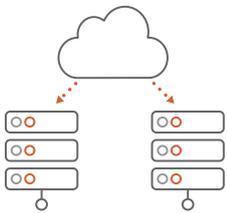


# MicroCloud

Deploy your own cloud in minutes



## What is a MicroCloud?

MicroClouds are small-scale clouds optimised for repeatable and reliable remote deployments. They consist of low-footprint clusters of compute nodes with distributed storage and secure networking. They can serve as small-scale private clouds, or as edge clouds distributed across a number of locations.



### Automated deployment

MicroClouds are built with simplicity and automation in mind. Configure computing services, storage and networking with one command with no advanced skills required.



### Secure with hassle-free updates

Easy maintenance and hassle-free updates. MicroCloud components are built with strict confinement for increased security, with over-the-air transactional updates that preserve data and roll back on errors automatically.



### Suitable for even commodity hardware

MicroClouds are lightweight and can run even on simple, inexpensive hardware. It requires a minimum of three machines, each with at least 8 GiB of RAM, and additional disks depending on your storage requirements.

## Common use cases

### Small-scale private cloud

- A cost-effective alternative to VMware vSphere, Hyper-V and Proxmox Virtual Environment.
- Simple to deploy and operate.
- Easy to scale as your needs grow.

### Edge computing at a large scale

- Scalable and low-latency HA cluster for critical applications.
- Lightweight to run on small servers or low-cost small devices.
- Low-touch, self-healing, little to no human interaction needed.

## All the benefits of a cloud, but localised

### Efficient compute with LXD

MicroCloud uses LXD to manage virtual machines and system containers that offer near bare-metal performance. Instances are image-based with available images for a large number of Linux distributions, as well as Windows VMs.

### Distributed storage with MicroCeph

MicroCeph is a lightweight way to deploy a Ceph cluster using just a few commands, resulting in reliable and resilient distributed storage. RBD, CephFS and RGW are supported, along with full disk encryption and upgrades.

### Secure networking with MicroOVN

MicroOVN is snap-deployed OVN with built-in clustering. It can provide virtual network abstractions, such as virtual L2 and L3 overlays, security groups, DHCP and other advanced networking services.

## Feature overview

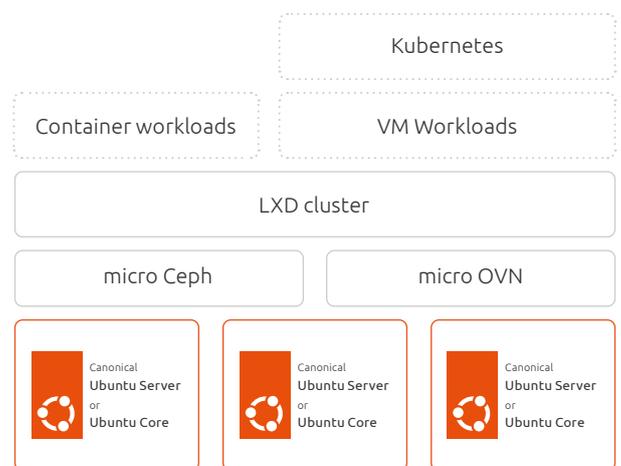
- High-availability (HA) by default.
- Run lightweight system containers, traditional VMs, or application containers through Microk8s.
- CLI, REST API, Web UI, and third-party integrations for management.
- Advanced networking support (OVN, SR-IOV, hardware acceleration support, and more).
- Advanced resource control for CPU, memory, network I/O, kernel resources, etc.
- Hardware passthrough for USB, GPU/vGPU, block devices, NICs, disks and paths.
- Live migration and stateful snapshotting.
- Auto-healing for instances on Ceph.
- Instance metrics and event logs with Prometheus and Grafana.
- Authentication through TLS or OpenID Connect (OIDC), authorisation using OpenFGA Relationship-Based Access Control (ReBAC) which allows fine-grained access control.

## How does it work?

All MicroCloud components are based on snaps - app packages that are easy to install, secure, cross-platform and dependency-free.

In addition to the three main components, a MicroCloud snap is used to orchestrate and configure them across a set of servers. When initialised, MicroCloud will auto-detect all the servers in the network and drive LXD, MicroCeph and MicroOVN snaps to configure a cluster.

[Try it yourself](#) today.



### MicroCloud design and delivery

Canonical offers consulting packages tailored to customer needs, including design workshops and MicroCloud delivery on reference architecture and certified hardware. [Contact our team](#) for more information.



### Commercial support for MicroCloud

Canonical provides commercial support for MicroCloud under the Ubuntu Pro (full or Infra-only) subscription. [Ubuntu Pro](#) is the most comprehensive subscription for open source security, support and compliance.

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## Contact us

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