



4. OpenNebula 6.0 'Mutara'

Expand Your Multi-Cloud to the Edge!



Speaker



Open Nebula

Alberto P. Marti
Open Source
Community Manager



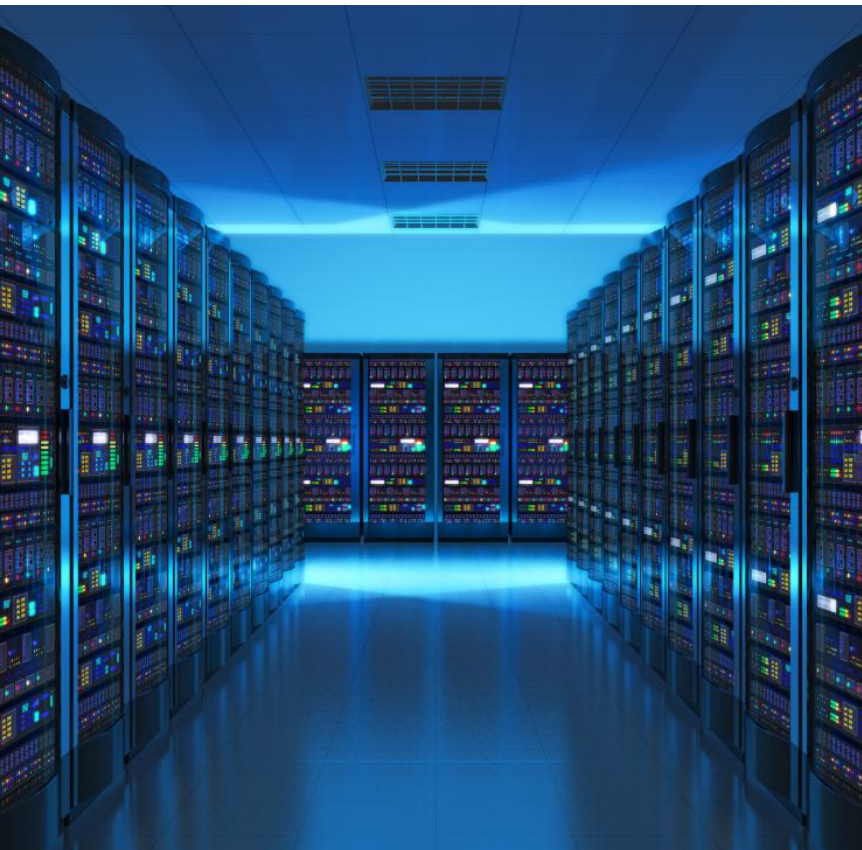
Open Nebula

Jim Freeman
Cloud Solutions Architect



OpenNebula Systems

The company behind OpenNebula



- We are an **Open Source** company.
- **Born in 2005** as the first open source solution for **IaaS**.
- We provide support, professional services & managed cloud services.
- **HQ in Madrid** (Spain).
- Offices in the **US** (Massachusetts) and **Czech Republic**.

OpenNebula Subscription

Unlock the full power of your OpenNebula cloud



Enterprise Edition

Access to our Enterprise Edition packages and Enterprise Tools



SLA-based Support

Secure and private support options under a commercial SLA



Professional Services

Access to OpenNebula Systems engineering & consulting services



Knowledge Base

Access to exclusive contents, tutorials, and critical notifications



Enterprise Edition provides customers a hardened version, with software patches, bug fixes and minor enhancements.

- ✓ **LTS releases** (i.e. OpenNebula 5.12)



Support provided through a private and secure support portal → 9x5 or 24x7



Knowledge Base with Best Practices, Step-by-Step Guides, and Use Cases.



Professional Services:

- ✓ Cloud Deployment & Upgrade
- ✓ Training
- ✓ Consulting/Engineering
- ✓ **Managed Cloud Services**

LINBIT

Open
Nebula



ONEedge.io

This work has received funding from the European Union's
Horizon 2020 research and innovation programme under
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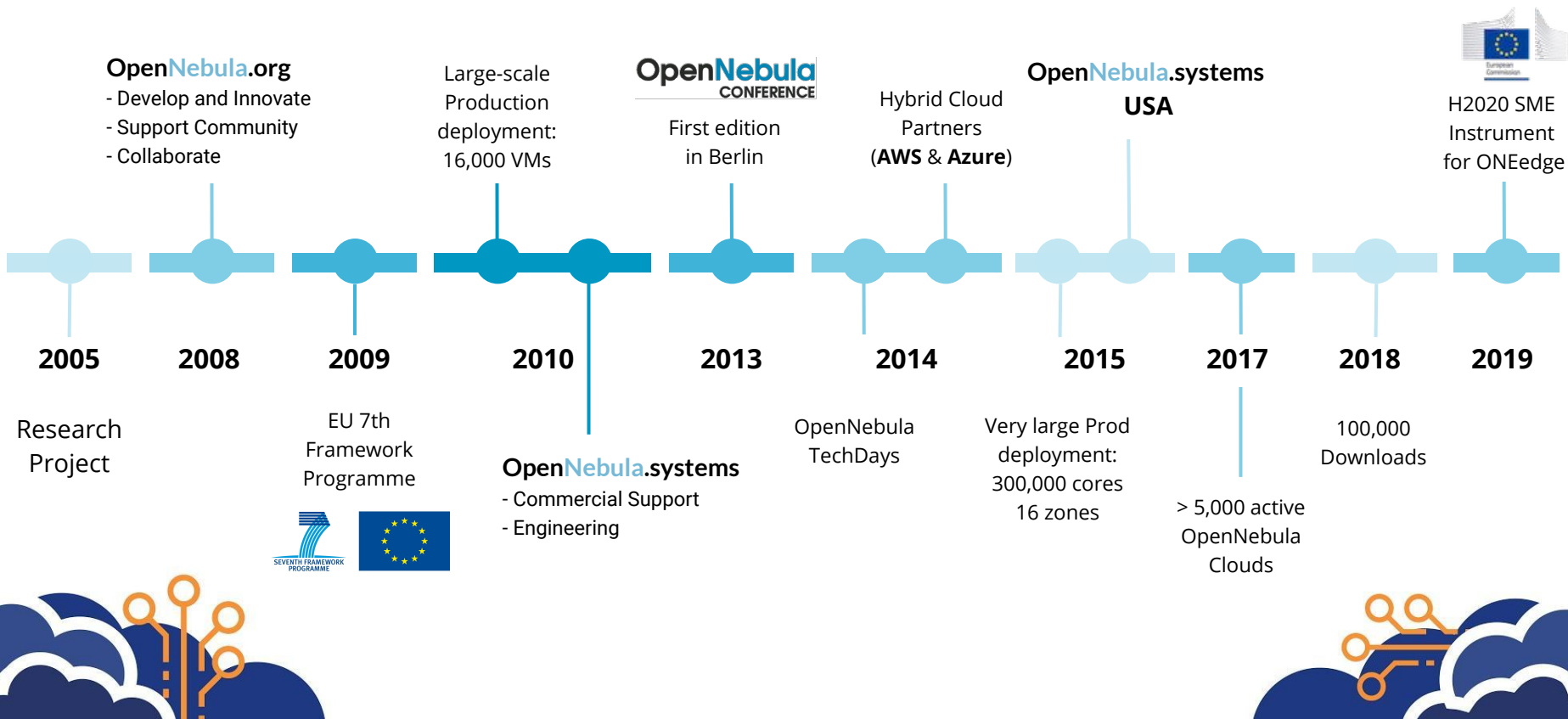
Next Generation Edge Cloud Platform

Build & Manage an On-Demand Edge Cloud
Using Resources from Bare-Metal Providers



OpenNebula Timeline

A pioneering open source technology



LINBIT



Edge Computing

Not just a *buzzword*, but a new real paradigm and a technological revolution



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23 Sep 2020

Worldwide Spending on Edge Computing Will Reach \$250 Billion in 2024, According to a New IDC Spending Guide



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EDGE COMPUTING INVESTMENT BY NETWORK OPERATORS TO HIT \$8.3 BILLION BY 2025; DRIVEN BY 5G INFRASTRUCTURE UPGRADES

Significant Investment Growth of 200% over the Next 5 Years

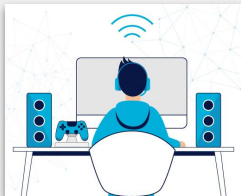
Hampshire, UK - 15th December 2020: A new study by [Juniper Research](#) has found that network operator spend on MEC (Multi-access Edge Computing) will grow from \$2.7 billion in 2020, to \$8.3 billion in 2025, as operators invest heavily in upgrading network capacities and infrastructure to support the increased data generated by 5G networks.

LFEDGE

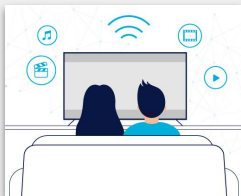
STATE OF THE
EDGE

Edge Computing

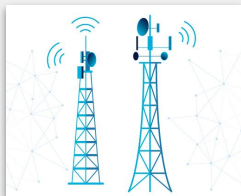
Not just a *buzzword*, but a new real paradigm and a technological revolution



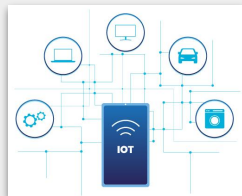
Gaming



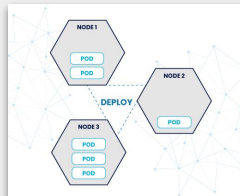
OTT & Broadcasting



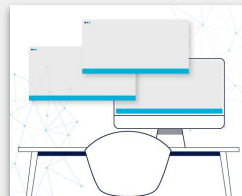
5G Applications



Internet of Things



Smart Cities



Virtual Desktop



Low- and Ultra-Low-Latency Applications



Improve User Experience



Expanded Service Availability



Reduce Data Transfers and Security Risks



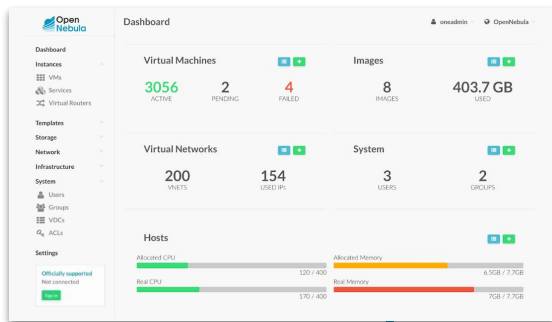
Reduce Vendor Dependency



Foster Local Cloud Provider Ecosystem

Edge Computing

Not just a *buzzword*, but a new real paradigm and a technological revolution



VMs



Containers



Kubernetes



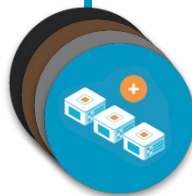
Core Data Center



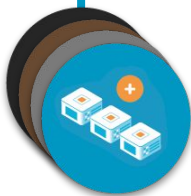
Public Cloud



Public Edge



5G Edge



On-Premise Edge





What's New in OpenNebula 6.0 "Mutara"



What is OpenNebula?

The open source **Cloud & Edge Computing Platform** bringing real freedom to your Enterprise Cloud 🚀

Virtual Machines



Application Containers



Kubernetes Clusters



Virtual Infrastructure Management, Cloud Management Provisioning & Cloud Federation



CORE DATA CENTER



PUBLIC CLOUD

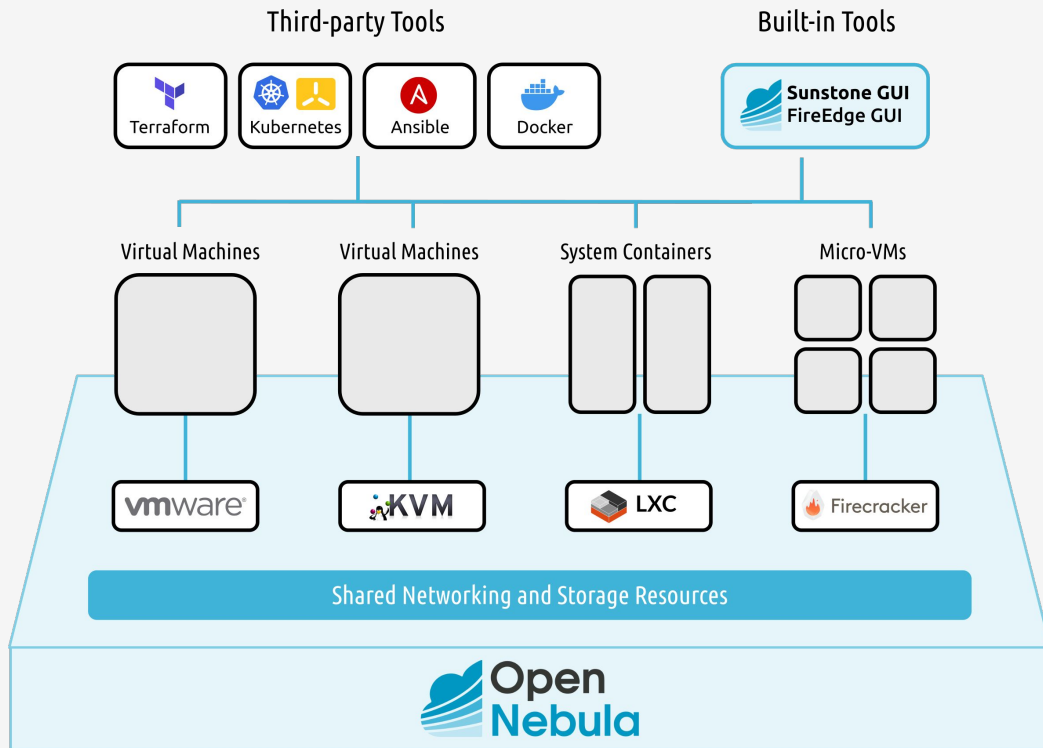


EDGE

- ✓ Avoids "Vendor Lock-in"
- ✓ Minimizes complexity
- ✓ Reduces resource consumption
- ✓ Slashes operating costs

What is OpenNebula?

A unique combination of Virtualization & Container technologies



- ✓ **Multi-Tenancy**
- ✓ **Self-Service**
- ✓ **Elasticity**
- ✓ **Multi-Tier Apps**
- ✓ **High Availability**
- ✓ **Federation**
- ✓ **Provisioning**
- ✓ **Multi-Cloud**
- ✓ **VMs + Containers**

OpenNebula 6.0 “Mutara”

A quick overview of Its Main New Features



Clusters as a Service



Edge Cloud Architecture



**Enhanced Docker and
Kubernetes Support**



FireEdge WebUI



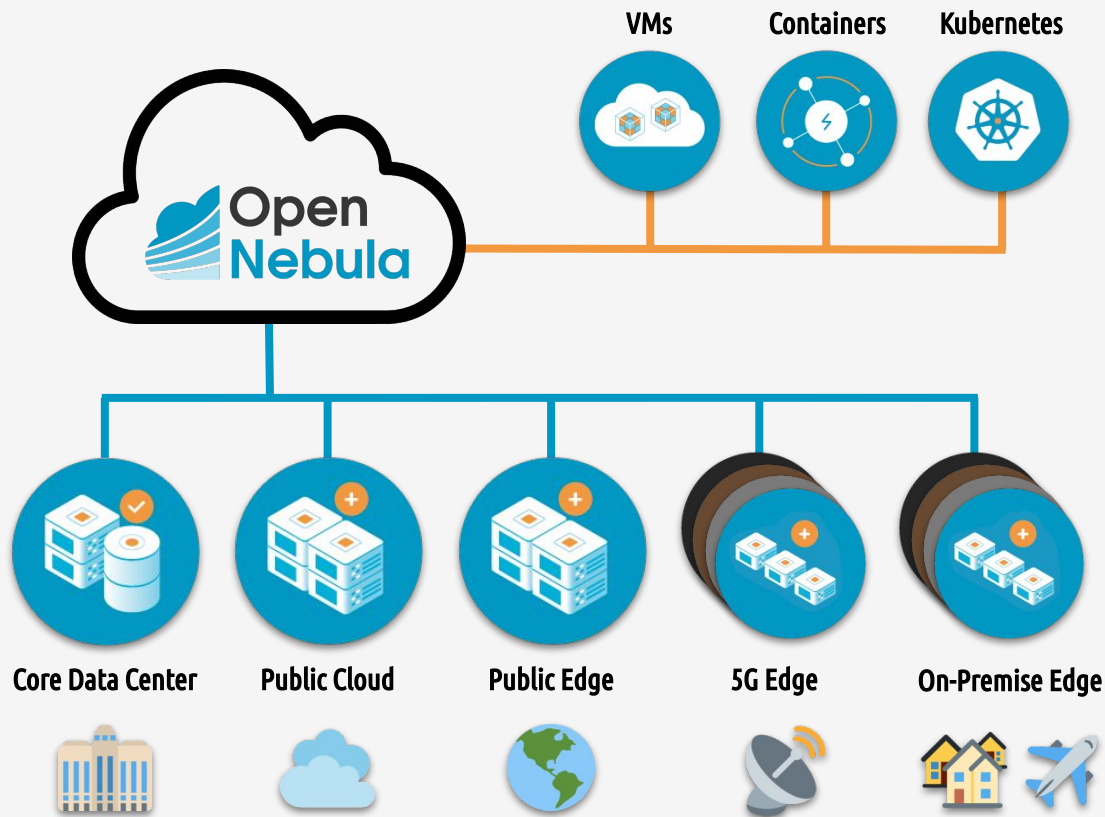
Revamped OneFlow



Backups

Cluster as a Service

A powerful solution to expand your Multi-Cloud to the Edge



ANY APPLICATION

Combine application containers with Virtual Machines and Kubernetes clusters.



ANY INFRASTRUCTURE

Expand your Enterprise Cloud by unlocking the power of a true hybrid, edge and multi-cloud architecture.



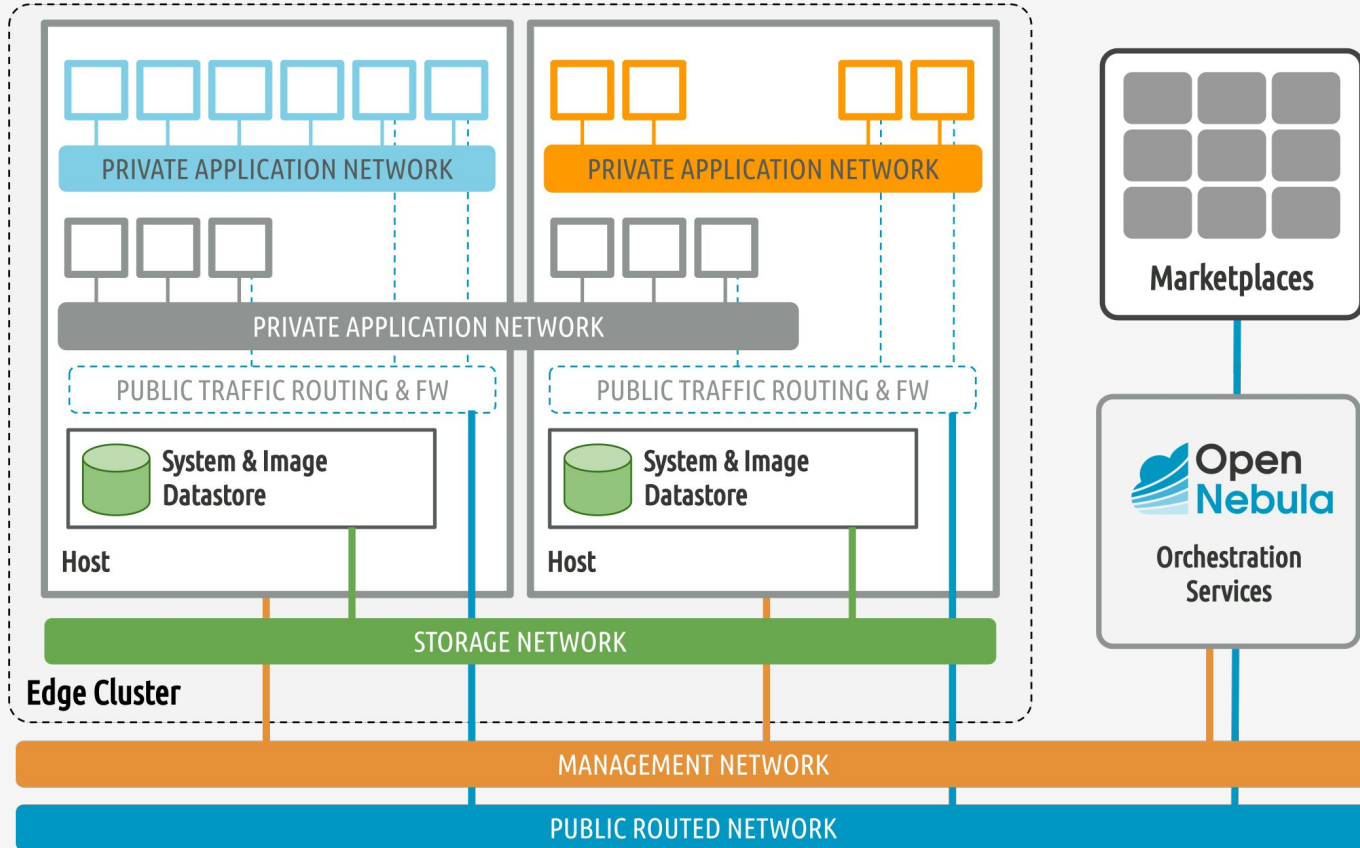
ANY TIME

Add new resources dynamically to meet peaks in demand, or fault tolerance and latency requirements.

<https://opennebula.io/edge-cloud>

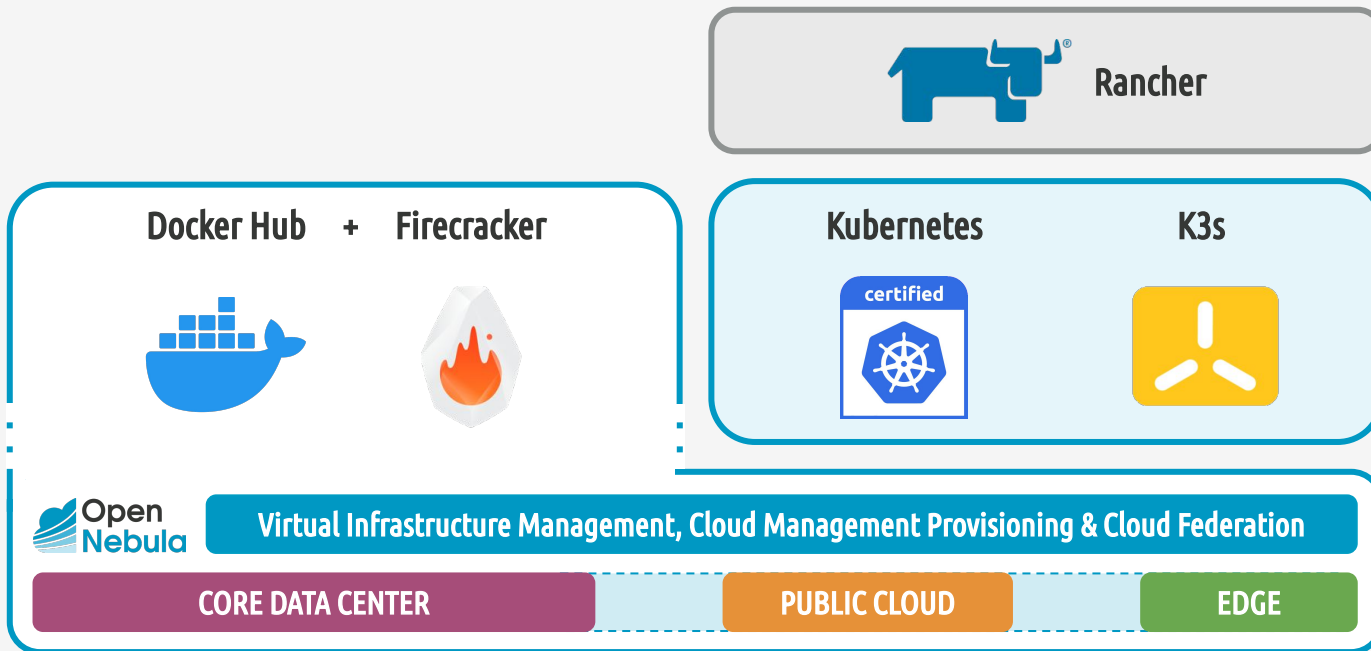
Edge Cloud Architecture

What's Inside?



Docker & Kubernetes Support

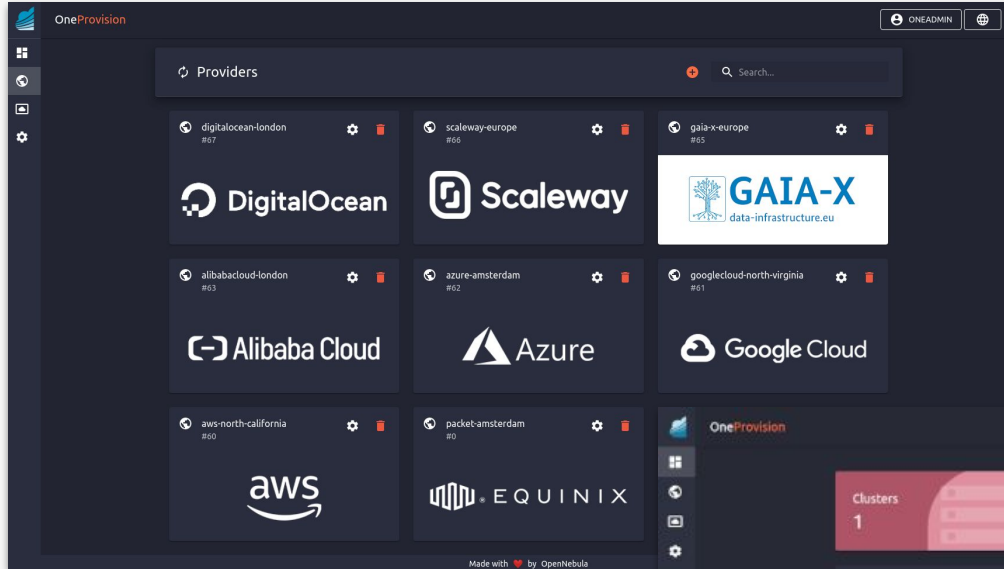
New support for **Dockerfiles** and a revamped virtual appliance with our **CNCF-certified Kubernetes**



<https://opennebula.io/mastering-containers>

FireEdge WebUI

Easily provision and manage OpenNebula edge clusters on **public cloud and edge providers**



Revamped OneFlow

Manage dynamic multi-tier services based on VMs and containers

←

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Update

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Info

Roles

Log

Actions

+ Scale

▶

⏸

🔌

🔄

🗑️

Period ?

Number ?

Name	State	Cardinality	VM Template	Parents
worker	RUNNING	0	120	-
frontend	RUNNING	0	127	-

100 Showing 1 to 2 of 2 entries

Previous 1 Next

Role - worker

Information

Shutdown action	-	Cooldown	300	Min VMs	-	Max VMs	-
-----------------	---	----------	-----	---------	---	---------	---

Virtual Machines

▶

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🔄



📄














🗑️


Backups


Save the data of your VMs in a remote storage location set up as a private marketplace


 VM 423 alpine-423 POWEROFF


 oneadmin  OpenNebula


            


 Info


 Capacity


 Storage


 Network


 Snapshots


 Placement

 Actions

 Conf

 Template

 Log



ID423

Namealpine-423

StatePOWEROFF

LCM StateLCM_INIT

Hostseal

IP

Start time18:00:04 18/02/2021

Deploy ID3f38398c-6a7f-44c2-a276-30dc7d306292



Rescheduleno

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	

Backups

Frequency	86400
Marketplace ID	100
Backup last copy time	17:58:08 22/02/2021
Backup marketplace app IDs	778,779

OpenNebula 6.0 “Mutara”

But there are many more **New Features...**

https://docs.opennebula.io/6.0/intro_release_notes/



Support for **VMware vSphere 7**.



Many improvements in **Sunstone**, including VMRC console access for VMware VMs and Guacamole VNC/SSH & RDP.



New driver for **LXC system containers**.



Additional VM tuning parameters for **KVM**.



Containerized deployment of the OpenNebula Front-end.

Discover OpenNebula

Build your OpenNebula cloud in 5 minutes!

Try the New OpenNebula 6.0 “Mutara”

Deploy a fully-functional OpenNebula cloud for product evaluation in just a few minutes!



*Deploy a front-end
on VMware or KVM*



*Automatically deploy an
OpenNebula edge cluster
on AWS*



*Learn the basics of
cloud operations*



*Execute and manage
containers, VMs and
Kubernetes clusters*

<https://opennebula.io/mutara/>



DEMONSTRATION



4 Deploy Application

Instantiate a **Wordpress service** on the remote location.

3 Access Marketplace

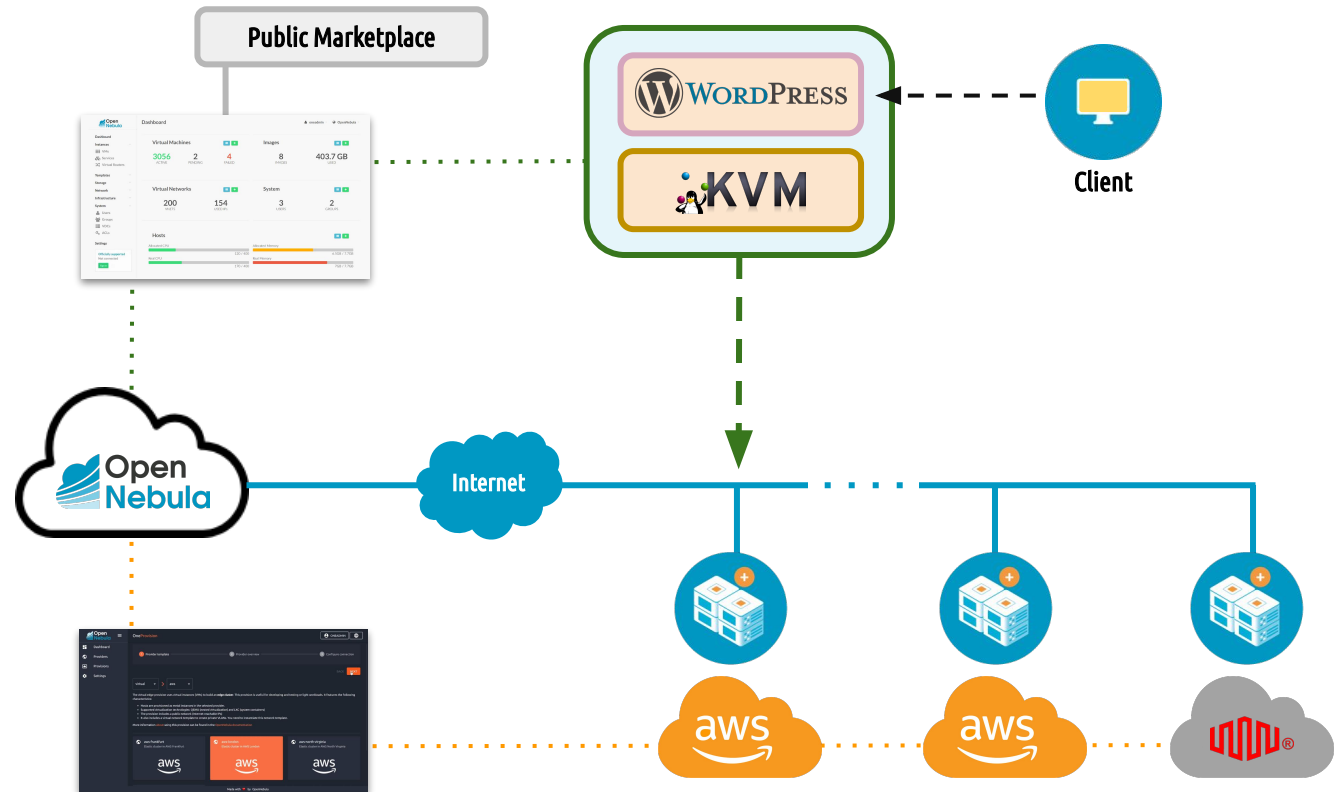
Download a **virtual appliance** from the OpenNebula Marketplace.

2 Provisioning

Provision an **OpenNebula Edge Cluster** on AWS.

1 Add Provider

Use FireEdge to add **AWS** as a **Provider** to OpenNebula.



aws-cluster

#7



INFO



DATASTORES



NETWORKS



HOSTS



LOG



3.9.118.86

QEMU

#3



0 / 200 (0%)

0 KB / 4 GB (0%)



35.178.135.209

QEMU

#4



0 / 200 (0%)

0 KB / 4 GB (0%)



18.130.239.12

QEMU

#5



0 / 200 (0%)

0 KB / 4 GB (0%)

Q&A



Questions in chat





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