

# DATASHEET

## Firecracker Cloud

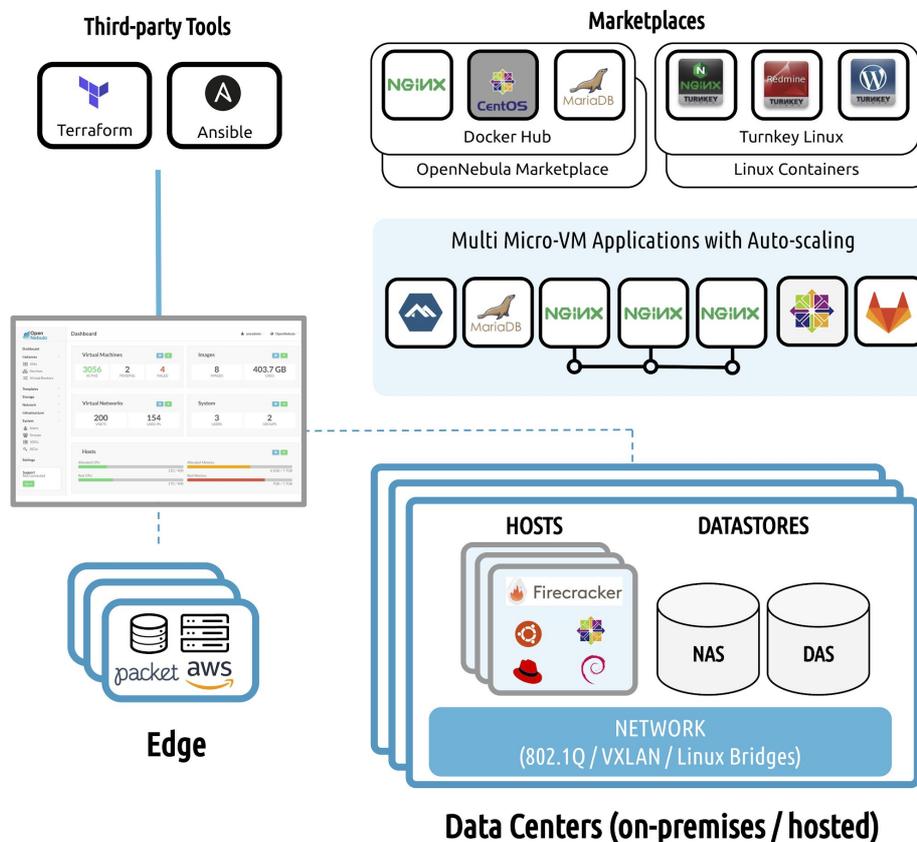


### AT A GLANCE

Firecracker is a new hypervisor, widely used by AWS as part of its Fargate and Lambda services, specialized for creating and managing secure, multi-tenant container and function-based services. It enables to deploy workloads in lightweight VMs, called micro-VMs, which provide enhanced security and workload isolation over traditional VMs, while enabling the speed and resource efficiency of containers. The integration of OpenNebula with Firecracker builds a next-generation platform for on-premises serverless computing.

### KEY BENEFITS

- Seamless integration with container marketplaces like Docker Hub.
- Direct execution of Docker images on micro-VMs and composition of containers with auto-scaling.
- Multi-tenant, self-service cloud provisioning including virtual data centers, data center federation and hybrid cloud computing to connect in-house infrastructures with public clouds.
- Mixed hypervisor environments with KVM and VMware.



### SYSTEM REQUIREMENTS

- Front-end: 2 CPU (4 cores) with 8GB memory, 200GB disk and 2 NICs
- Hypervisors: Depends on the expected workload, recommended to have at least 1GB per core



TRY IT NOW! Go to <https://minione.opennebula.io>

In just five minutes, use miniONE to deploy a fully functional implementation to evaluate just how simple OpenNebula is.



More details about OpenNebula and its features at [OpenNebula.io](https://OpenNebula.io)

## On-Demand Self-Service Provisioning

<b>Application Containers</b>	<input type="checkbox"/> Full support for Docker images micro-VMs for enhanced security and workload isolation over traditional VMs, while enabling the speed and resource efficiency of containers
<b>Service Auto-scaling</b>	<input type="checkbox"/> Define and manage services as a group of related micro-VM containers, including their interconnection networks and elasticity rules
<b>Service Insight</b>	<input type="checkbox"/> Monitor service-specific performance metrics and set elasticity rules based on them
<b>Private Marketplaces</b>	<input type="checkbox"/> Build your own private marketplaces based on S3 and HTTP protocols
<b>Public Marketplaces</b>	<input type="checkbox"/> Integration with Docker Hub, with OpenNebula Public Marketplace with pre-built and certified appliances with popular OSS components and OS like k8s, WordPress, Gitlab, Centos or Ubuntu, and with LXD containers popular marketplaces: linuxcontainers.com and Turnkey Linux
<b>APIs</b>	<input type="checkbox"/> Ruby, Python, Go and JAVA or XML-RPC
<b>CLI</b>	<input type="checkbox"/> Fully featured UNIX-like command line tools
<b>GUI</b>	<input type="checkbox"/> Sunstone, a modern and simple Web-UI for admins and advanced users. Cloud View, a simplified provision portal for end users. Remote access through VNC is integrated in the GUI's

## Resource Management

<b>Authentication</b>	<input type="checkbox"/> Built-in password-based, Active Directory, SSH, X509,LDAP, login tokens and 2FA
<b>Multi-tenancy</b>	<input type="checkbox"/> ACLs, users, groups, resource UNIX-like permissions and VDCs
<b>Capacity Management</b>	<input type="checkbox"/> Limit usage with user/group quotas. Fine-tune container allocation with dynamic placement constraints and affinity rules. Automatically schedule virtual networks and datastores.
<b>Observability</b>	<input type="checkbox"/> Monitoring, accounting, showback and auditing/traceability
<b>Networking</b>	<input type="checkbox"/> Virtual routers, NIC hotplugging, security groups and support for IPv6 and IPAM modules
<b>Host</b>	<input type="checkbox"/> CPU pinning and LXD profiles
<b>Storage</b>	<input type="checkbox"/> Disk resizing, hotplugging, persistency. Compatibility with multiple partition images.
<b>Automation</b>	<input type="checkbox"/> Hook system for tailoring and logging, programmable container operations, and context to further customize containers based on user input

## Cloud Architectures

<b>High Availability</b>	<input type="checkbox"/> OpenNebula components HA-based on RAFT consensus and container/host failover
<b>Elastic Private</b>	<input type="checkbox"/> Resource provisioning on bare-metal AWS and Packet
<b>Edge Distributed</b>	<input type="checkbox"/> Dynamic geo-distributed private clouds on public cloud resources
<b>Federated Cloud</b>	<input type="checkbox"/> Federation of multiple OpenNebula zones for scalability, isolation or multiple-site support
<b>Mixed Hypervisor</b>	<input type="checkbox"/> Support for multi-hypervisor environments that use VMware, KVM, LXD and Firecracker