The OpenNebula alternative to Kubernetes for Containers-as-a-Service
About Me

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What is OpenNebula?
The open source Cloud Management Platform developed for the Enterprise.

Third-party Tools:
- Terraform
- Kubernetes
- Ansible
- Docker

Built-in Tools:
- Sunstone

Virtual Machines:
- VMware
- KVM
- LXD
- Firecracker

System Containers

Micro-VMs

Shared Networking and Storage Resources
How is OpenNebula Being Used?

Say *hello* to our new **True Hybrid Cloud Architecture**

**ANY APPLICATION**
Combine application containers from Docker Hub with traditional Virtual Machine workloads.

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

**ANY TIME**
Add new clusters dynamically to meet peaks in demand, or fault tolerance and latency requirements.

[https://opennebula.io/true-hybrid](https://opennebula.io/true-hybrid)
Mastering Containers

Container Orchestration with OpenNebula

Docker Hub + Firecracker

Docker Machine

Kubernetes

K3s

Rancher

Virtual Infrastructure Management, Cloud Management Provisioning & Cloud Federation

ON-PREMISES  PUBLIC  EDGE

https://opennebula.io/mastering-containers
# Docker Hub

Secure and Fast MicroVMs for Container Orchestration

## Apps

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Showing 1 to 10 of 233 entries

233 TOTAL
AWS Firecracker
Secure and Fast MicroVMs for Container Orchestration

Orchestration Layer
- Storage Drivers
- Network Drivers
- Monitor Drivers
- VMM Drivers

- File-based Storage
- Linux Bridge Networking
- VNC Terminal Server
- Health & Monitoring

VMM - Firecracker
VMM - Qemu
OS - KVM

Data center
Edge resources

🚀 Orchestrating VMs on-premise and on hybrid/edge locations.
🚀 Seamlessly integrate multiple workloads.
🚀 Seamlessly integrate your network stack/storage.
🚀 Create a multi-tenancy environment based on Firecracker.
🚀 Architect multi-VM applications with the OneFlow tool.
Deploying Container-based Apps

The Container Revolution

VIRTUAL MACHINE
- App
- Bin/Libs
- Guest OS
- Hypervisor
- Operating System

CONTAINER
- App
- Bin/Libs
- Container Runtime
- Operating System

BARE-METAL SERVER

BARE-METAL SERVER
Deploying Container-based Apps

Microservice Architecture: Multi-Container Applications (Kubernetes)

Kubernetes Dashboard UI

Pod Networks (Calico / Canal / Flannel / Weave Net)
Deploying Container-based Apps

Multi-Tenancy & Security: Managed Kubernetes Clusters
Deploying Container-based Apps

OpenNebula’s Native Container Orchestration Model

microVM Virtual Networks (IPv4 / IPv6 / Dual Stack)

Containers-as-a-Service

Multi-Tenancy & VDCs
Scheduling Policies
Multi-microVM Apps
Event Hooks & API

Public Cloud / Edge Resources
On-Premises / Hosted
Today's Demo
A View From the Eagle's Eye
Mastering Containers

Give it a try!

Deploying Container-Based Applications with OpenNebula
ARTICLE

OpenNebula vs Kubernetes: Comparing Two Container Orchestration Models
ARTICLE

Mastering Containers with OpenNebula
WHITE PAPER

miniONE
Install a single-node LXD/KVM/FC Cloud
minione.opennebula.io

OpenNebula 5.12
Try “Firework”, our latest release!
opennebula.io/firework
This work has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement ONEedge 880412

Next Generation Edge Cloud Platform

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