

HP Cloud OS for Moonshot

Version 1.0

Glossary



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A

Abstraction layer

A coding layer that provides an intermediary between a programmer and a more complex underlying base code set. The abstraction layer simplifies the complexities of the underlying [REST](#) API and JSON/XML formatting of the [request abstraction](#) layer code.

ACL

Access control list; a list of permissions attached to an object.

Admin Network

Used for administrative functions such as Crowbar node installation, TFTP booting, DHCP assignments, KVM, system logs, backups, and other monitoring.

Admin Node

The Admin Node is a virtual machine that helps in the creation of your cloud, and the installation of all associated software components. The Admin Node manages all other nodes. It assigns IP addresses to the nodes; PXE boots the nodes; configures the nodes; and provides the nodes the necessary software for their roles.

Administration Dashboard

The HP Cloud OS for Moonshot Administration Dashboard enables administrators to manage their cloud infrastructure. Tasks include launching instances, uploading images, creating resource pools, and using designer tools to create topologies. See also [Operational Dashboard](#), which is used for the initial cloud installation, setup, configuration, and creation, before starting the Administration Dashboard.

Allocation

Provisioning cloud resources.

API

An Application Programming Interface (API) is a set of routines, protocols, and tools for building software applications. An API makes it easier to develop a program by providing all the building blocks. A programmer then puts the blocks together. Cloud OS provides a REST API so that programmers can write applications consistent with the operating environment.

API key

An API-based key used for authentication purposes, such as an OpenStack Keystone token.

Authentication

In the context of the Identity Service, the act of confirming the identity of a user or the truth of a claim. The Identity Service will confirm that incoming request are being made by the user who claims to be making the call by validating a set of claims that the user is making. These claims are initially in the form of a set of credentials (username & password, or user access keys). After initial confirmation, the Identity Service will issue the user a token which the user can then provide to demonstrate that their identity has been authenticated when making subsequent requests.

Authentication Token

String which must be used for subsequent requests to other services.

B

Barclamp

Also known as an install module, defines the capability of a service or role to apply to individual hosts or a set of hosts. To deploy a barclamp, a proposal is created.

Baremetal Node

Also known as a Baremetal Host, refers to a physical machine that runs the nova-compute and nova-baremetal-deploy-helper services. The Baremetal Node is controlled by the compute host, and functions like a hypervisor by providing power management and imaging services.

Baseboard Management Controller (BMC)

The Baseboard Management Controller (BMC) is the intelligence in the Intelligent Platform Management Interface (IPMI) architecture. BMC is a specialized microcontroller embedded on the motherboard of a server. The BMC manages the interface between system management software and platform hardware.

Block storage

Information stored in raw form, with no consideration as to the type of information.

Bootable Image

See [Volume \(bootable\)](#).

Broad network access

Broad network access means the capabilities are available over the network and are accessed through standard mechanisms that promote the use by heterogeneous thin-client or thick-client platforms. Examples: mobile phones, tablets, laptops and workstations.

C

CLI

Command-line interface.

Cloud computing

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources. These resources include networks, servers, storage, applications and services. An advantage of cloud computing is that the resources can be provisioned or released rapidly, with minimal management effort or service provider interaction.

Cloud Controller

A node that hosts software which controls your Infrastructure as Service (IaaS) cloud computing platform. Contains those services that are considered single services for a cloud environment, such as Keystone, Glance, Graffiti, Eve, and Focus, and define the boundaries of the cloud environment from an identity standpoint. See also [Compute Region Controller](#), [Network Controller](#), and [Storage Controller](#).

Cloud OS Distribution Network (CODN)

A catalog-based Cloud OS service that allows off-the-shelf content (like workloads, images, and patches) to be imported into your deployed cloud. To access CODN, see the Updates & Extensions panel in the HP Cloud OS for Moonshot Operational Dashboard or HP Cloud OS for Moonshot Administration Dashboard. You can import content from the CODN portal or from a local folder.

Compute Node

Hosts the Cloud virtual machine instances using any supported hypervisor with OpenStack. In the current release, HP Cloud OS for Moonshot supports KVM (qemu-kvm) and VMware (ESXi) as hypervisors. The compute node hosts OpenStack services called Nova-compute and Neutron l2 agent. Multiple Compute Region Nodes can be created to expand cloud capacity.

Compute Region Controller

Responsible for scheduling a launch of instances across compute nodes. You can have multiple compute regions in your cloud. A compute region is

a pool of compute resources that can be consumed through a service API by consumers of the cloud, such as Nova. The scheduling is based on varied flavors of instances and available resources on the compute nodes. In a single compute region deployment model, this can coexist with cloud controller services.

Credentials

Data that belongs to, is owned by, and generally only known by a user, which that user can present to prove their identity.

D

Deprovisioning

Deallocating a cloud resource. See [Provisioning](#).

Domain

A security grouping that provides context for the definition of projects, users, and roles. A domain is constructed by installing and naming a Keystone service. Keystone provides user authentication and tracks projects in a domain.

E

EC2

Elastic compute cloud; Amazon's cloud computing platform.

Eve

An HP Cloud OS for Moonshot composite provisioning service that uses a topology design and profile to create VMs, volumes, and network segments as described in the topology. Eve uses Graffiti service for determining resource pool existence, traits, and User identity mapping.

F

Flavor

The compute, memory, and storage capacity of Baremetal instances.

Floating IP address

An on-demand, allocatable public IP address on a network. You can allocate a number of floating IP addresses up to the quota limit, and then assign them to server [instances](#).

Focus

An HP Cloud OS for Moonshot repository for topology templates and profiles that are used for provisioning.

G

Graffiti

The HP Cloud OS for Moonshot Resource Pool Registry and Capability Tagging Service, providing a dictionary of the "capabilities" of all the resources in a cloud environment; a searchable directory to find cloud resources based on their capabilities; the mechanism for dynamic binding, allowing you to describe requirements rather than concrete bindings; and the base concepts of requirements and capabilities within TOSCA.

H

Hybrid cloud

In a hybrid cloud, the cloud infrastructure is a composition of two or more distinct cloud infrastructures (private or public) that remain unique entities, but are bound together by standardized or proprietary technology that enables data and application portability, such as cloud bursting for load balancing between clouds.

I

Image

1) An installable release package of a program, application, or software system. 2) A copy of a virtual server including the operating system information, system state, and application configurations.

Instance

A Baremetal instance that runs inside the cloud.

Intelligent Platform Management Interface (IPMI)

A standardized computer system interface used by system administrators for out-of-band management of computer systems and monitoring of their operation. It is a way to manage a computer that may be powered off or otherwise unresponsive by using a network connection to the hardware rather than to an operating system or login shell.

IPMI Network

The network that connects the Baremetal host to the Intelligent Platform Management Interface (IPMI) of the Moonshot chassis.

IPMI/BMC Network

A defined network that the Intelligent Platform Management Interface (IPMI) tool calls to assign an IP address to the Baseboard Management Controller (BMC).

J

Job

A job is created when the user submits a desired topology to the HP Cloud OS for Moonshot Eve service API, and requests provisioning based on the

topology. Eve creates the job, for which the Eden Service API framework then publishes status updates. Once the provisioning is finished, the job is marked as completed.

K

Key pair

A pair of key values used for verification purposes; generally one key value is private, and the other public (i.e. user-owned).

L

M

Measured service

Measured service means cloud systems automatically control and optimize resource usage by leveraging a metering capability.

This metering may occur at some level of abstraction that's appropriate to the type of service, such as storage, processing power, bandwidth, and the number of active users. Resource usage may be monitored, controlled, and reported. Measured service provides transparency for the provider and the consumer of the utilized service.

Model abstraction

A coding layer that provides a more functional and user-friendly abstraction for the [REST](#) API programming calls. For example, instead of a direct call to GET containers, via the model abstraction layer the programming call for GET container **container-name** is `directories.get("container-name")`.

A model layer can also include particular kinds of objects, and expose those objects characteristics using simple properties or attributes. For example, "Server" is a model that represents the concept of a virtual [instance](#), with the "Server" model including properties and attributes such as name, [flavor](#), [image](#), addresses, and so on. See also, [Abstraction layer](#).

N

Network Controller

A node that manages the networks in the cloud. Contains Neutron's server, I3 agent and DHCP services. It is a single service in a cloud and can co-exist with cloud controller services.

Node

A computing resource in a network. In other publications, sometimes called a machine.

Nova Flat Network

The private network used for PXE booting the Moonshot cartridges, and enabling communication between the Moonshot cartridges, Baremetal host,

and the cloud Network Controller.

Nova service

An OpenStack service to provide a cloud computing fabric controller, the main part of an Infrastructure as a Service (IaaS) system. Individuals and organizations can use Nova to host and manage their own cloud computing systems.

O

On-demand self service

With on-demand self service, a consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed, automatically, without requiring human interaction with each service provider.

OpenStack

An open-source cloud computing operating system.

Operational Dashboard

The HP Cloud OS for Moonshot Operational Dashboard is used to install, set up, configure, and stand up a cloud environment. See also [Administration Dashboard](#), which is used to manage the cloud that you created.

P

Preboot Execution Environment (PXE) Booting

PXE is one of the components of Intel's Wired for Management (WfM) specification. It allows a machine to boot from a server on a network prior to booting the operating system on the local hard drive. For more, start on this Wikipedia.org page.

Private cloud

In a private cloud, the cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers, such as business units. The private cloud may be owned, managed and operated by the organization, a third party, or some combination, and it may exist on or off the owner's premises.

Project

A grouping that allows users within each group to view and use the same set of resources.

Proposal

A special configuration for an install module, which is also known as a barclamp. It includes Barclamp-specific settings, and a list of Baremetal hosts to which the proposal should be applied.

Provisioning

Allocating, auditing, and monitoring cloud resources for those who accesses and utilizes them.

Public cloud

In a public cloud, the cloud infrastructure is provisioned for open use by the general public. It may be owned, managed and operated by a business, academic, or government organization, or some combination. It exists on the premises of the cloud provider.

Public network

Used for connecting devices that are external to the cloud infrastructure.

PXE

See [Preboot Execution Environment](#).

Q

R

Rapid elasticity

Rapid elasticity means capabilities can be provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, these capabilities available for provisioning often appear to be unlimited and can be appropriated in any quantity at any time.

Region

A set of services, preferably across multiple hosts, to offer private cloud resources of compute and networking to self-service users of your cloud. A region provides a defined set of resources, such as topology templates, infrastructure designs, and services governed by a single HP Cloud OS for Moonshot's Keystone identity service.

Resource pooling

Resource pooling means the provider's computing resources are pooled to serve multiple consumers using a multi-tenant model. Different physical and virtual resources are dynamically assigned and reassigned according to consumer demand. A characteristic of resource pooling is location independence. The customer does not need to know or manage or control the exact location of the provided resources, but may be able to specify it at a high-level of abstraction, such as a resource's country, state, or data center. Examples of resources include storage, processing power, memory and network bandwidth.

REST

Representational State Transfer; a model for providing web services of HTTP.

Request Abstraction

A coding layer that provides programming language-specific access to the underlying core code base REST API HTTP calls.

For example, instead of including a call to the REST API by using HTTP **verb** (GET), path (/flavors), format (?format=json), and the other HTTP attributes, using the request layer you can simplify the call to `list_flavors()` (the specific call depends on the details of your specific request layer syntax). The request layer handles all HTTP request and response parsing and exception handling. Also known as the **request layer**.

Role

A personality that a user assumes when performing a specific set of operations. A role includes a set of rights and privileges. A user assuming that role inherits those rights and privileges. A token that is issued to a user includes the list of roles that user can assume. Services that are being called by that user determine how they interpret the set of roles a user has and which operations or resources each roles grants access to.

Router IP

IP Address of the device that passes network traffic between two different IP addresses as well as subnets.

S

Server

A compute instance that is created from a [flavor](#) combined with an [image](#).

Storage Controller

A node that enables the block storage service. Contains Cinder services that provide block storage and volume connectivity to launched instances. It is a single service in a cloud and can co-exist with Cloud Controller services. Block Storage is not supported currently.

T

Tenant

A collection of HP service subscriptions and/or resources (Compute, Object Storage, etc).

Tenant ID

An ID linking one or more accounts to one or more subscribed services. APIs and Bindings often require a Tenant ID in addition to authentication information.

Token

An arbitrary bit of text that is used to access resources. Each token has a scope which describes which resources are accessible with it.

Topology and Orchestration Specification for Cloud Applications (TOSCA).

A framework used to build cloud topologies. For more, see the [TOSCA Specification](#).

U

V

Volume (bootable)

A bootable server, previously saved by a user.

W

X

Y

Z

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