

RED HAT OPENSTACK PLATFORM SUBSCRIPTION OVERVIEW

TECHNOLOGY OVERVIEW

INTRODUCTION

This subscription overview outlines your Red Hat® OpenStack® Platform subscription options to help you choose the best solution for your organization. Your Red Hat account representative can help you understand your options and make the right decision to meet your technical and business requirements.

RED HAT OPENSTACK PLATFORM OFFERINGS

Red Hat OpenStack Platform subscriptions come in two versions:

1. Red Hat OpenStack Platform
2. Red Hat OpenStack Platform (without guest operating system)

The only difference between the two is that the first version includes the right to use Red Hat Enterprise Linux® as the guest operating system in an unlimited number of virtual machines hosted by OpenStack. Both versions include the ability to run Red Hat OpenStack Platform.

The following table details the software included with each version:

TABLE 1: RED HAT OPENSTACK PLATFORM OFFERINGS

INCLUDED SOFTWARE	RED HAT OPENSTACK PLATFORM	RED HAT OPENSTACK PLATFORM (WITHOUT GUEST OPERATING SYSTEM)
Red Hat Enterprise Linux (bare-metal operating system) For use as the operating system underneath OpenStack	✓	✓
Red Hat Virtualization Kernel-based Virtual Machine (KVM) Hypervisor For creating and running virtual machines with OpenStack	✓	✓
Red Hat Enterprise Linux High Availability Add-On For a degree of continuous operation	✓	✓
Red Hat OpenStack Platform director For provisioning and managing your OpenStack nodes	✓	✓
Red Hat OpenStack Platform For creating an OpenStack-based private cloud	✓	✓



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INCLUDED SOFTWARE	RED HAT OPENSTACK PLATFORM	RED HAT OPENSTACK PLATFORM (WITHOUT GUEST OPERATING SYSTEM)
Red Hat CloudForms For managing the virtual machines hosted on your OpenStack cloud	✓	✓
Red Hat Storage Console For managing and monitoring a Red Hat Ceph Storage cluster.	✓	✓
Red Hat Enterprise Linux (guest operating system) For use with an unlimited number of virtual machines as the guest operating system.	✓	

Note: Neither Red Hat OpenStack Platform offering includes the Ceph Object Storage Daemon (OSD) software.

DETERMINING THE NEED FOR A RED HAT OPENSTACK PLATFORM SUBSCRIPTION

Any server on which you install or execute Red Hat OpenStack Platform or is managed by Red Hat OpenStack Platform software needs a Red Hat OpenStack Platform subscription, per appendix 1 of Red Hat's enterprise agreement.¹

A Red Hat OpenStack Platform subscription allows you to install and run the included software on a single server with up to two populated sockets. If the server has more than two sockets, you can stack additional subscriptions on it until the number of allowed sockets is equal or greater than the number of populated sockets in the server. For example:

TABLE 2: SERVER USE CASES

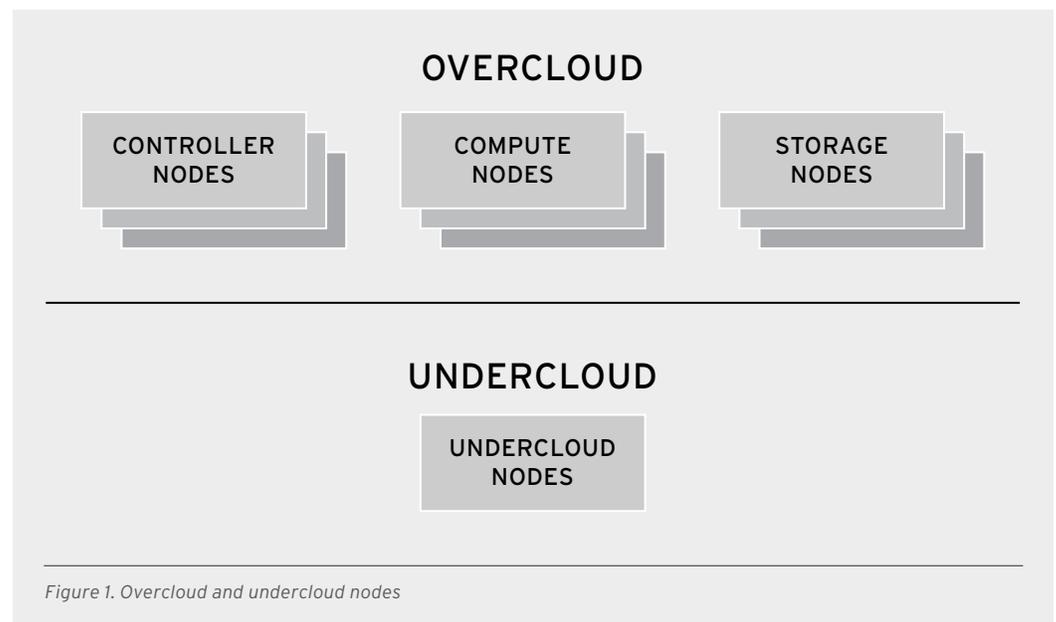
USE CASE	SUBSCRIPTION NEEDS
A server has only one socket in it. That socket is populated with a central processing unit (CPU).	One subscription. Each Red Hat subscription covers up to two sockets.
A server has two sockets in it. One socket is populated with a CPU.	One subscription.
A server has two sockets in it. Both sockets are populated with a CPU.	One subscription.
A server has eight sockets in it. All eight sockets are populated with CPUs.	Four subscriptions. With four subscriptions covering up to two sockets per subscription, you have coverage for up to eight sockets in the server.

¹ <https://access.redhat.com/support/offerings/production/sla>

ASSEMBLING YOUR SUBSCRIPTION ORDER

To determine the Red Hat OpenStack Platform subscription needed for each server in a private cloud deployment, look at the role the server will perform.

The Red Hat OpenStack Platform deployment model includes two main concepts: The undercloud and the overcloud.



UNDERCLOUD

The undercloud installs, configures, and manages the overcloud. Typically, a single server is assigned the role of being the undercloud. The best practice is to install the following software components in virtual machines on the undercloud server:

- Red Hat OpenStack Platform director
- Red Hat CloudForms Management Engine
- Red Hat Storage Console

Since this server uses Red Hat OpenStack Platform and will run virtual machines using Red Hat Enterprise Linux as the guest operating system, a Red Hat OpenStack Platform subscription should be purchased.

OVERCLOUD

The overcloud has all the components needed to run your private cloud. The servers that host the overcloud are usually assigned one of the following three roles:

- **Controller:** Nodes that provide administration, networking, and high availability for the OpenStack environment.
- **Compute:** Nodes that provide computing resources for the OpenStack environment.
- **Storage:** Nodes that provide storage for the OpenStack environment.

Each role has different subscription considerations:

CONTROLLER

For controller nodes, consider whether or not you will deploy any virtual machines on this server. If you will not deploy any virtual machines (the most likely use case), or if any virtual machines you do deploy on this server will not use Red Hat Enterprise Linux as the guest operating system, then you should purchase Red Hat OpenStack Platform (without guest OS) for that server.

If you will deploy virtual machines on the controller node and you will use Red Hat Enterprise Linux as the guest operating system in those virtual machines, then you should purchase Red Hat OpenStack Platform for that server.

COMPUTE

For compute nodes, consider whether or not you want to use Red Hat Enterprise Linux as the guest operating system in any of the virtual machines hosted on these servers. If you will use Red Hat Enterprise Linux as the guest operating system, then you should purchase Red Hat OpenStack Platform for that server.

If you will use another operating system, such as Windows, as the guest operating system, or if you will use standalone Red Hat Enterprise Linux Server or Red Hat Enterprise Linux for Virtual Datacenters subscriptions for the guest operating system, you should purchase Red Hat OpenStack Platform (without guest OS) for that server.

Note: An OpenStack cloud can include compute nodes where the workload is running on the bare-metal server and is not running in a virtual machine. Those compute nodes need to have a Red Hat OpenStack Platform (without guest OS) subscription assigned to them because they will use the Ironic component of OpenStack and take advantage of the OpenStack Keystone (identity), Nova (compute), Neutron (network), Glance (image), and Swift (object) services.

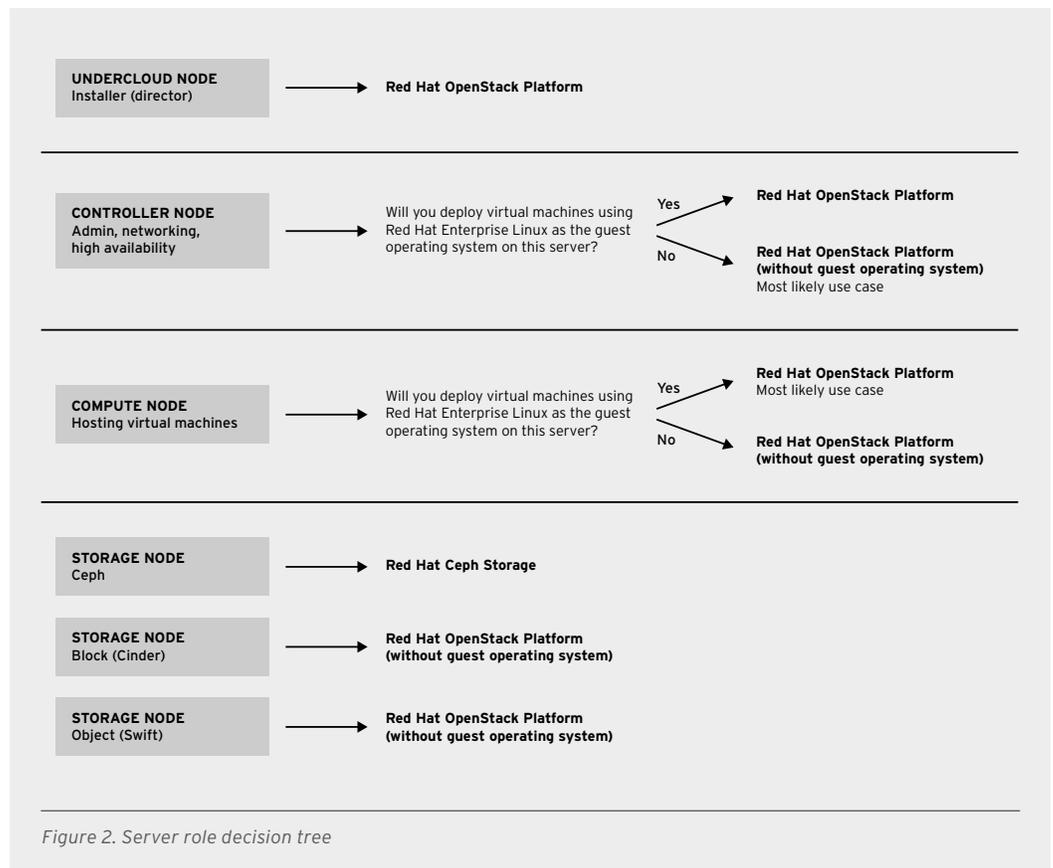
STORAGE

For storage nodes, consider what type of storage will be used:

- **Ceph storage nodes:** Purchase Red Hat Ceph Storage subscriptions for these servers.
- **Block storage (Cinder) nodes:** Purchase Red Hat OpenStack Platform (without guest operating system) subscriptions for these servers.
- **Object storage (Swift) nodes:** Purchase Red Hat OpenStack Platform (without guest operating system) subscriptions for these servers.

SUBSCRIPTION DECISION TREE

Once you understand the four roles a server can have in a Red Hat OpenStack Platform-based cloud, this decision tree can help determine which subscription to purchase for each server:



RED HAT CLOUDFORMS

A version of Red Hat CloudForms is included with each Red Hat OpenStack Platform subscription. It is intended to be used as the day-two cloud management tool for Red Hat OpenStack Platform.

It includes the complete feature set of Red Hat’s standalone CloudForms offering. However, it can only be used to manage virtual machines that are hosted by Red Hat OpenStack Platform. It cannot be used with any other virtualization platform.

As an example, take a server using Red Hat OpenStack Platform to create and run virtual machines. The included Red Hat CloudForms can manage all the virtual machines hosted on that server.

However, if the private cloud includes a mix of compute servers using Red Hat OpenStack Platform, VMware vSphere, and virtual machines hosted on Amazon EC2, the included Red Hat CloudForms subscription can only be used to manage the virtual machines being hosted on Red Hat OpenStack Platform.

Also, note that this policy is different from Red Hat Cloud Infrastructure, which includes Red Hat CloudForms that can be used to manage virtual machines running on a non-Red Hat-certified hypervisor (ESXi or Hyper-V).

TABLE 3: RED HAT CLOUDFORMS INCLUSION IN BUYING PROGRAM

BUYING PROGRAM	IS RED HAT CLOUDFORMS INCLUDED?
Commercial	Yes
Original equipment manufacturer (OEM)	Yes
Embedded	No
Service provider	Yes

RED HAT CEPH STORAGE

To help you evaluate Red Hat Ceph Storage as the storage solution for OpenStack, you get a complimentary standalone subscription of Red Hat Ceph Storage with 64TB of storage when you purchase a Red Hat OpenStack Platform or Red Hat Cloud Infrastructure subscription. That represents 64TB of raw, or about 20TB of usable, storage that can be used across up to three storage nodes.

You will receive one complimentary 64TB subscription in your account regardless of how many Red Hat OpenStack Platform subscriptions you have purchased. The amount of complimentary storage does not increase based on the number of your Red Hat OpenStack Platform subscriptions.

The complimentary subscription in your account will appear as “RH00108 - Red Hat Ceph Storage, Standard (64TB Storage Band, 3 Physical Node).”

The technical support included is at the “standard” level defined on Red Hat’s production support service level agreement page: <https://access.redhat.com/support/offerings/production/sla>.

To expand your Red Hat Ceph Storage capability into production, you can buy any Red Hat Ceph Storage subscription, which start at 256TB. For more information about Red Hat’s Ceph Storage solutions, visit redhat.com/en/technologies/storage/ceph.

TABLE 4: RED HAT CEPH STORAGE INCLUSION IN BUYING PROGRAM

BUYING PROGRAM	IS THE FREE RED HAT CEPH STORAGE GIVEN TO PURCHASERS UNDER THIS PROGRAM?
Commercial	Yes
OEM	No
Embedded	No
Service provider	No

Red Hat OpenStack Platform and Red Hat Cloud Infrastructure subscriptions include enablement software that's needed to use Red Hat Ceph Storage with Red Hat OpenStack Platform. This enablement software includes the installation, management, and monitoring tools for Ceph.

However, the Red Hat Ceph Storage software needed for the storage nodes is not included. That software component is called Red Hat Ceph Storage OSD and is the object storage daemon for the Ceph distributed file system. It is responsible for storing objects on a local file system and providing access to them over the network. This software component is only available in the Red Hat Ceph Storage SKUs.

SMART MANAGEMENT OPTION

Both Red Hat OpenStack Platform and Red Hat OpenStack Platform (without guest operating system) have subscriptions that include smart management. They are:

- Red Hat OpenStack Platform with smart management
- Red Hat OpenStack Platform (without guest operating system) with smart management

These subscriptions provide the module that allows you to use Red Hat Satellite Server as the life-cycle management tool for the Red Hat software included with the subscription.

LIFE CYCLE OPTIONS

With the release of version 10 of Red Hat OpenStack Platform, a change was made to the life-cycle periods, based on feedback from customers. It balances the needs of customers who want access to the latest Red Hat OpenStack Platform technology as soon as it becomes available and those who want to standardize on one version for the longest possible period.

To meet those needs, the life cycle for Red Hat OpenStack Platform will no longer be three years for every major new release. Instead, it will be either a one-year (standard) or three-year (long life) life cycle, based on which version you choose. With the three-year long life version, you will also have the option to purchase extended life-cycle support (ELS) for up to two additional years. The life-cycle periods for version 10 and beyond are:

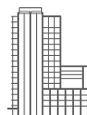
- Version 10 (based on upstream OpenStack community version "Newton") - three years (with the option to purchase up to two additional years)
- Version 11 (based on upstream version "Ocata") - one year
- Version 12 (based on upstream "P" version) - one year
- Version 13 (based on upstream "Q" version) - three years (with the option to purchase up to two additional years)

Customers can choose which version to deploy based on their goals. Customers wanting the latest technology as soon as it is released can move from version to version as they are made available. This gives the customer access to the latest OpenStack technology as it is released by the upstream community. Customers who want to deploy a version for a long time can choose a longer-life version. Versions 10, 13, 16, etc. will allow the customer to standardize on a single version for up to five years.

Note: There are many factors to consider when deciding the frequency of your organization's Red Hat OpenStack Platform upgrades. Speak with your Red Hat account representative to determine which option is right for your organization.

To learn more about the life cycle of Red Hat OpenStack Platform, visit the Red Hat OpenStack Platform life cycle page² in the Customer Portal.

² <https://access.redhat.com/support/policy/updates/openstack/platform/>



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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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