ubuntu

Open source NFVI and MANO

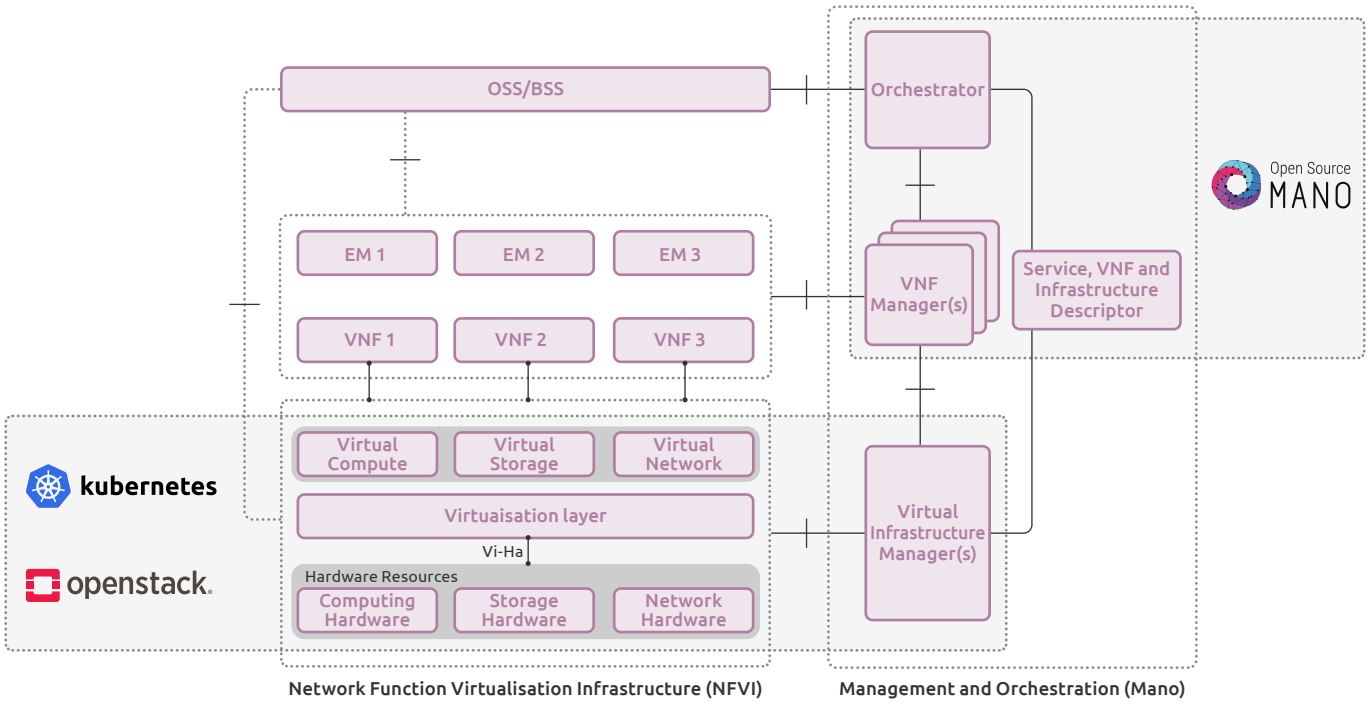
The entire NFV stack based on established open source technologies. Cost-effective, carrier-grade, supported, fully-managed.

Trusted NFV service provider

Ubuntu powers the entire infrastructure of leading global service providers, including tier-1 carriers. As an established leader in the telco industry, Canonical provides products and services to build and operate the entire NFV stack. Those include NFVI, MANO, edge solutions, enterprise support, fully-managed services and VNF onboarding. All designed to ensure TCO reduction.

Canonical's NFV stack is aligned with ETSI NFV and based on established open source technologies: OpenStack, Kubernetes and OSM. The entire stack is easily deployable, maintainable and upgradable. Not only the initial deployment, but also day-2 operations and all lifecycle management tasks are fully automated. This allows telcos to operate even very complex NFV environments with the minimal required headcount.

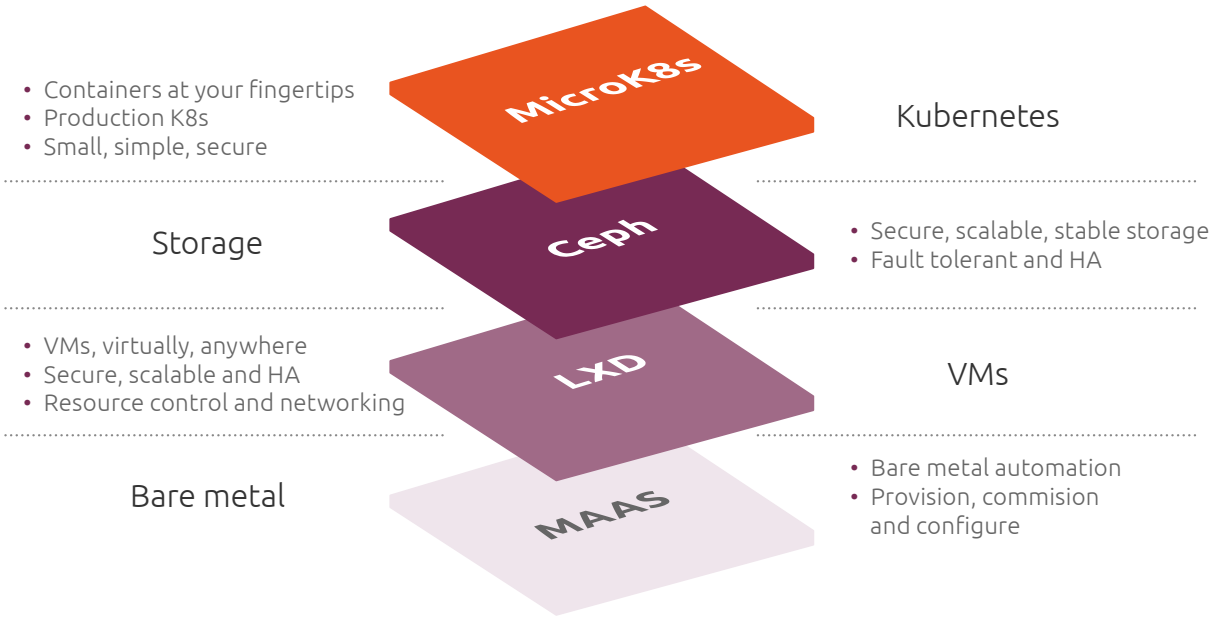
Moreover, service providers benefit from the highest level of security provided by the most secure enterprise Linux distribution - Ubuntu. In addition to security, a variety of technology choices improve flexibility when making hardware choices. Pluggable performance extensions enable fast networking for both traditional and cloud-native workloads. All of that to meet the requirements of one of the most demanding industries on the market.



Maximum CapEx and OpEx efficiency

Canonical's mission is to ensure maximum CapEx and OpEx efficiency for service providers implementing NFV solutions. Our reference architecture for NFVI includes selected hardware choices, ensuring the best possible performance at the lowest possible price. As all our tools are open source, there is no expensive license that has to be purchased upfront.

Since the biggest portion of the OpEx is generated by the cost of operations, Canonical provides full automation for OpenStack, Kubernetes, OSM and deployed VNFs to minimise the operations overhead. All of that makes Canonical's NFV stack cost-effective and ensures ROI on NFV transformation.



Near and far edge

In response to increasing demands for high bandwidth and low latency, as required by streaming media, AI/ML, AR/VR and other edge NFV use cases, Canonical provides comprehensive solutions for both near and far edge.

Micro clouds

Canonical's micro cloud, consisting of MAAS, LXD, Ceph and MicroK8s allows telcos to run and remotely manage both physical, virtualised and containerised workloads in a fully automated way with a minimal footprint. Lightweight, secure and robust, Canonical's micro cloud is optimised for workloads aligned with RAN and MEC technologies.

Devices

On the far edge, where remote management capabilities are limited and security becomes even more important, Canonical provides Ubuntu Core - an embedded version of the Ubuntu operating system to ensure maximum security. Ubuntu Core is fully hardened and designed to receive automated updates remotely to ensure robust operations at the edge. By using a minimal hardware footprint, it supports both x86 and ARM architectures. Ubuntu Core can be provisioned either with LXD or MicroK8s, providing the ability to run virtualised or containerised workloads at the edge.

Deployable, maintainable, upgradable

- Model-driven deployment and operations
- Full automation at day-1, day-2 and day-N
- Smooth upgrades to new upstream releases
- Full support for each each upstream release
- Latest versions available quickly
- Integrated logging, monitoring and alerting stack
- IaC approach and CI/CD integration

Stable and secure

- Up to 5 years of support and 10 years of security patches
- Predictable release cadence and upgrade path
- Data encryption on the fly and at rest
- OS, OpenStack and Kubernetes hardening
- Containerised control plane
- Kernel livepatch service
- CIS and DISA benchmarks

Fast networking

- 100 Gbps networking
- Hardware offloading with OVS
- SR-IOV, DPDK, CPU pinning, NUMA topology and hugepages
- PCI and GPU passthrough

Flexible technology choices

- **SDN:** OVN, OVS, Juniper Contrail, Cisco ACI
- **Storage:** Ceph or iSCSI
- **Hypervisor:** KVM
- **Container engine:** containerd

Open source

- ETSI NFV compliant
- Based on pure upstream technologies
- Member of Linux, OpenStack, Kubernetes and OSM communities

Canonical's services for telcos

Design and delivery

Fixed-price design and delivery package for both NFVI and MANO, including hardware guidance, design workshops and on-perm NFV stack deployment.

Enterprise support

Full-stack commercial support including phone and ticket support, production-grade SLAs, Landscape systems management tool, extended security and more.

Fully-managed services

Fully-managed NFVI and MANO, including infrastructure monitoring and maintenance, incident and problem resolution, day-2 operations and upgrades.

VNF onboarding

The onboarding of your VNFs on the OSM platform. 5G core, vEPC, vIMS, vCPE, vPE and others.

Training courses

Professional training courses for OpenStack, Kubernetes, Ceph, Ubuntu Server and more.

Our telco customers

AT&T

Bell

Charter COMMUNICATIONS

LIBERTY GLOBAL

Deutsche Telekom

BT

Telefónica

TELE2

NTT docomo

verizon

NTT

PCCW

Open initiatives membership

ETSI

OPNFV

CNTT

LF NETWORKING

Open Source MANO

CLOUD NATIVE COMPUTING FOUNDATION

kubernetes

openstack.

LINUX.ORG

Contact us

For more information about Canonical's solutions for telecommunications visit ubuntu.com/telco or call direct: (EMEA) +44 203 656 5291 (US) +1 737 204 0291.

CANONICAL