

# Red Hat OpenStack Platform subscription

## Red Hat OpenStack Platform offerings

**This 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 subscriptions are available in three offerings:

1. Red Hat OpenStack Platform
2. Red Hat OpenStack Platform (without guest operating system)
3. Red Hat OpenStack Platform (for bare-metal managed nodes)

The first two offerings are the most common, and the only difference between them is that the first version includes the right to use Red Hat Enterprise Linux® as the guest operating system (OS) in an unlimited number of virtual machines (VM) hosted by OpenStack. With both versions, you can run Red Hat OpenStack Platform.

Red Hat OpenStack Platform for bare-metal managed nodes is a special subscription for managing bare-metal cloud environments and running Red Hat Enterprise Linux or Windows OS (operating system itself is not included), for example, directly on physical hardware.

This table details the software included with each version:

**Table 1: Included software with both Red Hat OpenStack Platform variations**

| Included software                                                                                                                | Red Hat OpenStack Platform | Red Hat OpenStack Platform (without guest OS) |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------|
| Red Hat Enterprise Linux<br>For use as the OS underneath OpenStack                                                               | X                          | X                                             |
| Red Hat Virtualization Kernel-based Virtual Machine (KVM) hypervisor<br>For creating and running virtual machines with OpenStack | X                          | X                                             |
| Red Hat Enterprise Linux High Availability Add-On<br>For a degree of continuous operation                                        | X                          | X                                             |



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| Included software                                                                                                  | Red Hat OpenStack Platform | Red Hat OpenStack Platform (without guest OS) |
|--------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------|
| <b>Red Hat OpenStack Platform director</b><br>For provisioning and managing the life cycle of your OpenStack nodes | X                          | X                                             |
| <b>Red Hat OpenStack Platform</b><br>For creating an OpenStack-based private cloud environment                     | X                          | X                                             |
| <b>Service Telemetry Framework (STF)</b>                                                                           | X                          | X                                             |
| <b>Red Hat Enterprise Linux (guest OS)</b><br>For use with an unlimited number of VMs as the guest OS              | X                          |                                               |

## Determining the need for a Red Hat OpenStack Platform subscription

A Red Hat OpenStack Platform subscription is required for any server used to install or execute Red Hat OpenStack Platform—or for any server that is managed by Red Hat OpenStack Platform—per [appendix 1 of Red Hat’s enterprise agreement](#).

With a Red Hat OpenStack Platform subscription, you can 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 to or greater than the number of sockets in the server.

Here are some examples of usage:

**Table 2: Red Hat OpenStack Platform subscription needs**

| Use case                                                                                               | Subscription needs                                                   |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| A server has only one socket in it, and 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, and one socket is populated with a CPU.                                | One subscription                                                     |
| A server has two sockets in it, and both sockets are populated with a CPU.                             | One subscription                                                     |
| A server has four sockets in it, and two sockets are populated with a CPU.                             | Two subscriptions                                                    |

| Use case                                                                         | Subscription needs                                                                                                                               |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| A server has eight sockets in it, and 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 |

### Assembling your subscription order

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

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

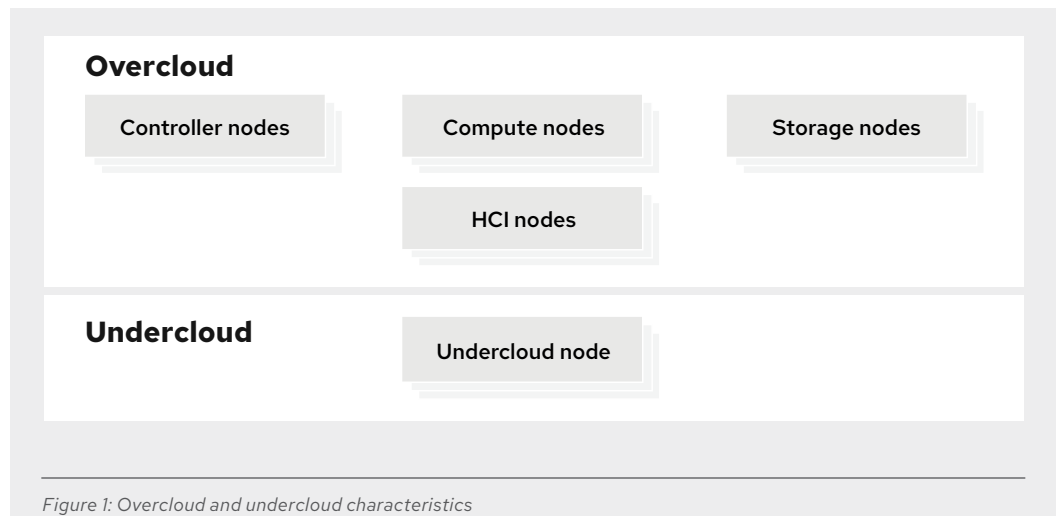


Figure 1: Overcloud and undercloud characteristics

### 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 Red Hat OpenStack Platform Director as a virtual machine running on one of the supported hypervisors](#). Alternatively, Red Hat OpenStack Platform Director can be installed straight on a bare-metal server.

Red Hat OpenStack Platform Director is not intended to run virtual machines; therefore, a Red Hat OpenStack Platform (without guest OS) subscription should be purchased for it.

### Overcloud

The overcloud has all the components needed to run your private cloud environment. The servers that host the overcloud are usually assigned one of these four 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

- ▶ HCI (hyperconverged): Nodes that provide both computing resource and storage on the same physical node for the OpenStack environment

Each role has different subscription considerations, which include:

### Controller

For controller nodes, Red Hat does not support the deployment of VMs on these nodes; therefore, you should purchase Red Hat OpenStack Platform (without guest OS) for that server. This is the typical deployment type.

The only exception to this is the atypical deployment of an all-in-one single server node that provides no high availability. In this deployment topology, if you intend to deploy VMs with Red Hat Enterprise Linux as the guest OS, then you should consider purchasing 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 OS in any of the VMs hosted on these servers. If you will use Red Hat Enterprise Linux as the guest OS, then you should consider purchasing Red Hat OpenStack Platform for that server.

You should purchase Red Hat OpenStack Platform (without guest OS) for each server, if you will use:

- ▶ A standalone Red Hat Enterprise Linux Server subscription for each guest OS.
- ▶ Red Hat Enterprise Linux for Virtual Datacenters subscriptions for each guest OS.
- ▶ Another operating system, such as Windows, as the guest OS.

Note: An OpenStack overcloud can include managed nodes where the workload is running on the bare-metal server instead of a VM. Those managed nodes need to have a Red Hat OpenStack Platform for bare-metal managed nodes subscription assigned to them because they will use Ironic, an OpenStack project, 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:

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

### HCI

Since hyperconverged nodes combine the capability of the Compute and Storage roles, the same considerations for both apply here. You will require both an OpenStack and Ceph Storage subscription(s) for each node.

On the Compute side, you should determine if you would need a Red Hat OpenStack Platform or a Red Hat OpenStack Platform (without guest OS) using the decision-making process detailed under “Compute.”

On the Storage side, Red Hat Ceph Storage subscriptions should be purchased for the same node to cover the software-defined storage installed.

## 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:

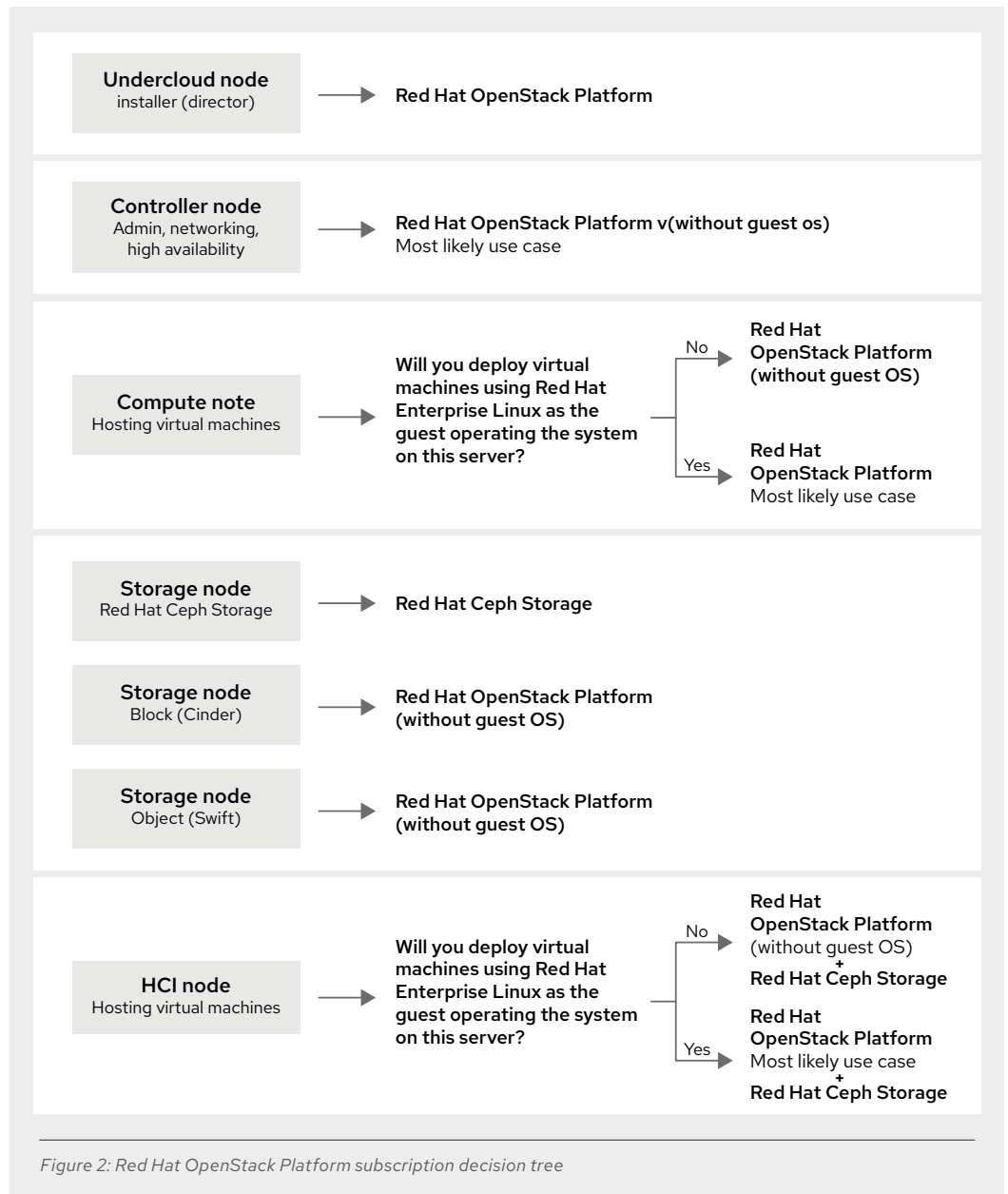


Figure 2: Red Hat OpenStack Platform subscription decision tree

## Red Hat Ceph Storage

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

Red Hat Openstack Platform and Red Hat Cloud Infrastructure subscriptions do not include the actual storage software. That essential software component is included in the Red Hat Ceph Storage subscription. Red Hat Ceph Storage subscription includes Red Hat Ceph Object Storage Daemon (OSD) that provides Red Hat Ceph, a fault-resilient distributed file system. A Red Hat Ceph Storage subscription is required for any nodes acting as Red Hat Ceph Storage nodes.

Red Hat Ceph Storage is sold in subscriptions that pair a maximum number of nodes with total raw storage tiers. The base tier covers 12 physical nodes and 256TB and scales up from there. Learn more about [Red Hat Ceph Storage](#).

### Smart management option

Both Red Hat OpenStack Platform and Red Hat OpenStack Platform (without guest OS) have optional subscriptions that include smart management:

- ▶ Red Hat OpenStack Platform with smart management
- ▶ Red Hat OpenStack Platform (without guest OS) with smart management

Both Smart Management subscriptions allow you to use Red Hat Satellite Server as the life cycle management tool for Red Hat software included with the subscription.

Learn more about [Red Hat Smart Management](#).

### Life cycle options

Many factors should be considered when deciding how often to upgrade your organization's Red Hat OpenStack Platform. Speak with your Red Hat account representative to determine which option is right for your organization.

Learn more about the [life cycle of Red Hat OpenStack Platform](#).



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