3.73	373 KBps	$1.71	$1.17	$2.88	$3.41	48 GB	$177.00	49.7 GB	$173.59	1.7 GB	$0.00	1 KB
12/13/2012	ATCFLXV50002	$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	$0.00	0 KB
12/13/2012	ATCPRDAPP001	$233.13	Cloud	$0.02	48 MHz	$53.83	586 MHz	$53.81	538 MHz	$0.00	0 KBps	$1.71	$1.17	$2.88	$10.24	144 GB	$176.42	145.6 GB	$166.18	1.6 GB	$0.00	0 KB
12/13/2012	ATCPRDAPP002	$148.56	Cloud	$0.01	24 MHz	$15.55	179 MHz	$15.54	155 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	$0.00	0 KB
12/13/2012	ATCPRDAPP003	$52.32	Cloud	$0.01	24 MHz	$9.17	116 MHz	$9.16	92 MHz	$0.05	5 KBps	$1.71	$1.17	$2.88	$3.41	48 GB	$40.21	48.4 GB	$36.80	368 MB	$0.00	0 KB
12/13/2012																						
Totals:		**$13,047.37**			**168 MHz**	**$12,038.36**	**121 GHz**		**120 GHz**		**378 KBps**			**$14.40**		**432 GB**	**$990.82**	**441.4 GB**		**9.4 GB**		**1 KB**
12/14/2012	ATCFLXV50001	$176.87		$0.01	24 MHz	$28.85	312 MHz	$28.84	288 MHz	$1.76	176 KBps	$1.71	$1.17	$2.88	$3.41	48 GB	$143.38	49.4 GB	$139.97	1.4 GB	$0.00	0 KB
12/14/2012	ATCFLXV50002	$12,244.18		$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	$0.00	0 KB
12/14/2012	ATCPRDAPP001	$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	$10.24	144 GB	$85.51	144.7 GB	$75.27	752.7 MB	$0.00	0 KB
12/14/2012	ATCPRDAPP002	$136.02	Cloud	$0.01	24 MHz	$14.36	167 MHz	$14.35	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	$0.00	0 KB
12/14/2012	ATCPRDAPP003	$48.19	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	$0.00	0 KB
12/14/2012																						
Totals:		**$12,732.48**			**168 MHz**	**$11,878.22**	**119 GHz**		**119 GHz**		**180 KBps**			**$14.40**		**432 GB**	**$836.06**	**439.9 GB**		**7.9 GB**		**1 KB**
12/15/2012	ATCFLXV50001	$201.89		$0.01	24 MHz	$30.64	330 MHz	$30.63	306 MHz	$1.98	198 KBps	$1.71	$1.17	$2.88	$3.41	48 GB	$166.38	49.6 GB	$162.97	1.6 GB	$0.00	1 KB
12/15/2012	ATCFLXV50002	$12,408.05		$0.02	48 MHz	$11,929.36	119 GHz	$11,929.34	119 GHz	$0.00	0 KBps	$1.71	$1.17	$2.88	$6.83	96 GB	$475.81	100.6 GB	$468.99	4.6 GB	$0.00	0 KB
12/15/2012	ATCPRDAPP001	$138.48	Cloud	$0.02	48 MHz	$39.70	445 MHz	$39.68	397 MHz	$0.00	0 KBps	$1.71	$1.17	$2.88	$10.24	144 GB	$95.90	144.8 GB	$85.66	856.6 MB	$0.00	0 KB
12/15/2012	ATCPRDAPP002	$146.45	Cloud	$0.01	24 MHz	$16.25	186 MHz	$16.24	152 MHz	$0.00	0 KBps	$1.71	$1.17	$2.88	$6.83	96 GB	$127.32	97.2 GB	$120.49	1.2 GB	$0.00	0 KB

RED HAT CLOUD INFRASTRUCTURE DELIVERS VALUE TODAY



CREATE AN OPEN HYBRID CLOUD

CLOUDFORMS ADDS HETEROGENEOUS CAPACITY



VISION FOR AN OPEN HYBRID CLOUD BY RED HAT

FUTURE ROADMAP

1

vmware

VMs on ESXi

RED HAT® ENTERPRISE VIRTUALIZATION

VMs on RHEV Hypervisor

RED HAT® OPENSTACK (Nova)

2

VMs on RHEV Hypervisor

3 Shared Services based on OpenStack

RED HAT® OPENSTACK (Glance and Cinder)

RED HAT® OPENSTACK (Quantum)

RED HAT® OPENSTACK (Keystone)

¿CUAL ES EL PRÓXIMO PASO?

- Acérquese a nuestro stand!
- Visite nuestro web site

  http://www.redhat.com/cloud

Gracias!

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