



OpenNebula: Service & Platform

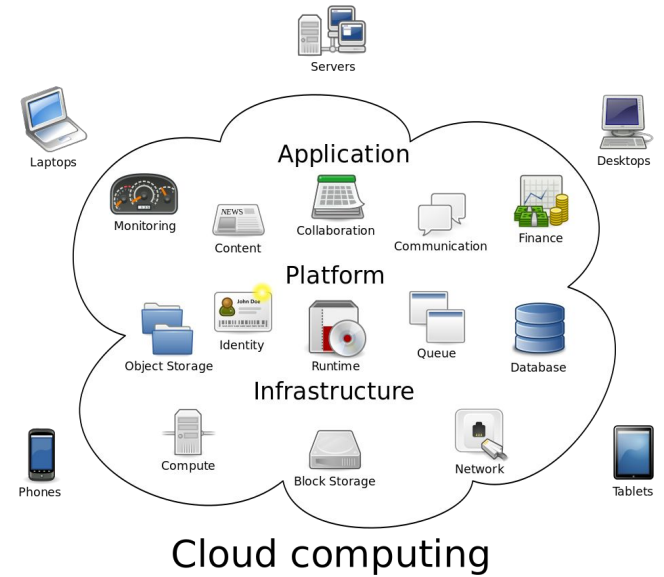


Course: Cluster, Grid, Clouds
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Saint Petersburg, Russia

Cloud Computing: Definition

Cloud computing is the delivery of computing services—servers, storage, databases, networking, software, analytics, and more—over the Internet.





What is OpenNebula?

- OpenNebula is a **Cloud Computing** platform for managing heterogeneous distributed data center infrastructures.
- Manages Data Center's virtual infrastructure to build private, public and hybrid implementations of **Infrastructure as a Service** (IaaS).



OpenNebula: Objective

- Develop a simplest, powerful and adaptable solution for building and managing virtualized data centers
- Provide cloud developers and users with choice of cloud and system interfaces
- Openness of the processes and the technology



Why to use OpenNebula?

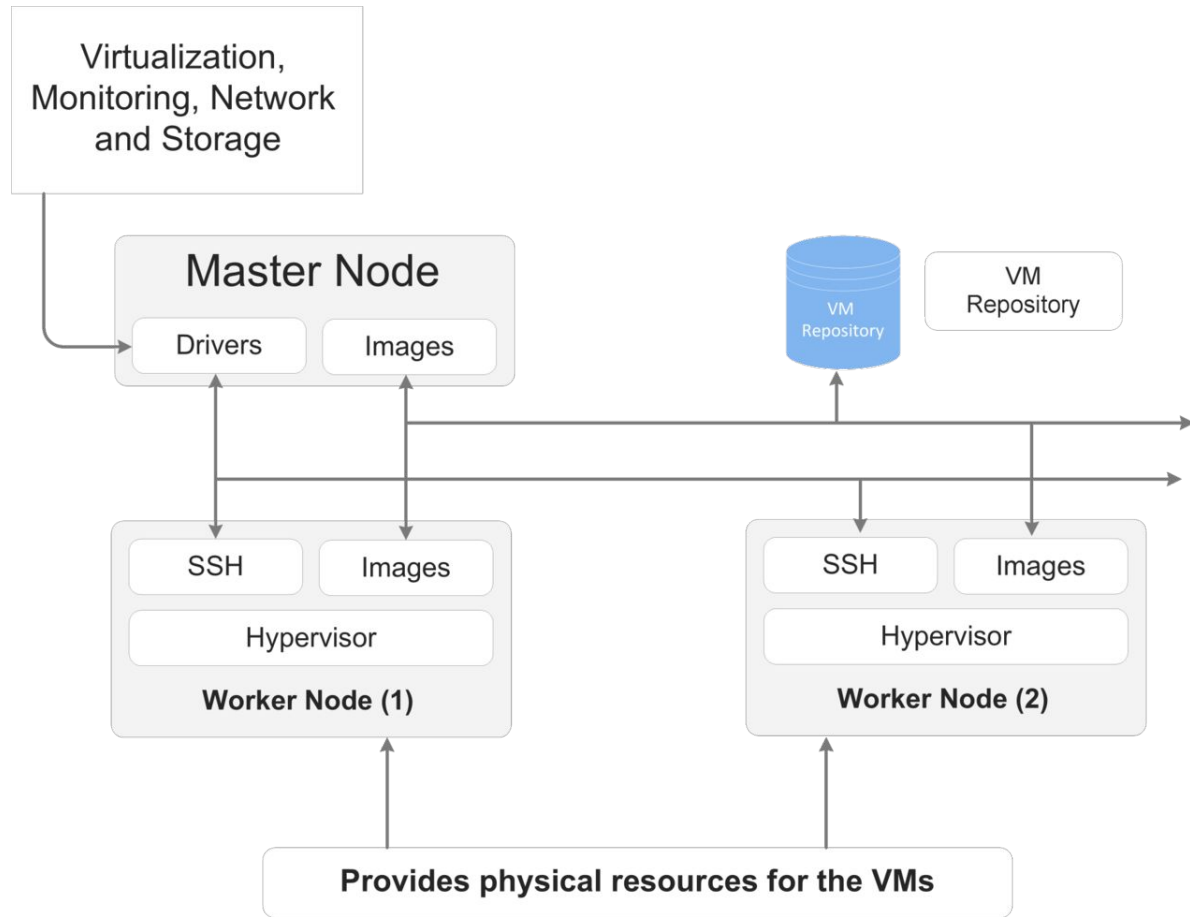
Flexibility: Easily build a cloud to fit data center

Scalability: Easily grow the size of each zone

Openness: Run production ready open source software

Reliability: Cloud will run for years with little maintenance

OpenNebula: Deployment model



Demo: Dashboard



Dashboard

oneadmin OpenNebula

Dashboard

Instances

Templates

Storage

Network

Infrastructure

Clusters

Hosts

Zones

System

Users

Groups

VDCs

ACLs

Settings

Support
Not connected

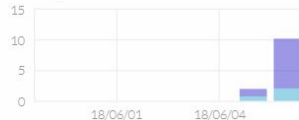
Sign in

VMs 3 ACTIVE 2 PENDING 1 FAILED 0

CPU hours



Memory GB hours



Disk MB hours



Hosts 1 ON 1 OFF 0 ERROR 0

Allocated CPU



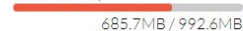
Allocated Memory



Real CPU

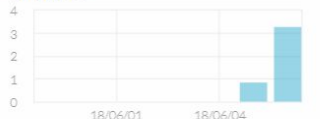


Real Memory

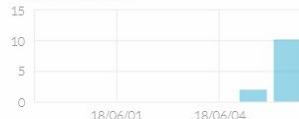


Users 3

CPU hours



Memory GB hours



Disk MB hours



Demo: Template for Virtual Machine



Dashboard

Instances

Templates

VMs

Services

Virtual Routers

VM Groups

Storage

Network

Settings

OpenNebula 5.4.0
by OpenNebula Systems.

Create VM Template

oneadmin

OpenNebula

Reset Create

Wizard

Advanced

General

Storage

Network

OS Booting

Input/Output

Context

Hybrid

VM Group

Other

Name

demo_template

Hypervisor

KVM vCenter

Description

It is a demo template for my project

Logo

Linux



Memory

512

MB

Memory modification

any value

Cost: 0.00 COST / MONTH

CPU

1

CPU modification

any value

Cost: 0.00 COST / MONTH

VCPU

VCPU modification

any value

Cost Total: 0.00 COST / MONTH


Memory

CPU

Disk

MB

Demo: Template for Virtual Machine (2)



Dashboard

Instances

- VMs
- Services
- Virtual Routers

Templates

Storage

Network

Settings

OpenNebula 5.4.0
by OpenNebula Systems.

VM 1 myDemo RUNNING

oneadmin OpenNebula



Info Capacity Storage Network Snapshots Actions Conf

Information

ID	1
Name	myDemo
State	ACTIVE
LCM State	RUNNING
Host	one-sandbox
IP	172.16.100.201
Start time	00:31:27 06/06/2018
Deploy ID	one-1
Reschedule	no
Virtual Router	--

Permissions

	Use	Manage	Admin
Owner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ownership

Owner	oneadmin
Group	oneadmin

Attributes

DESCRIPTION

A small GNU/Linux system for testing

Demo: Create Cluster



Dashboard

Instances

Templates

Storage

Network

Infrastructure

Clusters

Hosts

Zones

System

Settings

Support
Not connected

Sign in

OpenNebula 5.4.0
by OpenNebula Systems.

Create Cluster

oneadmin OpenNebula

Reset Create

Name

demo_cluster

Hosts VNets **Datstores**

You selected the following datstores: default



Search

ID	Name	Owner	Group	Capacity	Cluster	Type	Status
2	files	oneadmin	oneadmin	2GB / 9GB (23%)	0	FILE	ON
1	default	oneadmin	oneadmin	2GB / 9GB (23%)	0	IMAGE	ON
0	system	oneadmin	oneadmin	-/-	0	SYSTEM	ON

10 Showing 1 to 3 of 3 entries

Previous 1 Next

Demo: Create Virtual Data Center (VDC)

127.0.0.1:9869/#vdc-tab/100

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Open Nebula

Virtual Data Center 100 demo_virtualDataCenter oneadmin OpenNebula

Dashboard
Instances
Templates
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Zones
System
Users
Groups
VDCs
ACLs

← ↻ Update ↘ 🗑️

Info Groups **Resources**

Zone OpenNebula

Clusters Hosts VNets Datastores

All

Refresh Search

ID	Name	Hosts	VNets	Datastores
100	demo_cluster	1	1	1

10 Showing 1 to 1 of 1 entries Previous 1 Next

Demo: Attributes of VDC

The screenshot shows the OpenNebula web interface. The browser address bar displays the URL `127.0.0.1:9869/#groups-tab/100`. The page title is "Group 100 demo_group". The user is logged in as "oneadmin".

The left sidebar contains the following navigation items: Dashboard, Instances, Templates, Storage, Network, Infrastructure, Clusters, Hosts, Zones, System, Users, and Groups.

The main content area shows the "Users" tab for the "demo_group". The "Users" tab is active, and the "Info" tab is also visible. The "Update" and "Quotas" buttons are highlighted. The "Edit administrators" button is visible in the top right corner.

The table below shows the users in the group:

ID	Name	Group	Auth driver	VMs	Memory	CPU
2	maliha	demo_group	core		0/-	0KB/-

Showing 1 to 1 of 1 entries. Previous 1 Next

Users marked with ★ are administrators



Thank you!