RED HAT® OPENSTACK® PLATFORM

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RED HAT OPENSTACK PLATFORM

DATASHEET

Red Hat OpenStack Platform is a production-ready foundation to help you create, deploy, scale, and manage a secure and reliable public or private OpenStack cloud.

As a community project, OpenStack develops and changes quickly. Red Hat removes risk by providing long-term stability through an enterprise software life cycle and offering production-level support.

PRODUCT OVERVIEW

To succeed in the fast-paced digital economy, organizations must differentiate themselves. This requires a new approach to IT service delivery. As a result, IT organizations must provide fast access to resources and offer the latest capabilities and innovations to end users and developers.

Red Hat® OpenStack® Platform brings together open, community-powered innovation with enterprise scale and confidence—empowering businesses to deliver new, differentiated applications and services on a flexible, scalable, and proven OpenStack private cloud.

With Red Hat OpenStack Platform, you can:

- Simplify application and service delivery using an automated, self-service operating model.
- Deliver a consistent operational experience with stable, reliable platforms, life-cycle management, and tested and hardened innovation.
- Adopt new technologies with less risk through Red Hat's open source development model and enterprise-grade services and support.

FEATURES AND BENEFITS

Red Hat OpenStack Platform gives you the features and functions to construct a scalable, flexible cloud environment based on proven, integrated technologies.

DEPLOYMENT AND LIFE CYCLE

Reliable deployments with live upgrades	Red Hat OpenStack Platform director checks systems throughout the installation process to provide consistent, automated cloud deployment. It features live orchestrated system upgrades and updates, ensuring long-term, production-ready stability with little downtime.
Enterprise software life cycle	Red Hat provides stable branch releases of OpenStack and Linux® that are supported for an enterprise production life cycle—beyond the six-month release cycle of the OpenStack community. Customers can choose to standardize for up to five years on certain releases or update every six months to one year.
Simplified long-life upgrades	The fast forward upgrade feature in Red Hat OpenStack Platform director simplifies the process of upgrading in-place between long-life releases, like Red Hat OpenStack Platform 10 and 13, reducing the number of reboots required and eliminating the need for additional hardware.
Containerized OpenStack services	Running OpenStack services in containers lets you manage and scale each service independently. This simplifies deployment, upgrades, rollback, and management to deliver increased control and flexibility.

QUICKLY BUILD THE APPS YOUR BUSINESS NEEDS WITH A MODERN I.T. INFRASTRUCTURE

Deploy Red Hat OpenStack Platform and Red Hat Ceph® Storage together. Learn more at redhat.com/en/resources/hyperconverged-infrastructure-for-cloud.

Consider Red Hat Cloud Suite. Learn more at redhat.com/cloud-suite.

For more information on OpenStack, visit openstack.org.

For more information on Red Hat cloud solutions, visit redhat.com/products/cloud-computing.

OPENSTACK TECHNOLOGY LEADERSHIP FROM RED HAT

Red Hat has been a top code contributor to the OpenStack project since 2011. Learn more at stackalytics.com/?release=queens&metric=commits.

MANAGEMENT

Integrated orchestration	Red Hat OpenStack Platform director provides system-wide orchestration of OpenStack resources, including bare-metal provisioning.
Workload and infrastructure management	Red Hat CloudForms® can manage OpenStack workloads and infrastructure. It gives you resource management and data collection over OpenStack clouds, including resource monitoring and reporting, compliance assurance, chargeback and showback, service cataloging, user management, and heat template management.

RELIABILITY, AVAILABILITY, AND PERFORMANCE

Production testing and hardening	An extensive patching, bug-fixing, testing, and certification process ensures broad compatibility and performance with upstream community releases.
Highly available infrastructure	Red Hat OpenStack Platform maintains high availability and policy-driven measures, including infrastructure failure recognition, automated host node evacuation, and downed node fencing, and automatically restarts workloads on remaining available hosts.
Performance	Red Hat Virtualization Hypervisor provides superior performance for OpenStack workloads. Based on Kernel-based Virtual Machine (KVM), the hypervisor holds top performance scores on the SPECvirt_sc2013 benchmark.[1] In Red Hat OpenStack Platform 13, the real-time KVM compute role delivers ultra-low latency using the Red Hat Enterprise Linux real-time kernel.

SECURITY AND COMPLIANCE

Security	Security-Enhanced Linux (SELinux) military-grade security technologies prevent intrusions and protect data when running in public or private OpenStack clouds.
Compliance certifications	Certifications with the Federal Risk and Authorization Management Program (FedRAMP), European Telecommunications Standards Institute (ETSI), and Agence nationale de la sécurité des systèmes d'information (ANSSI) regulations help you keep your environment compliant.

1 *"All SPECvirt_sc2013 Results Published by SPEC". Standard Performance Evaluation Corporation.* spec.org/virt_sc2013/results/specvirt_sc2013_perf.html.

BUILD YOUR OPENSTACK CLOUD ON THE INDUSTRY-LEADING HYPERVISOR FROM RED HAT

The Red Hat Virtualization Hypervisor, based on KVM technology, holds top scores in the industry-standard SPECvirt hypervisor benchmark for performance, density, and scalability. Learn more at spec.org/virt_sc2013/results/specvirt_sc2013_perf.html.

RED HAT TRAINING AND CERTIFICATION

Get your IT team trained on OpenStack and certified with our lab-intensive courses and performance-based exams. Learn more at redhat.com/en/services/training/openstack.

PROFESSIONAL CONSULTING SERVICES

Red Hat offers a portfolio of consulting offerings for cloud technology solutions, including:

- Consulting discovery sessions
- Consulting assessments

Learn more at redhat.com/consulting.

INTEGRATIONS

Reliable storage	Integration with Red Hat Ceph Storage provides a highly scalable and redundant object, block, and file storage solution for your OpenStack cloud. Support for the OpenStack Manila shared file system service lets you use the CephFS NFS File Share-as-a-Service,(FSaaS) so you can choose the right type of storage for each workload, all from a unified storage platform.
Containerized, cloud-native workload support	Integration between Red Hat OpenStack Platform and Red Hat OpenShift® lets you create a flexible architecture for containerized and cloud-native applications. • Shared networking using the Kuryr OpenStack project removes the need for multiple network overlays and reduces performance issues. • Automated, self-service access to compute, network, and storage resources increases developer productivity and efficiency. • Complete, unified life-cycle management streamlines operations and scalability.
Networking integration	Red Hat OpenStack Platform includes several features to increase networking performance and flexibility. • OpenDaylight software-defined networking (SDN) controller integrates with deployment and life-cycle management through the director for network functions virtualization (NFV) installations. • Load Balancing-as-a-Service (LBaaS) through the Octavia OpenStack service provides highly available cloud-scale load balancing for traditional and containerized workloads. • Support for the Open Virtual Networking (OVN) networking stack supplies consistency between Red Hat OpenStack Platform, Red Hat OpenShift, and Red Hat Virtualization.
Integrated stack	Red Hat OpenStack Platform helps relieve deployment and management burdens by integrating with a portfolio of Red Hat cloud infrastructure products. • Deploy Red Hat Enterprise Linux as host nodes and virtual machines to gain performance, security, and operational advantages. • Use Red Hat CloudForms® as a unified infrastructure and to manage virtual workloads on Red Hat OpenStack Platform. • Set up Red Hat Ceph Storage for highly redundant, scale-out block, object, and image storage. • Use Red Hat Virtualization for traditional scale-up virtualization alongside new OpenStack scale-out workloads. • Deploy Red Hat OpenShift Container Platform to build a DevOps Platform-as-a-Service (PaaS) with containers. • Access Red Hat Satellite for application and operating system entitlement, including images and host package management displayed by Red Hat OpenStack Platform director.

ECOSYSTEM

Expansive ecosystem	Backed by a robust ecosystem, Red Hat simplifies integration with existing datacenter investments through an OpenStack partner certification program across software, hardware, and services vendors, including original equipment manufacturers (OEMs), independent hardware vendors (IHVs), independent software vendors (ISVs), channel partners, system integrators, and cloud service providers (CSPs) and managed service providers (MSPs).

With Red Hat OpenStack Platform, your organization can access the most widely deployed enterprise Linux operating system, use Red Hat CloudForms for infrastructure and workload management, and deploy Red Hat Ceph Storage for scalable, software-defined storage to start building an optimized and integrated OpenStack cloud. Find more information at redhat.com/en/technologies/linux-platforms/openstack-platform.

TECHNICAL SPECIFICATIONS

Red Hat OpenStack Platform will run on any server platform that is certified for Red Hat Enterprise Linux. The following minimums are required for specific server roles:

COMPUTE NODES

- 64-bit x86 processor with support for the Intel 64 or AMD64 CPU extensions, and the AMD-V or Intel VT hardware virtualization extensions enabled (recommended minimum of four cores)
- A minimum of 6GB of RAM (additional RAM may be required based on the amount of memory the user intends to make available to virtual machine instances)
- A minimum of 40GB of available disk space (1TB is recommended)
- 2 x 1Gbps network interface cards (at least two NICs are recommended for production environments)
- Each compute node requires intelligent platform management interface (IPMI) on server's motherboard

CONTROLLER NODES

- 64-bit x86 processor with support for the Intel 64 or AMD64 CPU extensions
- A minimum of 32GB of RAM (64GB is recommended for optimal performance)
- A minimum of 40GB of available disk space
- 2 x 1Gbps network interface cards

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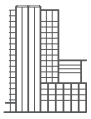
- 8-core 64-bit x86 processor with support for the Intel 64 or AMD64 CPU extensions
- Red Hat Enterprise Linux as the host operating system
- A minimum of 16GB of RAM
- A minimum of 100GB of available disk space (10GB of free space is needed before attempting an overcloud deployment or update)
- A minimum of 2 x 1Gbps network interface cards (10Gbps is recommended for provisioning network traffic, especially if provisioning a large number of nodes in overcloud)



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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