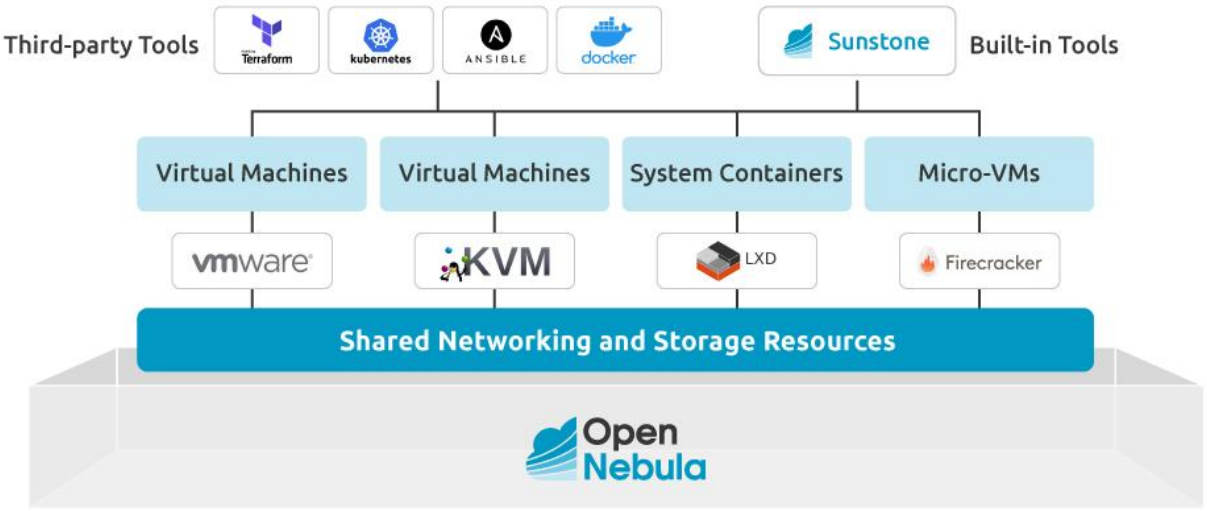
DATASHEET

OpenNebula Overview

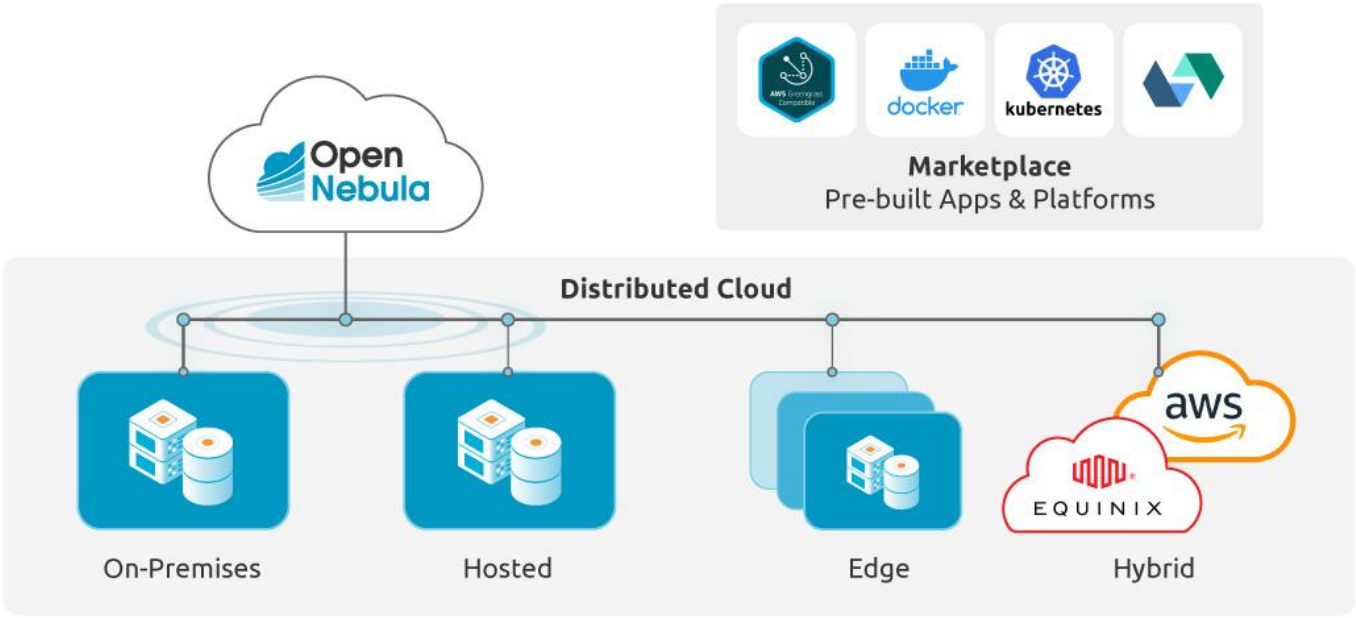


OpenNebula is a **simple, but powerful, open source solution to build and manage Enterprise Clouds**. It combines virtualization and container technologies with multi-tenancy, automatic provision and elasticity to offer on-demand applications and services.

- It supports both containers with virtual machine workloads in a common shared environment to get the best of both worlds.
- It integrates multiple virtualization technologies, from VMware and KVM for fully virtualized clouds to LXD and Firecracker for containerized and serverless deployments.
- It can easily deploy hybrid and edge environments with resources from AWS and Equinix Metal.

OpenNebula's maturity builds upon over a decade of software releases and thousands of enterprise deployments, being widely used by industry and research leaders.

One Cloud to Rule Them All



The OpenNebula Model for Cloud Infrastructure Deployment

A Cloud Architecture consists of a Cloud Management Cluster with the Front-end master nodes and a Cloud Infrastructure with the components needed for offering cloud computing. The Cloud Infrastructure is made of one or several workload Clusters, which can be located at multiple geographical locations, with the hypervisor nodes and the storage system, all interconnected with multiple networks for internal storage and management node communication, and for private and public guest (VM or container) communication.

An OpenNebula Cloud Infrastructure can combine multiple clusters with different configurations to better meet your needs, wherever you are in your process of digital transformation. In general, there are two types of cluster models that can be used with OpenNebula:

Two Types of Cluster Models:

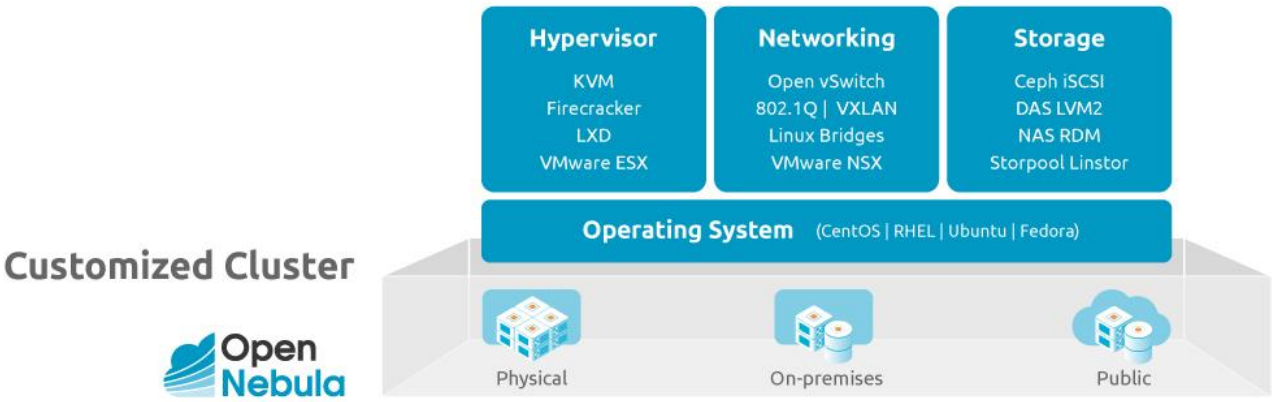
Customized Cluster

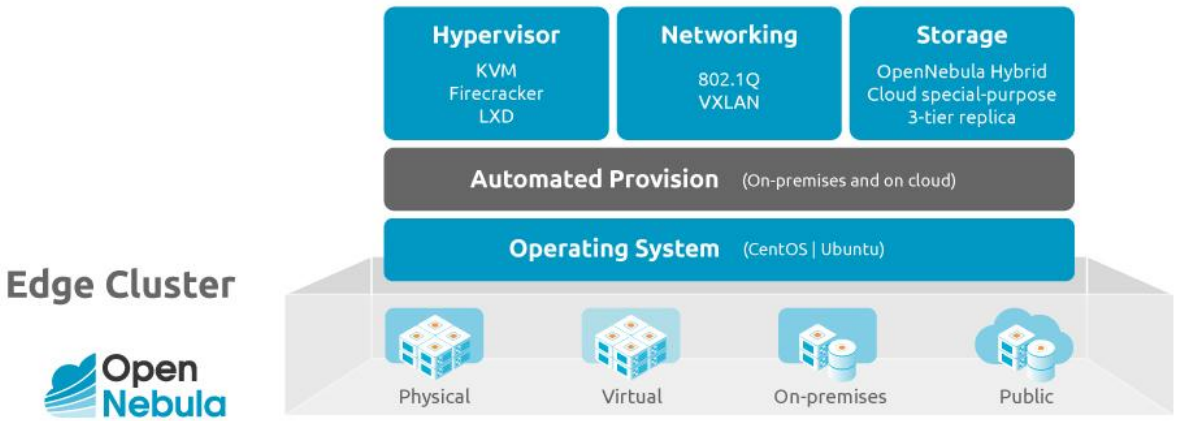
> OpenNebula is certified to work on top of multiple combinations of hypervisors, storage, and networking technologies. In this model you need to install and configure the underlying cloud infrastructure software components first, and then install OpenNebula to build the cloud. The clusters can be deployed on-premises or on your choice of bare-metal cloud or hosting provider. While we support OpenNebula and can troubleshoot the cloud infrastructure as a whole, we cannot provide vendor support for its components.

Edge Cluster

> OpenNebula brings its own Edge Cloud cluster configuration that is based on solid open source storage and networking technologies, and is a much simpler approach than those of customized cloud architectures made of more complex, general-purpose and separate infrastructure components. It can be deployed on-demand on physical and virtual resources both on-premises and on your choice of cloud provider. The Edge Cloud clusters are fully supported end-to-end by OpenNebula Systems.

Two Types of Cluster Models:





Which is Right for You?

Our users have different needs that are constantly evolving over time and we believe that you should be able to choose the cloud infrastructure configuration, or combination of configurations, that really accelerates your business. Our experience working with hundreds of customer engagements shows that the Edge Cloud Architecture meets the needs of 90% of their deployments. It implements enterprise-grade cloud features for performance, availability and scalability with a very simple design that avoids vendor lock-in and reduces complexity, resource consumption and operational costs. Moreover, it enables seamless true hybrid cloud deployments that are natively integrated into public clouds.

OpenNebula offers a single vendor experience by providing one-stop support and services for your entire cloud stack.

Interfaces	❑ Simple, clean, intuitive **GUI** for users and admins with different views ❑ Powerful **CLI** that resembles typical UNIX commands applications ❑ **API** in multiple languages
Application Management and Catalog	❑ Easy **self-provision** of containerized and virtualized workflows from a catalog ❑ **Secure sharing** of applications with other cloud users ❑ Multi tier applications with auto-scaling ❑ Gain **insight into applications** to query their status and metrics, and use them in auto-scaling
Appliance Marketplace	❑ **Public Marketplace** with pre-built applications (PaaS, K8S, CI/CD…) ❑ Build your **private Marketplace** to share and distribute applications within your organization. ❑ Integration with third-party marketplaces like **Docker Hub** and **Linux Containers**.
Chargeback	❑ Fine-grained **accounting** and **monitoring** ❑ **Showback** capability enabling the integration with **chargeback** and **billing** systems
Capacity and Performance Management	❑ **Fine-grained ACLs** for resource allocation ❑ **Resource Quota Management** to track and limit resource utilization ❑ Dynamic creation of **Clusters** as pools of hosts ❑ Dynamic creation of **Virtual Data Centers** as fully-isolated virtual environments ❑ **Federation of multiple Zones** for scalability, isolation or multiple-site support ❑ Powerful and flexible **Scheduler** - deploy your workfload in different locations
High Availability and Business Continuity	❑ **High availability** architecture ❑ **Persistent database backend** with support for high availability configurations ❑ Configurable behavior in the event of failure for cost-effective **failover solutions**
Virtual Infrastructure Management	❑ Virtual infrastructure management adjusted to **enterprise data centers** ❑ **Complete life-cycle management** of virtual resources ❑ Powerful **hooking** system ❑ **Full control, monitoring and accounting** of virtual infrastructure resources ❑ Fine-grained **multi-tenancy**
True Hybrid and Edge Cloud	❑ Dynamically grow your private cloud with **remote cloud providers** ❑ **Automatic provision of remote resources**
Platform	❑ Fully **platform independent** ❑ Broad support for commodity and **enterprise-grade infrastructure platforms** ❑ Packages for major **Linux distributions**
Security	❑ **Fine-grained ACLs** and **user quotas** ❑ Powerful **user, group and role management** ❑ Integration with **enterprise and open-source user management services** ❑ **Login token** functionality ❑ **Fine-grained auditing** and support for **isolation at different levels**
Integration With Third-Party Tools	❑ **Modular** and **extensible** architecture ❑ **Customizable** plug-ins for integration with any third-party data center service ❑ **API** for integration with higher level tools such as billing, self-service portals…
Licensing	❑ **Fully open-source software** released under Apache license
Upgrade Process	❑ **Automatic import of** existing environments ❑ All key functionalities for enterprise cloud in a **single install** ❑ Long term stability & performance through a **single patching and upgrade process**
Quality Assurance	❑ Internal **quality assurance process** ❑ Technology matured through an **active and engaged large community** ❑ Scalability, and performance tested on **many massive scalable deployments**
Product Support	❑ Best-effort community support ❑ **SLA-based commercial support** directly from the developers

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Reference: OpenNebula Overview - Rev20220624