

# Kubernetes for the enterprise

Kubernetes is an open-source infrastructure for automating deployment, scaling, and management of containerized applications. Originally built by Google, it is currently maintained by the Cloud Native Computing Foundation.

## A pure 'upstream' Kubernetes, with security updates

Canonical Kubernetes, the official distribution of Kubernetes on Ubuntu delivers a pure 'upstream' version of Kubernetes for organisations to use privately. We work directly with Google to align with Google's GKE offering.

Like Ubuntu itself, Canonical Kubernetes is free to use, and Canonical backs it up with enterprise support, consulting, and management services. Canonical makes it secure, and easy to deploy, operate, and upgrade.

Whether you want a dev-test cluster on VMware or a production AI / ML cluster on bare-metal GPUs, Ubuntu is your fast path to resilient Kubernetes for the enterprise.

## Multi-cloud and on-premise private Kubernetes

Canonical Kubernetes works on AWS, Google Cloud, Azure and Oracle Cloud as well as private infrastructure from bare-metal racks to VMware and OpenStack. Ubuntu is the most widely used platform for container operations, and Canonical offers the largest ecosystem of Kubernetes partners, solutions and integration options.

## Automated, reusable, scalable, secure

With full automation for both deployment and ongoing operations, Canonical Kubernetes gives you an agile and enterprise-supported Kubernetes container infrastructure. Automation keeps costs down and empowers teams to operate their own standalone Kubernetes clusters per project. Give each team the ability to evolve at their own pace, avoiding institutional gridlock. Free your developers to focus on what matters most: your business workloads.

## Upgrades, as soon as you want them

Kubernetes is moving fast with quarterly releases. You want to integrate it with your environment, but still preserve the ability to get the newest features. Canonical Kubernetes has a flexible architecture and guarantees the ability to upgrade. We ensure you'll be able to move to new versions of Kubernetes within a week of their upstream release. Avoid 'homegrown snowflakes' for consistent quality across multiple deployments in multiple clouds or teams.

## Managed Kubernetes

Canonical offers a remote-managed Kubernetes service, on your choice of cloud or data center. Optionally, for compliance purposes, you can have use of staff resident solely in the US or Europe. This service enables your teams to focus on consumption of Kubernetes as a service on-premise. As a build-operate-transfer offering you can ask to take the keys at any time. The fastest path to production.

## Spotlight on Canonical Kubernetes

- Built from upstream source, Canonical Kubernetes maximises compatibility with Google GKE
- Security updates by Canonical, makers of Ubuntu, cover everything from kernel to Kubernetes
- Upgrades guaranteed, giving you freedom to consume the latest Kubernetes at your own pace
- Canonical Kubernetes is secure, due to the robust encryption with TLS for all control plane components
- Full confinement using kernel-level mandatory access controls
- Automatic acceleration of GPU-optimised workloads such as AI and transcoding
- Wide variety of storage and networking options, including Ceph, Flannel, Calico, and cloud native
- Consulting for custom storage, network, monitoring or other integration
- Deploy to AWS, Azure, Google Cloud, Oracle Cloud, VMware, Canonical OpenStack, bare metal, and LXD
- Training, certification, support and remote management available

# Canonical Kubernetes packages

Canonical has two Kubernetes offerings, one to get you up and running quickly with a smaller setup and a predefined architecture and another that includes bare-metal environments or custom integrations, with loads of

optional add ons to customise Kubernetes to your exact requirements. Every Kubernetes we build is future-proof with automated upgrades to newer versions on demand.

## Kubernetes Explorer

Empower your devops with a reference architecture VM-based Kubernetes deployment together with on-site training and consulting.

**What's included:**

- High availability Kubernetes, deployed on cloud or VMware
- Reference architecture
- 8 hours hands-on, web-based training
- 30 days of phone support

## Kubernetes Discoverer

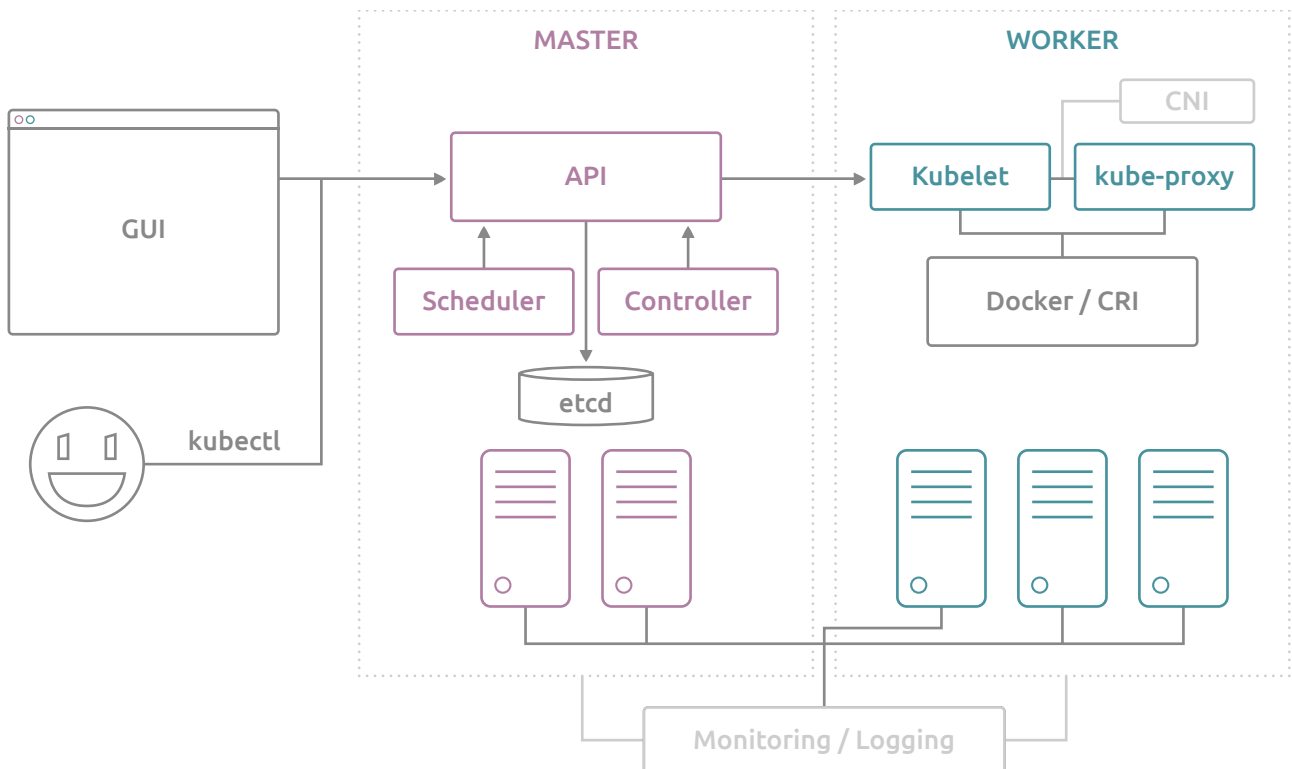
Maximise efficiency with a customized production grade Kubernetes architecture, built by Canonical's container experts and your team, together.

**What's included:**

- High availability Kubernetes, deployed on bare metal servers, cloud or VMware
- Custom Kubernetes architecture optimised for your workloads
- 4 days hands-on, in-person training
- Workload analysis covering web, AI/machine learning, blockchain, serverless and more
- Continuous Integration and Delivery (CI/CD) for one code repo
- 30 days of phone support

**Optional extras:**

- Full remote management of your Kubernetes clusters by Canonical
- Enterprise phone support for Kubernetes and Ubuntu



## Details and pricing

|                    | Kubernetes Explorer  | Kubernetes Discoverer   |
|--------------------|--|---|
|                    | \$15,000   | \$35,000  |
| Environments       | AWS, Azure, Google Cloud, Oracle Cloud, VMware, Canonical OpenStack  | Add bare metal  |
| Scale              | 5-200 nodes  | 5-2,000+ nodes  |
| Availability       | HA requires 9 nodes  | HA requires 9 nodes   |
| Storage            | VMware, Cloud block, Local, NFS  | Add Ceph, software-defined storage acceleration, custom integration of existing on-premises storage |
| Networking         | Nodeport, Flannel  | Add Calico, optional custom CNI SDN   |
| GPGPU acceleration | n/a  | Physical or virtual CUDA GPU's for machine learning and AI  |
| Authentication     | SAML, OAuth2 via Dex, RBAC   | Add Active Directory, LDAP  |
| Training           | Web video conference, 2 x 4-hour sessions  | On site, classroom style, 4 days in the same week   |
| Support            | 30 days 10x5 office hours phone support included<br>Optional ongoing enterprise support and operations from Canonical  |   |
| Upgrades           | Available within 7 days of upstream release  |   |
| Security           | Security patches for entire stack, from kernel to kubernetes<br>All CVEs and additional security improvements included |   |
| Docs               | Design overview, tenant onboarding plan, deployment guide  |   |
| Connectivity       | Internet access required   | Offline deployment possible   |
| QOS                | n/a  | CPU pinning, resource limits and quotas   |
| Architecture       | Reference  | Customised  |
| Monitoring         | Prometheus / ELK   | Custom monitoring integration possible  |

## Custom options

### Available for Kubernetes Explorer and Kubernetes Discoverer

|  |                          |  |
|--|--------------------------|--|
| Custom monitoring                                    | \$7,000                  | Integration with your preferred monitoring solution  |
| Architecture design                                  | \$20,000                 | One week on-site architecture consultation, in advance of deployment. Included in Kubernetes Discoverer package. Can be repeated for data-driven optimisation based on actual workloads. |
| Ongoing support, kernel livepatch, extended security | \$50-1,200 / node / year | Ubuntu Advantage plus Kubernetes, price depends on SLA and choice of virtual or physical machines.   |
| 24/7 remote ops                                      | \$4-\$12 / node / day    | Fully managed Kubernetes with 24/7 remote operations and uptime SLA. \$12 per physical node, \$4 per virtual node.   |
| Workload CI/CD                                       | \$13,000                 | Setup workflow for CI/CD onto Kubernetes. Included in Kubernetes Discoverer.   |
| Workload analysis                                    | \$9,000                  | Assessment of customer application for suitability and optimal strategy for Kubernetes-centric operations. Included in Kubernetes Discoverer.  |
| Disaster recovery                                    | \$10,000                 | Plan and automation of backup and restore using available cloud or on-premises storage.  |
| Alternate runtime                                    | \$5,000                  | Any CRI-ready runtime can be integrated.   |
| Customisation  | \$1,500 / day            | Additional development, customisation and integration engineering.   |

## 4 steps to your Kubernetes cluster

### 1. Choose your package

For bare metal, you want the Discoverer, which also includes consulting to determine the optimal architecture based on your workloads and available hardware. That architecture will be reusable if you want to scale up or duplicate the cluster later. You may also wish to integrate your Kubernetes cluster with existing monitoring systems, storage or networking.

### 2. Implementation and workshops

Our delivery team stands up your production cluster and delivers a training workshop to ensure your cluster meets its purpose. They will leave you with the ability to recreate the cluster from scratch automatically, as well as the skills to backup, scale and operate the cluster daily. For the Discoverer package we will optionally setup CI/CD for one of your projects, to give you a production workflow for devops from code to production.

### 3. Conformance testing

We run joint Kubernetes acceptance testing to ensure the build meets requirements and passes upstream Kubernetes compliance tests.

### 4. Ongoing support or remote management

We provide ongoing phone support, or full remote management, 24x7.

## Enterprise support

Our Kubernetes delivery packages, Explorer and Discoverer, include 30 days of phone support during office hours.

For ongoing enterprise support, Canonical's Ubuntu Advantage provides extended security maintenance patches, kernel live patching to avoid reboots, Landscape systems management, and telephone support for the full stack from kernel to Kubernetes. Ubuntu Advantage for Kubernetes is priced at \$4 / VM for cloud or VMware based deployments, or \$12 per physical host. Physical deployments include 3 Tb of Ceph storage per storage-enabled host.

## Resource Requirements

- The minimum infrastructure requirement is access to a public cloud.
- VMware is supported for private infrastructure in Explorer.
- With Discoverer, you can deploy on Ubuntu-certified bare metal servers.
- Internet access from all nodes in cluster, including MAAS and the optional Landscape. Completely offline deployments are possible with the Discoverer package.
- Fully converged deployment can use all nodes for compute. Custom placement of components can separate compute and administration.

## Contact Us

For more information about Canonical Kubernetes contact us at [sales@canonical.com](mailto:sales@canonical.com)

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