

RED HAT CLOUD INFRASTRUCTURE

FREQUENTLY ASKED QUESTIONS

Red Hat Cloud Infrastructure is a single-subscription offering that integrates:

- Red Hat Virtualization
- Red Hat CloudForms
- Red Hat OpenStack Platform
- Red Hat Satellite
- Red Hat Insights

INTRODUCTION

Businesses are undergoing a rapid digital transformation and today's IT demands are rapidly evolving as new technology standards—such as containers, cloud-enabled workloads, and hybrid models—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, agile, 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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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 likelihood of shadow IT occurrences
- Includes the top virtualization benchmarks for performance and scalability¹
- 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

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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, including errata management, configuration, and provisioning coverage across all of Red Hat Cloud Infrastructure, from the physical infrastructure itself to tenant workloads
- **Red Hat 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 Virtualization at the hosted operating system layer. In addition, customers can opt to purchase Red Hat Cloud Infrastructure with unlimited Red Hat Enterprise Linux guests
- **Red Hat Insights**—providing predictive analytics and failure detection for all components of the Red Hat infrastructure stack

More information can be found at <https://www.redhat.com/en/technologies/cloud-computing/cloud-infrastructure>.

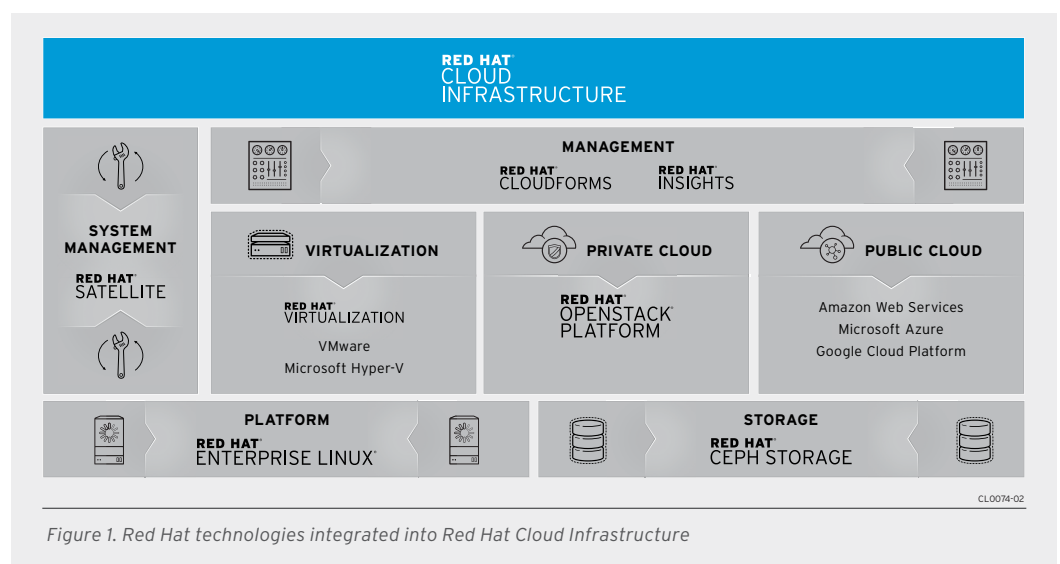


Figure 1. Red Hat technologies integrated into Red Hat Cloud Infrastructure

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

ANSWER: Red Hat Cloud Infrastructure lets you 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 Red Hat OpenShift Container Platform, 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 Container Platform.

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 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), errata management, provisioning Red Hat Enterprise Linux guests, and RPM-based workloads on command.
- Red Hat 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: Support for Cinder on Red Hat Virtualization is offered as a technology preview.

- Red Hat Insights provides real-time, in-depth analysis of Red Hat infrastructure to proactively identify threats to security, performance, and stability, and the interface is accessible through both Red Hat CloudForms and Red Hat Satellite.

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

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

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

ANSWER: Yes. 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 your specific 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 at <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 the following Red Hat Cloud Infrastructure components. You 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—see a complete list of the latest [training](#) and [certification](#) offerings. Highlights include:

- [Red Hat Virtualization Administration \(RH318\)](#) teaches experienced system administrators how to use the virtualization features of Red Hat Enterprise Linux managed with Red Hat Virtualization.
- [Red Hat CloudForms Hybrid Cloud Management \(CL220\)](#) Red Hat CloudForms Hybrid Cloud Management (CL220) is for cloud administrators and operators who need to use [Red Hat CloudForms](#) to manage cloud instances running on multiple cloud providers or virtualization infrastructures.
- [Red Hat Satellite 6 Administration \(RH403\)](#) explores the concepts and methods necessary for successful large-scale management of Red Hat Enterprise Linux systems. You 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 you 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 OpenStack Exam \(EX310\)](#).

Visit redhat.com/training for more information,

RED HAT OPENSTACK PLATFORM

QUESTION: What are the key customer benefits?

ANSWER: By deploying Red Hat OpenStack 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 business can go from days or weeks to hours or minutes. Scaling applications—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-platform.

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

ANSWER: There are three main reasons why you should choose Red Hat OpenStack Platform for building your production OpenStack cloud environment.

- 1. Stable and proven product.** Red Hat OpenStack Platform provides the enterprise features and functionality you need to deliver scale-out infrastructure for cloud-ready applications and workloads. It is reliable and efficient, and it can stand up to the rigors of a production environment. It is a proven platform, with the tools to automate deployments and updates, and orchestrate and monitor a production cloud.
- 2. Portfolio of complementary products.** OpenStack as a technology depends on the underlying Linux operating system for functionality, performance, integration, and long-term stability, which is why we co-engineered it with Red Hat Enterprise Linux. In addition, we have storage, virtualization, management, automation, and even container application platform products so you can create the right cloud solution to fit your needs.
- 3. Ecosystem of experts ready to help.** To help you plan for, build, and even manage OpenStack clouds, we have global services and support teams, as well as an ecosystem of strategic partners ready to help. Our services and support teams help you discover, design, and deploy the right cloud solution, answer questions during and after deployment, and build your IT staff's cloud skills. Our strategic partner ecosystem consists of hundreds of the world's top hardware and software vendors, system integrators, and managed service providers who have built hundreds of certified Red Hat solutions.

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

ANSWER: Red Hat OpenStack Platform 11, released in May 2017, is based on the Ocata release of OpenStack. Red Hat OpenStack Platform will maintain an approximate six-month release cadence, after the upstream community version is released. Before every release, Red Hat thoroughly tests the code to ensure that the code works in your enterprise environment. Red Hat OpenStack Platform now provides varying life cycles, depending on the version.

QUESTION: What are the life-cycle options?

ANSWER: The new life-cycle options allow you to use OpenStack in a manner that best meets your needs. You can either stay up to date on each new version and take advantage of the latest features or standardize on a "long-life" version for up to five years. For Red Hat OpenStack Platform 11, this means one year of life-cycle support. Customers wishing to standardize on a specific version will have the option of remaining on Red Hat OpenStack Platform 10 and later migrating to versions 13 or 16.

RED HAT VIRTUALIZATION

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

ANSWER: Red Hat 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 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.

- **Scalability and performance:** The Red Hat 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 density¹—translating to fewer server hosts and lower infrastructure costs.
- **Enterprise management:** Red Hat 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 Virtualization provides military-grade security with hardened, kernel-level Security-Enhanced Linux (SELinux) and sVirt security technologies. These technologies were developed in conjunction with the United States Department of Defense and ensure isolation between virtual machines (VMs) and between each machine and the Red Hat Virtualization Hypervisor.

Learn more at redhat.com/rhv.

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

ANSWER: Red Hat Virtualization supports the most common server and desktop operating systems, as well as IBM PowerPC (PPC) guests. Current support includes:

FOR X86_64 HOSTS:

Red Hat Enterprise Linux 5	32-bit, 64-bit
Red Hat Enterprise Linux 6	32-bit, 64-bit
Red Hat Enterprise Linux 7	64-bit
Red Hat Enterprise Linux Atomic Host 7	64-bit
SUSE Linux Enterprise Server 10 (select Other Linux for the guest type in the user interface)	32-bit, 64-bit
SUSE Linux Enterprise Server 11. SPICE drivers (QXL) are not supplied by Red Hat. However, the distribution's vendor may provide SPICE drivers as part of their distribution.	32-bit, 64-bit
Windows 7	32-bit, 64-bit
Windows 8	32-bit, 64-bit
Windows 8.1	32-bit, 64-bit
Windows 10	32-bit, 64-bit
Windows Server 2008	32-bit, 64-bit
Windows Server 2008 R2	64-bit
Windows Server 2012	64-bit

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

FOR X86_64 HOSTS:

Windows Server 2012 R2	64-bit
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For PPC hosts:

- Red Hat Enterprise Linux 7, Tier 1, LE/BE
- Red Hat Enterprise Linux 6, Tier 1, BE
- SUSE Linux Enterprise Server 12, Tier 2, LE
- SUSE Linux Enterprise Server 11 SP4, Tier 2, BE

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

ANSWER: Yes, there is a free and supported 60-day downloadable evaluation available at <https://access.redhat.com/products/red-hat-virtualization/get-started>.

RED HAT CLOUDFORMS

QUESTION: What are the benefits of Red Hat CloudForms?

ANSWER: Red Hat CloudForms gives you choice and flexibility, letting you use existing virtualization and cloud investments from Red Hat, VMware, Microsoft, Google, and Amazon.

For traditional datacenter virtualization, Red Hat CloudForms provides robust management for Red Hat Virtualization, VMware vSphere, and Microsoft Hyper-V. For Red Hat OpenStack Platform, Red Hat CloudForms provides comprehensive management of both the OpenStack infrastructure, as well as the virtual workloads running within the OpenStack cloud.

In addition, Red Hat CloudForms provides public cloud integration, letting you use Amazon Elastic Compute Cloud (EC2), Google Cloud Platform, or Microsoft Azure as an extension of your datacenter. This provides controlled life-cycle management for both your on-premise virtualized and public cloud workloads, aggregating information and management functions within a single, unified management console.

Learn more at redhat.com/cloudforms.

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

ANSWER: For all 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. Red Hat CloudForms also 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: You can manage the OpenStack undercloud by automating the deployment and management of OpenStack infrastructures using advanced management instrumentation available in Red Hat OpenStack Platform.

In the OpenStack overcloud, Red Hat 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.

Red Hat 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 Virtualization?

ANSWER: CloudForms provides additional capabilities.

- Extends Red Hat Virtualization management capabilities by adding performance monitoring, discovery, self-service provisioning, policy-based compliance, chargeback, and greater automation capability.
- Unites multiple Red Hat 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 Virtualization, Red Hat OpenStack Platform, and a growing number of public cloud providers such as Amazon EC2, Google Cloud Platform, and Microsoft Azure.

RED HAT SATELLITE

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

ANSWER: With Red Hat Satellite, you have a critical 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, deploy, configure, update, and if necessary, retire Red Hat Enterprise Linux guests, along with Red Hat Virtualization and Red Hat OpenStack Platform hosts.
- Provision a VM or instance containing its application to Red Hat Virtualization, VMware, Hyper-V, Red Hat OpenStack Platform, or even Amazon EC2, if you have an RPM-based workload or if you convert a workload to RPM.

Red Hat Satellite provides a variety of other benefits related to life cycle, 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 via the Red Hat Satellite configuration management engine.
- Detailed Red Hat subscription 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. As of Satellite 6.1, you can now sync containers from Docker Hub, Red Hat, or your own custom repository.

QUESTION: Can I use the Red Hat Satellite instance included in Red Hat Cloud Infrastructure to manage Red Hat Enterprise Linux systems outside my Red Hat Cloud Infrastructure subscription?

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.

RED HAT INSIGHTS

QUESTION: What are the key benefits of Red Hat Insights?

ANSWER: Red Hat Insights provides risk mitigation and helps keep businesses secure by providing predictive risk analytics so alerts are created before downtime or security threats strike. Red Hat Insights provides ongoing, in-depth analysis of an organization's Red Hat infrastructure to proactively identify key threats to security, performance, and stability. By combining granular risk assessment and tailored remediation steps, along with automated resolution, Red Hat Insights enables IT to do more with less and fix IT problems before businesses are affected by:

- Finding and fixing issues before environments are negatively affected by pinpointing risks and immediately providing tailored remediation steps.
- Minimizing human error by providing clear, tailored, step-by-step remediation with verified solutions at the host level.
- Quickly resolving critical security risks by generating Ansible Playbooks to remediate findings.
- Making intelligent decisions using the Red Hat Insights executive reporting module, which provides infrastructure health scores and risk trend analysis.
- Prioritizing remediations and focusing efforts on immediate threats using the Insights "total risk score" analysis.

QUESTION: Can I use the Red Hat Insights instance included in Red Hat Cloud Infrastructure to manage Red Hat Enterprise Linux systems outside my Red Hat Cloud Infrastructure subscription?

QUESTION: How does Red Hat Insights compare to other similar products in the market?

ANSWER: No, the instance of Red Hat Insights 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 Insights subscription to manage those systems.

ANSWER: No other Linux provider offers detailed, predictive, rich data that pinpoints potential risks and provides remediation steps *before* environments are impacted, rather than after an incident has caused downtime or threatened security.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide 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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