RED HAT CLOUD INFRASTRUCTURE

FREQUENTLY ASKED QUESTIONS

RED HAT CLOUD INFRASTRUCTURE AT A GLANCE

- Provides infrastructure as your needs grow—from traditional applications to private, hybrid, and public cloud environments
- Meets private cloud use cases based on existing datacenter virtualization, traditional workloads, and hybrid deployment models
- Provides a public cloud approach, reducing the possibility of shadow IT occurrences
- Includes the top virtualization benchmarks for performance and scalability[1]
- Lets you oversee and orchestrate your entire cloud infrastructure from a single console
- Includes integrated life-cycle management for automated provisioning, configuration management, and software management of Red Hat Enterprise Linux and any RPM-based application

INTRODUCTION

Today's datacenter demands are rapidly evolving as new technology standards—such as cloud-enabled workloads—are adopted. To maintain a competitive edge, organizations must adopt these technologies while cost-effectively using existing investments, preventing vendor lock-in, and enabling innovation. Organizations can achieve this with an open hybrid cloud approach that lets them keep the old and have the new—without compromise.

Red Hat® Cloud Infrastructure helps customers do this. Built on the trusted and enterprise-hardened Red Hat Enterprise Linux® platform, the solution empowers customers to build and manage a private Infrastructure-as-a-Service (IaaS) cloud based on datacenter virtualization and management technologies for traditional workloads. It also provides an on-ramp to a highly scalable, public cloud-like infrastructure based on OpenStack®.

Cost-effective and more comprehensive than alternative solutions, Red Hat Cloud Infrastructure works with your existing infrastructure investments, offering you choice and full control of your strategic direction.

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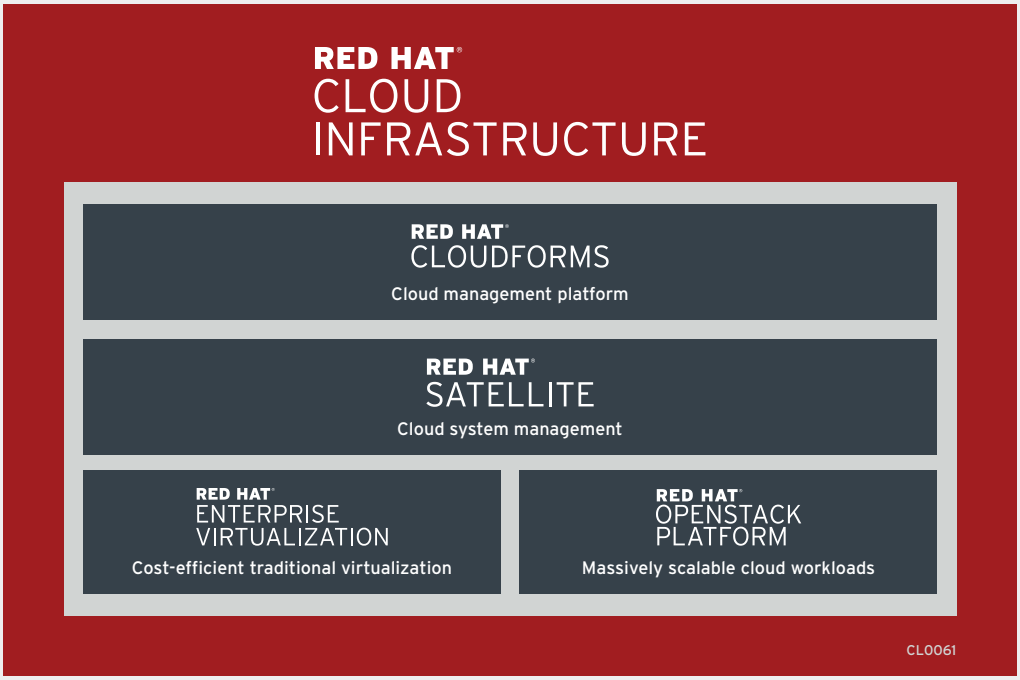
1 *http://www.spec.org/virt_sc2013/results/specvirt_sc2013_perf.html*

RED HAT CLOUD INFRASTRUCTURE

QUESTION: What is Red Hat Cloud Infrastructure?

ANSWER: Red Hat Cloud Infrastructure is a single subscription offering that consists of several integrated Red Hat technologies:

- **Red Hat CloudForms**, providing cloud management and orchestration across multiple hypervisors, public cloud providers, and Red Hat OpenStack Platform
- **Red Hat Satellite**, providing life-cycle management coverage across all of Red Hat Cloud Infrastructure, from the physical infrastructure itself to tenant workloads
- **Red Hat Enterprise Virtualization**, providing datacenter virtualization hypervisor and management for traditional workloads
- **Red Hat OpenStack Platform**, providing a massively scalable, fault-tolerant platform for the development of a managed private or public cloud environment for cloud-enabled workloads—based on Red Hat OpenStack technology, optimized for and integrated with Red Hat Enterprise Linux
- **Red Hat Enterprise Linux**, forming the basis of both Red Hat OpenStack Platform and Red Hat Enterprise Virtualization at the hosted operating system layer. In addition, customers can opt to purchase Red Hat Cloud Infrastructure with Red Hat Enterprise Linux unlimited guests



More information can be found at redhat.com/rhci.

QUESTION: What is the difference between Red Hat Cloud Infrastructure and Red Hat Cloud Suite?

ANSWER: Red Hat Cloud Infrastructure empowers customers to build and manage a private IaaS cloud based on datacenter virtualization and management technologies for traditional workloads. It also provides an on-ramp to a highly scalable, public cloud-like infrastructure based on OpenStack. However, unlike Red Hat Cloud Suite, it does not provide Platform-as-a-Service (PaaS). Red Hat Cloud Suite includes all of the infrastructure and management technologies existing in Red Hat Cloud Infrastructure, as well as OpenShift Enterprise by Red Hat, the award-winning, container-based application development platform. In short, Red Hat Cloud Suite combines IaaS and PaaS with everything available within Red Hat Cloud Infrastructure, and OpenShift Enterprise as well.

QUESTION: Are all of the components of Red Hat Cloud Infrastructure integrated?

ANSWER: Yes, all components are tightly integrated:

- Red Hat CloudForms manages Red Hat Enterprise Virtualization and Red Hat OpenStack Platform environments.
- Red Hat Satellite works with Red Hat CloudForms to perform many life-cycle management tasks, including drift remediation (automatically updating out-of-spec systems), provisioning Red Hat Enterprise Linux guests, and RPM-based workloads on command.
- Red Hat Enterprise Virtualization and Red Hat OpenStack Platform share networking services (Neutron) as well as an image library (Glance), ensuring consistency, standardization, and governance across both products.
- Note: Initial support for OpenStack shared services on Red Hat Enterprise Virtualization is offered as a technology preview.

QUESTION: With a single Red Hat Cloud Infrastructure subscription, can I deploy Red Hat Enterprise Virtualization on one server and Red Hat OpenStack Platform on another?

ANSWER: No. Each subscription entitles a customer to install either Red Hat Enterprise Virtualization or Red Hat OpenStack Platform on a single server. Customers cannot break apart the subscription and place it on multiple servers. For example, a customer who wanted to deploy Red Hat OpenStack Platform on 50 machines and Red Hat Enterprise Virtualization on 50 machines would need to purchase 100 Red Hat Cloud Infrastructure subscriptions.

QUESTION: Are consulting engagements available for Red Hat Cloud Infrastructure?

ANSWER: Red Hat Consulting offers several engagements, including the Red Hat Consulting Discovery Session: Cloud Strategy, Red Hat Consulting Assessment: Infrastructure-as-a-Service, and Red Hat Consulting: Cloud Migrations. Custom engagements tailored for specific customer needs are also available.

Learn more by visiting redhat.com/consulting or watching an overview detailing how Red Hat Consulting helps customers migrate to next generation cloud infrastructure: http://www.redhat.com/en/about/videos/migrating-next-generation-cloud-infrastructure-red-hat-consulting

QUESTION: Is training available for Red Hat Cloud Infrastructure components?

ANSWER: Yes. Red Hat offers hands-on, technical training globally for all of Red Hat Cloud Infrastructure components. Students can train in a traditional classroom, online, or as part of a private team experience. We also offer the Red Hat Learning Subscription, a year-long all-access pass to our entire curriculum of online courses. To validate professionals skills, we also offer performance-based exams on many of the components. Our curriculum expands frequently—please see our website for the latest. Currently we offer the following:

- **Red Hat Enterprise Virtualization Administration (RH318)** teaches experienced system administrators how to use the virtualization features of Red Hat Enterprise Linux managed through the Red Hat Enterprise Virtualization suite. The course can also help professionals prepare for the Red Hat Certified Virtualization Administrator Exam (EX318).
- **Red Hat CloudForms Administration (CL216)** teaches students how to perform an initial configuration of CloudForms, add Red Hat Enterprise Virtualization, implement auditing and compliance policies, provision virtual machines (VMs), and produce various reports. Both this course and Red Hat CloudForms Operations (CL218) can help professionals prepare for the Red Hat CloudForms Hybrid Cloud Management Exam (EX220).
- **Red Hat CloudForms Operations (CL218)** teaches students how to utilize Red Hat CloudForms intelligence tools, such as setting up metering capabilities, provisioning the catalog and services, and configuring alerts.
- **Red Hat Satellite 6 Administration (RH403)** explores the concepts and methods necessary for successful large-scale management of Red Hat Enterprise Linux systems. Participants will learn how to install Red Hat Satellite 6 on a server and populate it with software packages.
- **Red Hat OpenStack Technical Overview (CL010)** is a no-cost, two-hour video course that helps you better understand the basics of cloud computing and Red Hat OpenStack Platform.
- **Red Hat OpenStack Administration (CL210)** teaches students how to install, configure, and maintain a cloud computing environment using Red Hat OpenStack Platform. It can also help prepare candidates for the Red Hat Certified System Administrator in Red Hat OpenStack Exam (EX210).
- **Red Hat OpenStack Administration III (CL310)** teaches experienced system administrators how to use the distributed storage features of Red Hat Ceph Storage and the networking capabilities of OpenStack Neutron. It can also help candidates prepare for the Red Hat Certified Engineer in Red Hat OpenStack Exam (EX310).

Visit redhat.com/training for more information, or contact a training specialist directly at **(866) 626-2994**.

RED HAT OPENSTACK PLATFORM

QUESTION: What are the key customer benefits?

ANSWER: By deploying Red HatOpenStack Platform, IT departments can focus on providing service to their internal or external customers. To meet business demands, Red Hat OpenStack Platform provides the capability to respond quickly and elastically—providing just the resources needed at the appropriate time.

The time necessary to provision, configure, and deploy systems to support the business goes from days or weeks to mere minutes. Scaling applications—either up or down—can be done quickly in response to user demand. And best of all, these benefits come with the solid security and reliability that Red Hat Enterprise Linux delivers.

To learn more, visit redhat.com/openstack.

QUESTION: Many companies offer production support for OpenStack. Why should I choose Red Hat?

ANSWER: Red Hat has the unique advantage of experience, having already turned several major open source projects—including Fedora, JBoss® Application Server, and GlusterFS—into successful, enterprise-ready products such as Red Hat Enterprise Linux, Red Hat JBoss Enterprise Application Platform, and Red Hat Storage Server.

In addition, the Red Hat OpenStack Cloud Infrastructure Partner Network ecosystem is the world's largest network for commercial OpenStack deployments. It connects both business and technical resources to third-party technology companies that are aligned with Red Hat's OpenStack technologies. Since the launch of the network in April 2013, hundreds of software, plug-in, and hardware systems have been added to the list of certified and supported OpenStack commercial solutions. The partners building these solutions work closely with Red Hat to offer customers a commercial-grade OpenStack infrastructure, with complementary technologies integrated across compute, networking, and storage.

QUESTION: What release of OpenStack does Red Hat OpenStack Platform currently implement?

ANSWER: Red Hat OpenStack Platform 8, released in April 2016, is based on the Liberty release of OpenStack. Red Hat OpenStack Platform will maintain an approximate six-month release cadence, remaining approximately 2-4 months behind each community OpenStack release. The delayed release enables Red Hat to thoroughly test the code with confidence to ensure that the bits work in your enterprise environment. Red Hat OpenStack Platform also provides a three-year software support product life cycle.

RED HAT ENTERPRISE VIRTUALIZATION

QUESTION: What sets Red Hat Enterprise Virtualization apart from its competitors?

ANSWER: Red Hat Enterprise Virtualization is a fully featured, open source virtualization platform that offers choice without vendor lock-in.

- **Cost**: Based on open source software and offered through a subscription model, the pricing of Red Hat Enterprise Virtualization is significantly lower than other virtualization solutions. There are no complicated product editions or costly add-ons. All features and components are included in one simplified subscription offering. Learn more at redhat.com/rhev.

- **Scalability and performance**: The Red Hat Enterprise Virtualization Kernel-based Virtual Machine (KVM) technology is an industry-leading platform based on independent, public SPECvirt benchmarks capable of supporting the highest possible VM density[1]—translating to fewer server hosts and lower infrastructure costs.
- **Enterprise management:** Red Hat Enterprise Virtualization offers a feature-rich server virtualization management system that provides advanced capabilities for hosts and guests, including high availability, live migration, storage management, and system scheduler.
- **Security**: Red Hat Enterprise Virtualization provides military-grade security with hardened, kernel-level SELinux and sVirt security technologies. These technologies were developed in conjunction with the United States Department of Defense and ensure isolation between VMs and between each machine and the Red Hat Enterprise Virtualization Hypervisor.
- **Integrated VDI**: Red Hat Enterprise Virtualization integrates the features and functionality for deploying both virtualized servers and complete virtual desktop infrastructure (VDI) within the same cluster at no additional cost. You can choose to deploy both Linux and Windows servers and/or desktops.

Learn more at redhat.com/rhev.

QUESTION: What guest operating systems does Red Hat Enterprise Virtualization support?

ANSWER:

- Red Hat Enterprise Linux 3 (32- and 64-bit)
- Red Hat Enterprise Linux 4 (32- and 64-bit)
- Red Hat Enterprise Linux 5 (32- and 64-bit)
- Red Hat Enterprise Linux 6 (32- and 64-bit)
- Red Hat Enterprise Linux 7 (32- and 64-bit)
- Windows XP Service Pack 3 and newer (32-bit)
- Windows 7 (32- and 64-bit)
- Windows 8 (32- and 64-bit)
- Windows Server 2003 Service Pack 2 and newer (32- and 64-bit)
- Windows Server 2008 (32- and 64-bit)
- Windows Server 2008 R2 (64-bit)
- Windows 2012 (64-bit)
- Windows 2012 R2 (64-bit)

QUESTION: Can I download an evaluation version of Red Hat Enterprise Virtualization?

ANSWER: Yes, a free 30- or 60-day downloadable evaluation is available at access.redhat.com/products/red-hat-enterprise-virtualization/evaluation. The evaluation site includes details on system requirements, step-by-step evaluation labs, documentation, and links to the Red Hat Customer Portal community with tips and guidance for a successful evaluation.

RED HAT CLOUDFORMS

QUESTION: What are the benefits of Red Hat CloudForms?

ANSWER: As your needs change, Red Hat CloudForms evolves, protecting your investments and providing a continuum of capabilities as you progress toward IaaS models. Red Hat gives you choice and flexibility along the way so you can avoid proprietary solutions. It also lets you use existing virtualization and cloud investments from Red Hat, VMware, Microsoft, and Amazon.

For traditional datacenter virtualization, CloudForms provides robust management for Red Hat Enterprise Virtualization, VMware vSphere, and Microsoft Hyper-V.

If you're looking to move workloads that demand maximum uptime to a private cloud, CloudForms serves as a robust cloud engine across multiple heterogeneous virtualization technologies. In addition, CloudForms provides public cloud integration, letting you use Amazon EC2 or Microsoft Azure as an extension of your datacenter. This provides controlled life-cycle management for your on-premise and Amazon-allocated workloads, aggregating that information with your enterprise's virtual infrastructure landscape into a single, unified management console.

For other workloads, or next-generation cloud applications with built in fault-tolerance, CloudForms acts in concert with Red Hat OpenStack Platform to provide a massively scalable, public cloud-like infrastructure including management, self-service provisioning, and chargeback. This architecture also allows you to regain control of any shadow IT applications built on Amazon, either by migrating them to Red Hat OpenStack Platform or by governing them with CloudForms.

Learn more at redhat.com/cloudforms.

QUESTION: What does CloudForms provide for virtual and cloud environments?

ANSWER: For virtual environments, CloudForms provides monitoring and tracking, capacity management and planning, resource usage and optimization, VM life-cycle management, and policies to govern access and usage.

For private or hybrid cloud environments, CloudForms provides a self-service portal and catalog, controls to manage requests, quota enforcement and usage, chargeback and cost allocations, and automated provisioning.

QUESTION: How does CloudForms extend the management of Red Hat OpenStack Platform?

ANSWER: With innovative management features in the latest release, customers can manage the OpenStack undercloud by automating the deployment and management of OpenStack infrastructures, using advanced management instrumentation available in the Red Hat OpenStack Platform.

In the OpenStack overcloud, CloudForms adds additional workload management capabilities, including:

- Automated discovery.
- Web-based console support.
- Service catalog publishing and user dialog generation for OpenStack Orchestration (HEAT) templates.

- Deeper image and workload introspection capabilities with OpenStack Image service (Glance) and OpenStack Compute (Nova) integration.
- Improved capacity and utilization management through expanded OpenStack Telemetry (Ceilometer) integration.

CloudForms is the industry's first open source cloud management platform that manages both the OpenStack infrastructure and OpenStack workloads from a single, integrated platform.

QUESTION: How does CloudForms enhance Red Hat Enterprise Virtualization?

ANSWER: Red Hat Enterprise Virtualization Manager manages KVM hypervisors and helps define a customer's virtual datacenter by setting up hosts, storage, and networks, creating VMs, and establishing high availability and load balancing policies. CloudForms provides additional capabilities. It also:

- Extends Red Hat Enterprise Virtualization management capabilities by adding performance monitoring, discovery, self-service provisioning, policy-based compliance, chargeback, and greater automation capability.
- Unites multiple Red Hat Enterprise Virtualization deployments—providing a centralized management console for large and distributed virtualized deployments.
- Supports both VMware vSphere and Microsoft Hyper-V in addition to Red Hat Enterprise Virtualization, Red Hat OpenStack Platform, and a growing number of public cloud providers such as Amazon EC2 and Microsoft Azure.

RED HAT SATELLITE

QUESTION: What benefits does Red Hat Satellite bring to Red Hat Cloud Infrastructure?

ANSWER: With Red Hat Satellite, customers have a life-cycle management solution that will dramatically reduce the cost of managing virtual or private cloud infrastructures. Red Hat Satellite will provide coverage across all of Red Hat Cloud Infrastructure, from the physical infrastructure itself to tenant workloads. It can:

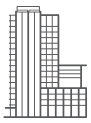
- Provision, update, and, if necessary, retire Red Hat Enterprise Virtualization and Red Hat OpenStack Platform hosts.
- Deploy and configure Red Hat Enterprise Linux guests instead of simply provisioning empty VMs—which was the case, without a third-party solution, prior to Red Hat Satellite's inclusion.
- Provision a VM or instance containing its application to Red Hat Enterprise Virtualization, VMware, Hyper-V, Red Hat OpenStack Platform, or even Amazon EC2, if customers have an RPM-based workload or if they convert a workload to RPM.

Red Hat Satellite provides a variety of other life cycle-related benefits as well, including:

- The ability to work with CloudForms to recognize an out-of-date machine and automatically patch and update it.
- The ability to manage drift using the Puppet configuration management engine.
- Detailed inventory and Red Hat Enterprise Linux subscription reporting.
- The ability to manage the content life cycle of Linux containers as you would handle other content repositories. Satellite 6.1 can sync containers from Docker Hub, Red Hat, or your own custom repository.

QUESTION: Can customers use the included Red Hat Satellite instance for Red Hat Enterprise Linux systems not included in their subscriptions?

ANSWER: No, the instance of Red Hat Satellite included in Red Hat Cloud Infrastructure can only be used to manage Red Hat Enterprise Linux systems running on Red Hat Cloud Infrastructure-entitled hosts or guests. If you want to manage Red Hat Enterprise Linux systems running outside of Red Hat Cloud Infrastructure, you need to purchase a separate Red Hat Satellite subscription to manage those systems.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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