redhat.

Red Hat CloudForms

An evolutionary path to an Open Hybrid Cloud

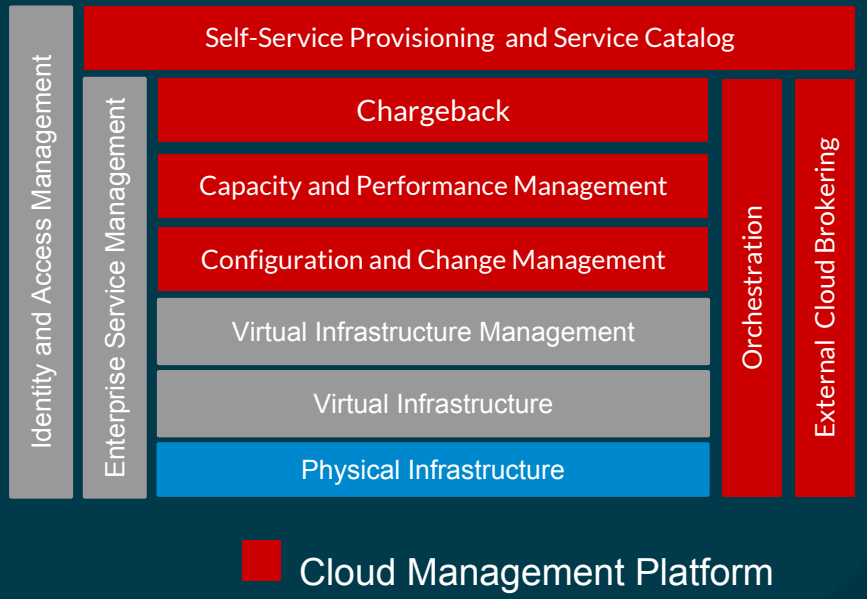
Christian Jung
EMEA Technical Specialist CloudForms
jung@redhat.com
24.01.2017

Definition Cloud Management Platform

Gartner defined a Cloud Management Platform as

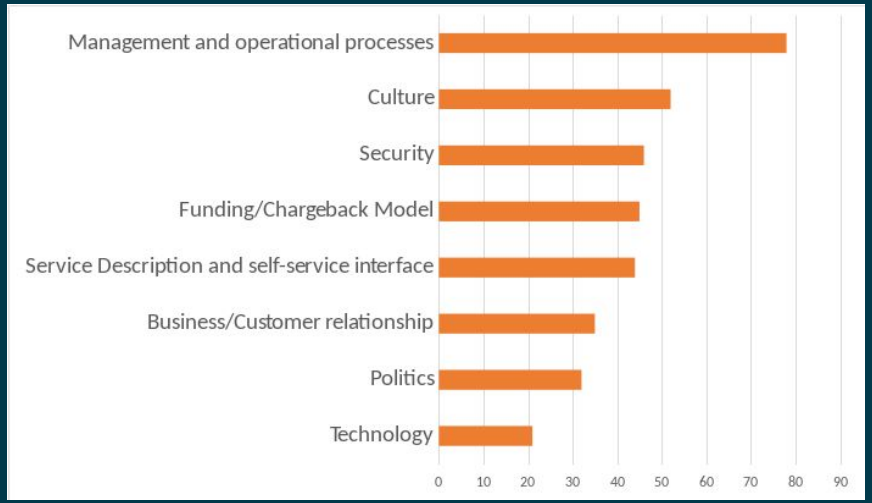
“integrated products that provide for the management of public, private and hybrid cloud environments. The minimum requirements to be included in this category are products that incorporate self-service interfaces, provision system images, enable metering and billing, and provide for some degree of workload optimization through established policies. “

http://www.gartner.com/it-glossary/cloud-management-platforms/



Private Cloud Computing Challenges

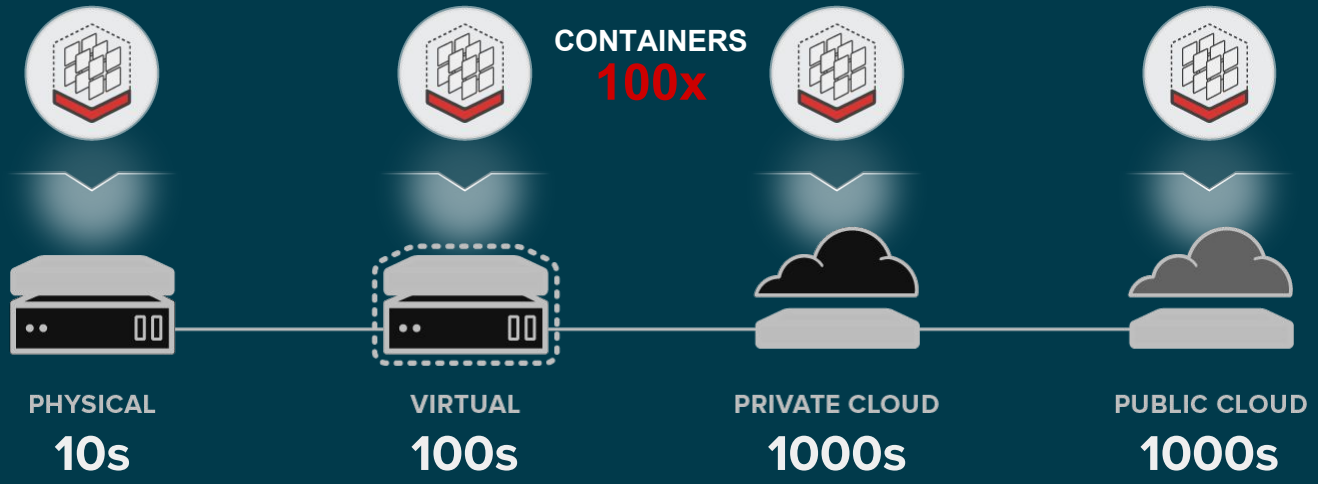
- Management and Processes rated #1
- Technology rated last
- Culture and Politics big blockers



Source: Gartner

I.T. on the path to hybrid environments

Complexity is going through the roof



SOFTWARE-DEFINED NETWORKING

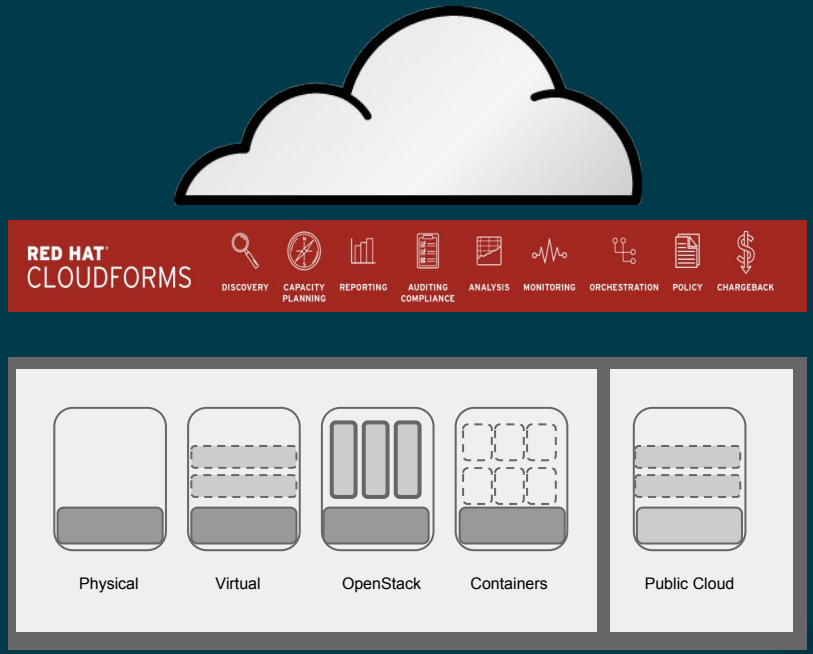
SOFTWARE-DEFINED STORAGE


Why do I need a
Cloud Management Platform?
redhat.

Build Private IaaS

Deliver IT resources as Infrastructure as a Service

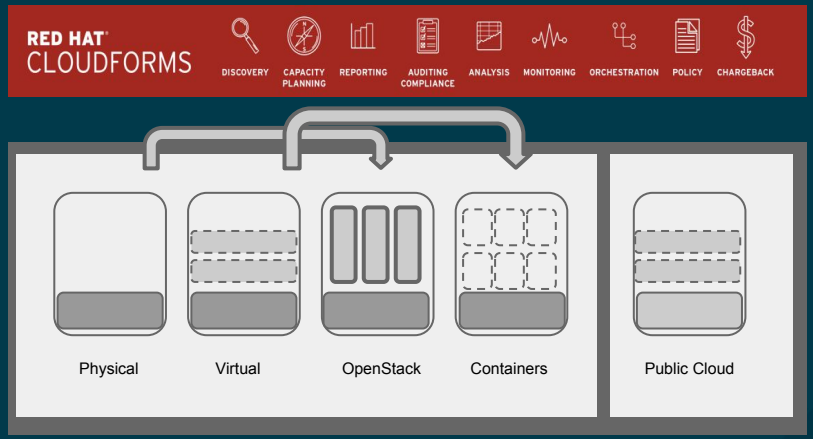
- Remove cause for Shadow IT
- Self Service Portal
- Use VMware, OpenStack, Hyper-V, RHEV where appropriate, but hide complexity
- Multi-Tenancy, Chargeback, Reporting



I.T. Modernization

Management across source and target technologies offers an incremental migration path

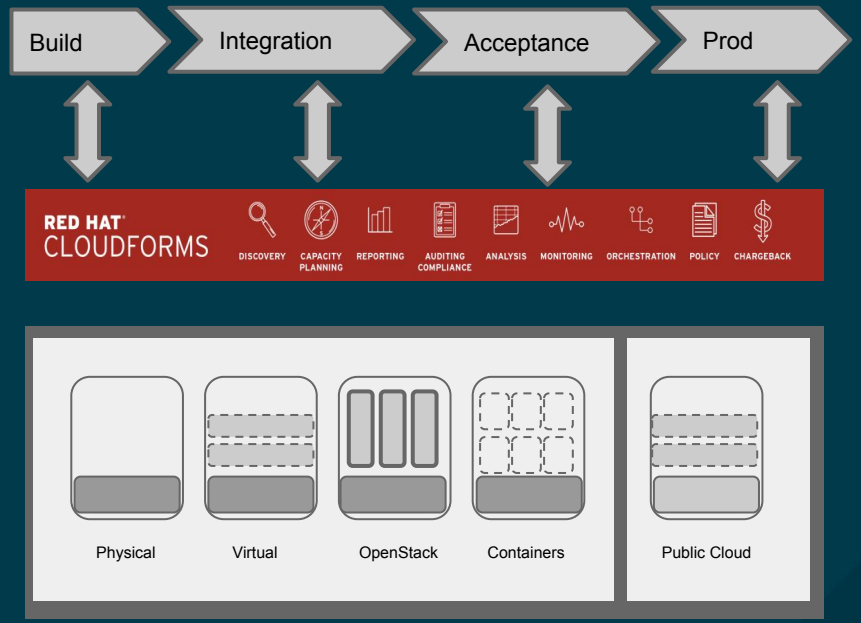
- V2V Migration
  - Legacy to Modern Hypervisor
  - Private to Public Cloud
- Right Sizing
- Transition to new Cloud Technologies



DevOps and Agile I.T.

Use Continuous Integration Tools to Deploy Workloads and Services

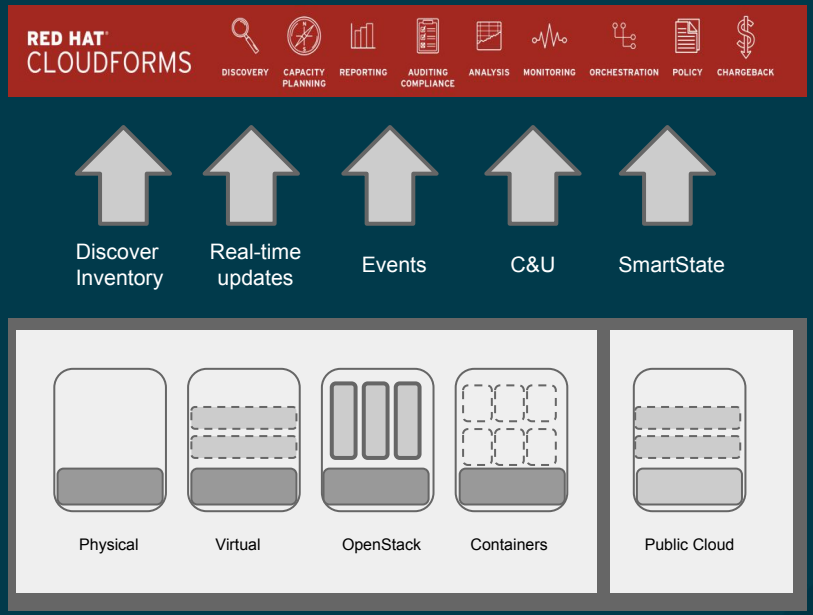
- Provision and retire test setups
- Drive consistency between different lifecycle stages
- Automated tests ensure Compliance and Governance



Governance and Compliance

Normalize Compliance Checks across different Technologies

- Define Compliance checks for Hosts, Virtual Machines, Cloud Instances and Containers
- Enforce Compliance by triggering Alerts and Actions
- Drift Analysis allows comparison with previous states

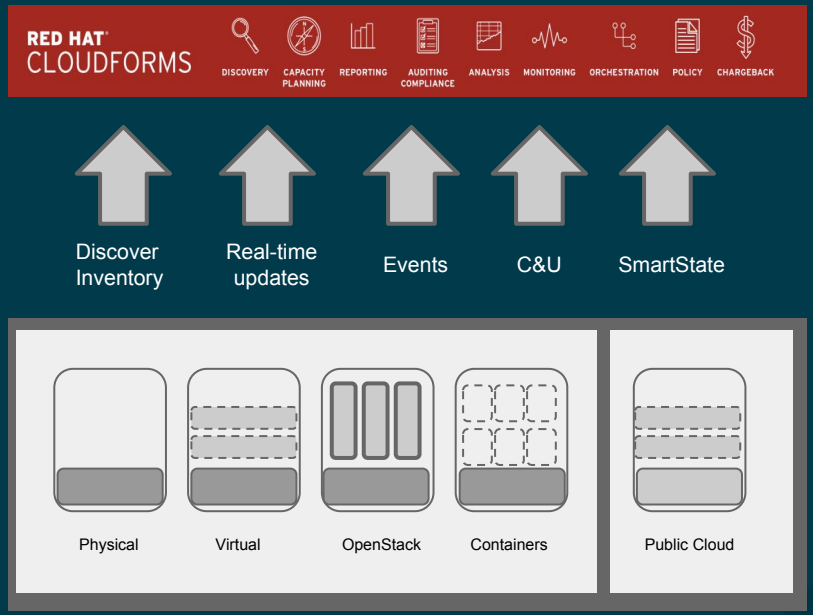



Why Red Hat CloudForms?
redhat.

Discovery and Inventory

Discovers existing infrastructure and provide unified UI

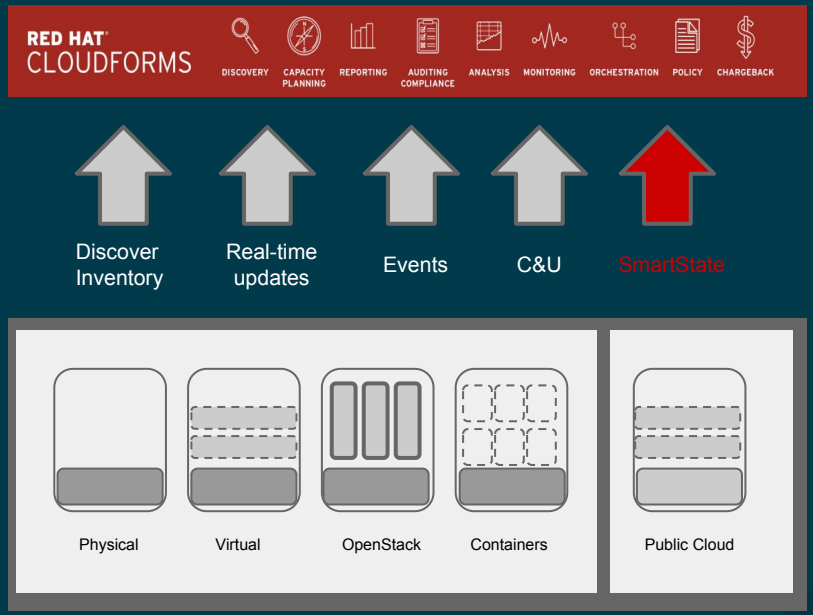
- Discover existing infrastructure and workloads
- Reports and Dashboards provide unified visibility and abstract underlying providers
- Chargeback and Capacity & Utilization allow cost control and planning information



Smart State Analysis

Forensic introspection of contents of VMs, instances, hosts, data stores and containers.

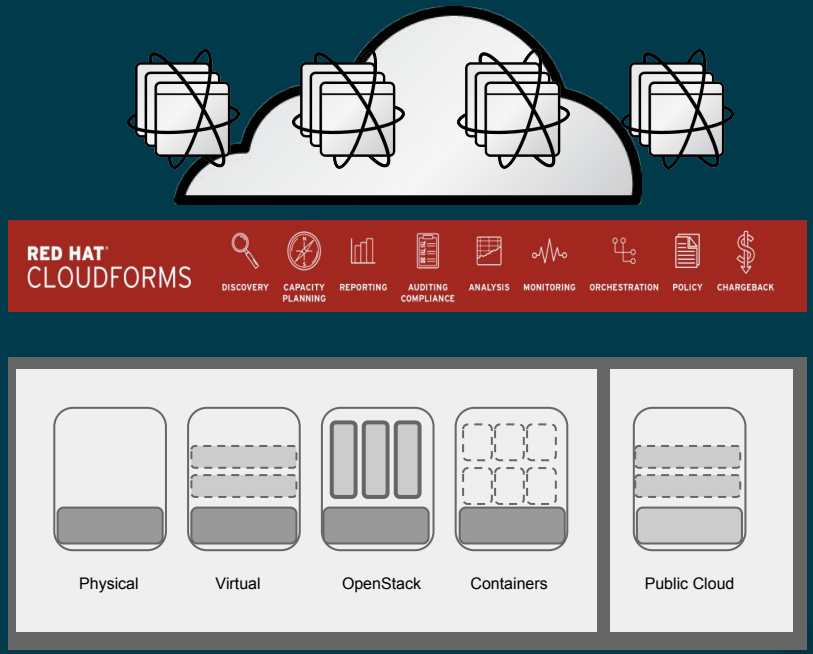
- For VMs and Instances discovers Operating System, Installed Software, Users & Groups, Files and Registry Keys
- Works agentless and regardless of power state
- Control policies can validate conditions and execute actions based on retrieved information



Container Support

Discovery and Inventory for Operations

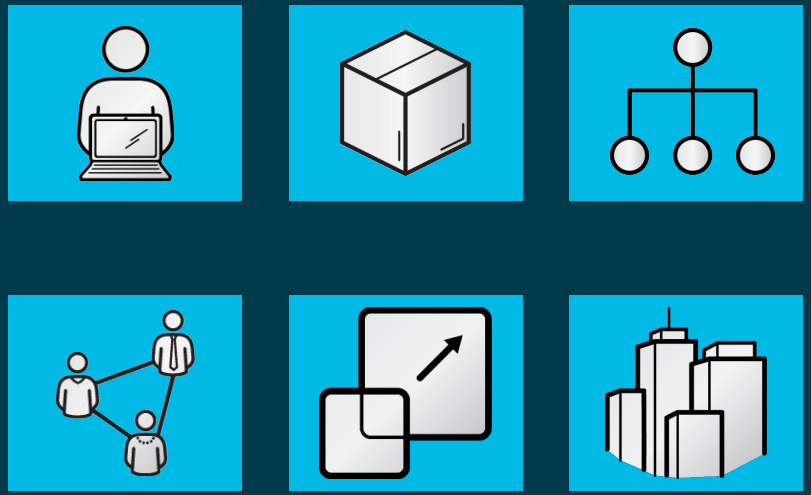
- Discover Infrastructure including Containers, Pods, Routers, Services and Image Registry
- Detect relationships between objects, eg. Data Store -> VM -> Container -> Service
- Build topology map to visualize logical network diagram
- Developer User Experience provided by OpenShift Enterprise Portal



Enterprise Ready

Built for Enterprise Scale Cloud Operations Management

- Web Based Admin and Self-Service Portal
- Agent-Free Virtual Appliance
- Enterprise Directory Support
- Multi Tenancy
- Horizontal Scaling and Load Balancing
- Management of Multiple Locations



Open Hybrid Cloud Management

Unified Web UI and API to manage Private, Public and Hybrid Clouds

- **Private:** Red Hat Virtualization, Red Hat OpenStack Platform, Red Hat OpenShift Container Platform, VMware vSphere, Microsoft SCVMM
- **Public:** Amazon EC2, Microsoft Azure, Google Compute Engine
- **Hybrid:** Any combination of the above
- **Bare Metal:** Red Hat Satellite 6
- **Configuration:** Ansible Tower

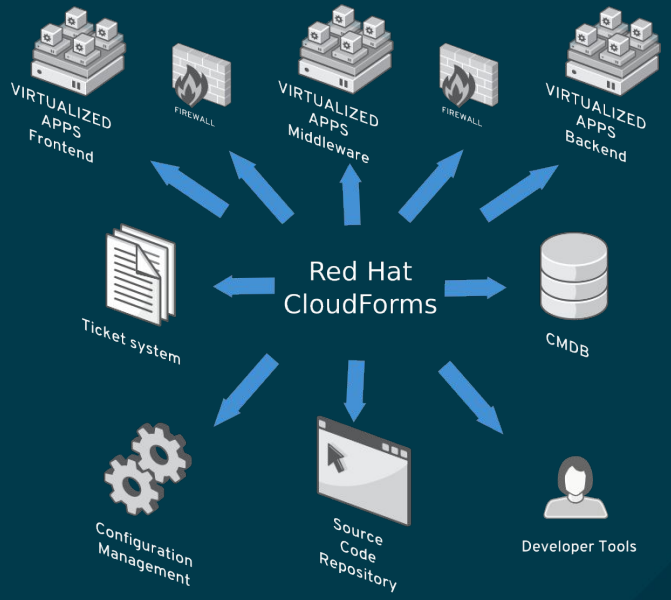
Example Use Cases

Example: Deep Integration

Order Developer Instance from Self-Service Catalog

- Integration to build systems like Jenkins
- Backup, monitoring, Compliance Checks
- Developer tools like GCC, Java, IDE
- IT takes care of security updates and fixes
- App will work in production without modifications

Result: Ready to use developer system

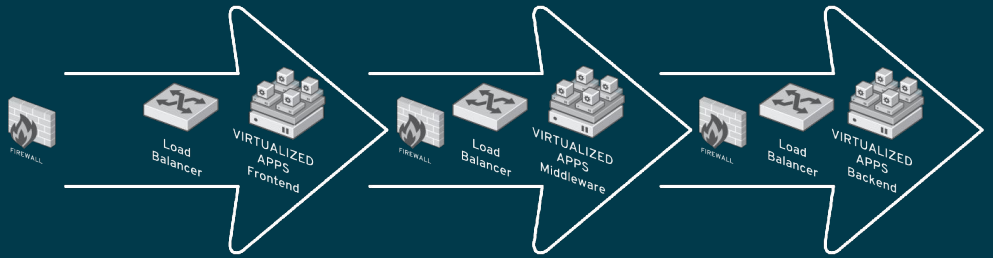


Example: Multi-Tier Deployment

Service Manager orders Deployment of Multi-Tier Application

- CloudForms orchestrates complete stack deployment including firewalls and load balancers
- except frontend firewall
- Only after QA approval, service goes live

Result: Multi-Tier Application Deployment without human interaction



Example: Placement

Users deploy services from catalog unaware of low level technology

- “Not Near” Policy for clustered applications
- Spread load evenly or increase density
- Different Platforms for Devel, QA, Prod, ...
- Fully customizable logic

openstack

amazon web services

redhat

vmware

Microsoft

Result: Better Utilization and more control over pool of available resources

Example: Compliance

Define Compliance Checks and verify cross platform

- Define Policy Profiles and apply them to specific VMs, Hosts, Cluster or Providers
- Verify Compliance for VMs and Instances even if Powered OFF
- Define Actions which are automatically executed in case of non compliance

Result: Enforce Compliance regardless of Technology and Power States


Cloud Innovation
and
Open Source
redhat.

Open Hybrid Cloud

Our Mission

...We believe open, hybrid technology is the future of IT. The operating system for the cloud is open source. Hybrid IT is a reality in every organization, and ultimately, open technology gives you control over today's trends and your own future. ..

Cloud Leaders Rely on Open Source

Proprietary cloud technologies are too expensive and inhibit scaling

amazon.com

Linux
Xen

Linux
KVM
OpenStack

Google

Linux
KVM

Many Mainstream Organizations follow

Open Source-based Clouds are just as cost effective and scalable for mainstream

Linux
KVM
OpenStack

Linux
KVM
OpenStack
OpenShift

Massachusetts
Institute of
Technology

Linux
KVM
OpenStack

Open Source Development Model

Why Open Source drives Innovation

- Development Method
- Better Quality
- Lower Cost
- Distributed Peer Review
- More Flexibility
- Transparency of Process
- OSS Model adopted outside Software (Wikipedia, OpenStreetMap, OpenData, …)

Red Hat Subscription Model

TECHNICAL SUPPORT

- 24 HOURS / 7 DAYS A WEEK
- UNLIMITED INCIDENTS
- MULTI-LINGUAL
- MULTI-VENDOR CASE OWNERSHIP
- MULTI-CHANNEL

ONGOING DELIVERY

- STABILITY WITH A PRODUCT LIFECYCLE OF UP TO 10 YEARS
- PATCHES
- UPDATES
- UPGRADES
- SECURITY RESPONSE TEAM

EXPERTISE

- CUSTOMER PORTAL & FORUMS
- KNOWLEDGEBASE
- ACCESS LABS
- TRAINING CURRICULA (OPTIONAL)

COMMITMENTS

- HARDWARE CERTIFICATION
- SOFTWARE CERTIFICATION
- CLOUD PROVIDER CERTIFICATION
- SOFTWARE ASSURANCE


Questions?
redhat.