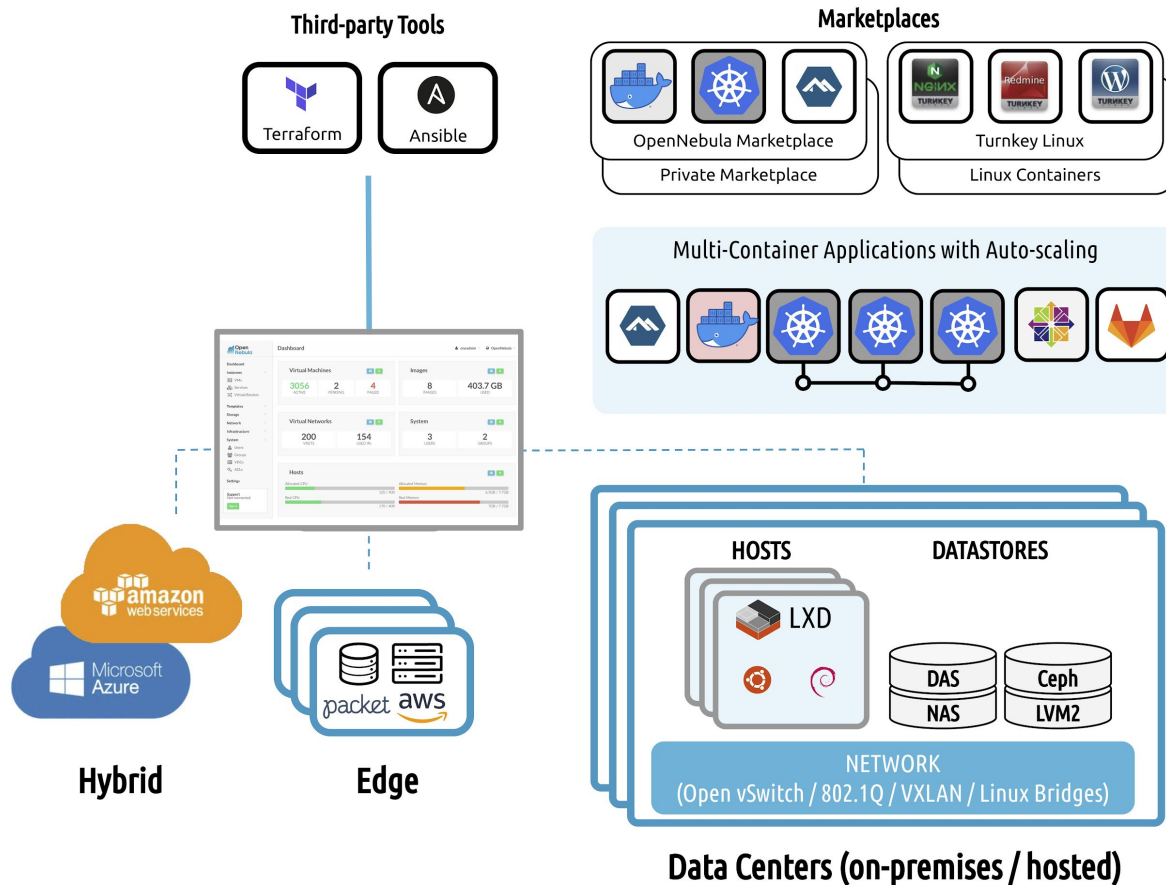# DATASHEET
LXD Cloud

AT A GLANCE

LXD has recently become the next-generation system container manager in Linux. OpenNebula complements the lack of automation in LXD as a standalone hypervisor and opens up a new set of use cases, especially for large scale distributed deployments and cloud provisioning environments. You can build a LXD cloud infrastructure fully compatible with your KVM environment using the same images and the same network stack and storage backends.

KEY BENEFITS

- Advanced features for **capacity management**, **resource optimisation**, **business continuity** and **high availability**.

- **Multi-tenant**, **cloud self-service provisioning** including **virtual data centers**, data center **federation** and **hybrid** cloud computing to connect in-house infrastructures with public clouds.

- **Mixed hypervisor environments** with Firecracker, KVM and VMware.

Third-party Tools

Marketplaces

OpenNebula Marketplace — Private Marketplace

Turnkey Linux — Linux Containers

Multi-Container Applications with Auto-scaling

Hybrid

Edge

HOSTS   **DATASTORES**

LXD

DAS   Ceph
NAS   LVM2

NETWORK
(Open vSwitch / 802.1Q / VXLAN / Linux Bridges)

Data Centers (on-premises / hosted)

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

SCALABILITY

- Front-end: Tested on 2,500 servers

- Hypervisor: Tested with 500 VMs

- Horizontally scale your cloud by adding new zones within a federated deployment

miniONE

TRY IT NOW!
http://miniONE.opennebula.io

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

ubuntu
Software partner

More details about OpenNebula and its features at OpenNebula.io

OpenNebula Specs on LXD

On-Demand Self-Service Provisioning

Application Containers	❏ Full support for Docker using lxd nested virtualization and Kubernetes for container orchestration
Service Auto-scaling	❏ Define and manage services as a group of related LXD containers, including their interconnection networks and elasticity rules
Service Insight	❏ Monitor service-specific performance metrics and set elasticity rules based on them
Private Marketplaces	❏ Build your own private marketplaces based on S3 and HTTP protocols
Public Marketplaces	❏ Integration 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
APIs	❏ Ruby, Python, Go and JAVA or XML-RPC
CLI	❏ Fully featured UNIX-like command line tools
GUI	❏ 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

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

Cloud Architectures

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