

COMPLETE OPENSTACK STORAGE FROM RED HAT

TECHNOLOGY BRIEF

INTRODUCTION

OpenStack® is the largest and fastest-growing open source cloud infrastructure project. OpenStack helps enterprises build and manage scalable, flexible services. But to achieve this, it must be supported by storage that is also scalable and flexible.

Red Hat® Storage consists of scale-out technologies that integrate more tightly with OpenStack than traditional, proprietary storage solutions, making Red Hat OpenStack Platform and Red Hat Ceph Storage an ideal combination for enterprises deploying OpenStack.

ENTERPRISE-READY OPEN SOURCE TECHNOLOGY

Enterprises with successful OpenStack deployments tend to partner with organizations that have a history of open source expertise, a solid alliance with the OpenStack community, and expert services and support.

As an OpenStack Foundation Platinum Member, Red Hat is uniquely positioned to help enterprises successfully deploy and manage an OpenStack-based cloud through its extensive relationships with the OpenStack community. In addition, Red Hat is also an active contributor to the Ceph community, which delivers a component that is critical for every OpenStack deployment: storage.

Red Hat's comprehensive, software-defined storage portfolio spans physical, virtual, and cloud environments to meet the needs of increasingly massive deployments. Red Hat Storage scales as OpenStack scales: quickly, reliably, and cost-effectively, on industry-standard servers and disks.

RED HAT CEPH STORAGE

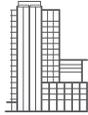
An open, software-defined storage solution, Red Hat Ceph Storage is based on Ceph, the system overwhelmingly preferred by OpenStack users.¹ It offers a single, efficient platform supports block storage – both persistent and ephemeral – object, and file storage. Red Hat Ceph Storage also provides:

- Massive scalability and flexibility.
- Self-managing and self-healing capabilities.
- Support for Red Hat Enterprise Linux® and Ubuntu OpenStack.

Red Hat Ceph Storage seamlessly integrates with OpenStack's modular architecture and components to store petabytes of data, as well as cloud and other workloads. It also provides crucial storage service for virtual machines and a fully supported cloud platform.

In addition, Red Hat Ceph Storage is an effective storage back end for Red Hat OpenStack Platform, which provides an integrated, optimized foundation for private and public clouds. A Ceph block device (RBD) integrates tightly with OpenStack by providing a single back end for Manila, Cinder, Nova, and Glance to efficiently store images, volumes, and snapshots. A Ceph Object Gateway (RGW)

¹ [OpenStack user survey, April 2017.](#)



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.

NORTH AMERICA
1 888 REDHAT1

**EUROPE, MIDDLE EAST,
AND AFRICA**
00800 7334 2835
europe@redhat.com

ASIA PACIFIC
+65 6490 4200
apac@redhat.com

LATIN AMERICA
+54 11 4329 7300
info-latam@redhat.com



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provides a RESTful interface that is compatible with applications written for OpenStack Swift. Both of these data services are based on the underlying RADOS object store, letting users deploy and manage both within a single cluster.

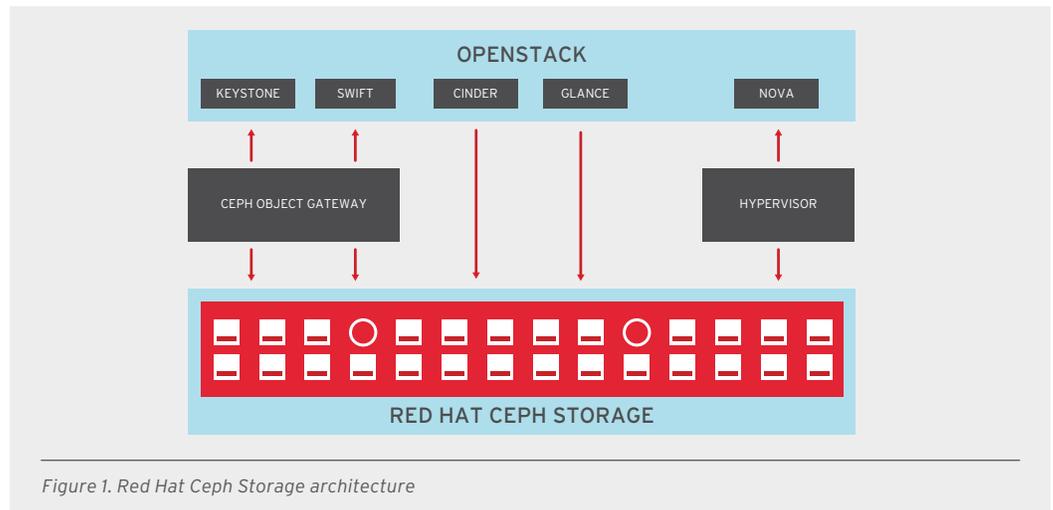


Figure 1. Red Hat Ceph Storage architecture

Red Hat Ceph Storage is now included with Red Hat OpenStack Platform, Red Hat Cloud Infrastructure, and Red Hat Cloud Suite. Paired with these solutions, Red Hat Ceph Storage delivers supported end-to-end compute and storage with the agility and scalability to meet enterprise demands – without compromising availability or performance.

RED HAT OPENSTACK PLATFORM

Red Hat OpenStack Platform is a production-ready, co-engineered cloud platform that combines a leading OpenStack technology with a trusted enterprise Linux operating system to help enterprises address customer demands quickly, without sacrificing security or performance.²

Because OpenStack depends on its underlying Linux operating system for everything from service operation and access, hardware resources, system performance, driver integration, and data security, tight integration of OpenStack and its Linux platform is critical to deploying a stable, high-performing cloud.³ Red Hat OpenStack Platform enhances community OpenStack with advanced features to deliver the core Infrastructure-as-a-Service (IaaS) and secondary infrastructure for private or public clouds.

RED HAT CLOUD INFRASTRUCTURE AND RED HAT CLOUD SUITE

Red Hat Cloud Infrastructure tightly integrates Red Hat OpenStack Platform with Red Hat Enterprise Virtualization, Red Hat CloudForms for cloud management, and Red Hat Satellite for life-cycle management to help businesses successfully build and manage an open, private IaaS cloud.

Red Hat Cloud Suite offers the solutions included in Red Hat Cloud Infrastructure with the addition of Red Hat OpenShift Container Platform, a container-based application development platform.

² <http://www.redhat.com/en/technologies/linux-platforms/articles/engineered-for-enterprise>

³ <http://www.redhat.com/en/technologies/linux-platforms/articles/critical-bug-fix-example>

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