

# Enterprise Kubernetes

Kubernetes is an open-source platform for automated 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

The official distribution of Kubernetes on Ubuntu delivers a pure 'upstream' version of Kubernetes for organisations to use privately. We work directly with Google and the community to provide a pure Kubernetes experience on-premise and maximise compatibility across all public Kubernetes services such as Google GKE, Amazon EKS and Azure AKS.

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, easy to deploy, operate and upgrade.

Whether you want a development cluster on VMware or a production cluster on bare metal backed by GPUs for Artificial Intelligence and Machine Learning, Ubuntu is your fast path to resilient enterprise Kubernetes with no lock-in.

## Multi-cloud and on-premise private Kubernetes

Canonical Kubernetes works on AWS, Google Cloud, Azure, 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, the Canonical distribution 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, which gives them the ability to evolve at their own pace, avoiding institutional gridlock. Kubernetes frees your developers to focus on what matters most, your business workloads and not infrastructure problems.

## 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 but 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.

## Spotlight on Canonical Kubernetes

- Built from upstream source, clean Kubernetes maximises compatibility with public container offerings
- Security updates by Canonical, makers of Ubuntu, cover everything from kernel to k8s
- Upgrades guaranteed, giving you freedom to consume the latest k8s at your own pace
- Robust encryption with TLS for all control plane components
- Full confinement using kernel-level mandatory access controls
- Automatic acceleration of GPU-optimised workloads like 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
- AWS, Google, Azure, Oracle public clouds, VMware, OpenStack and bare metal
- Training, certification, support and remote management available

# Enterprise Kubernetes Packages

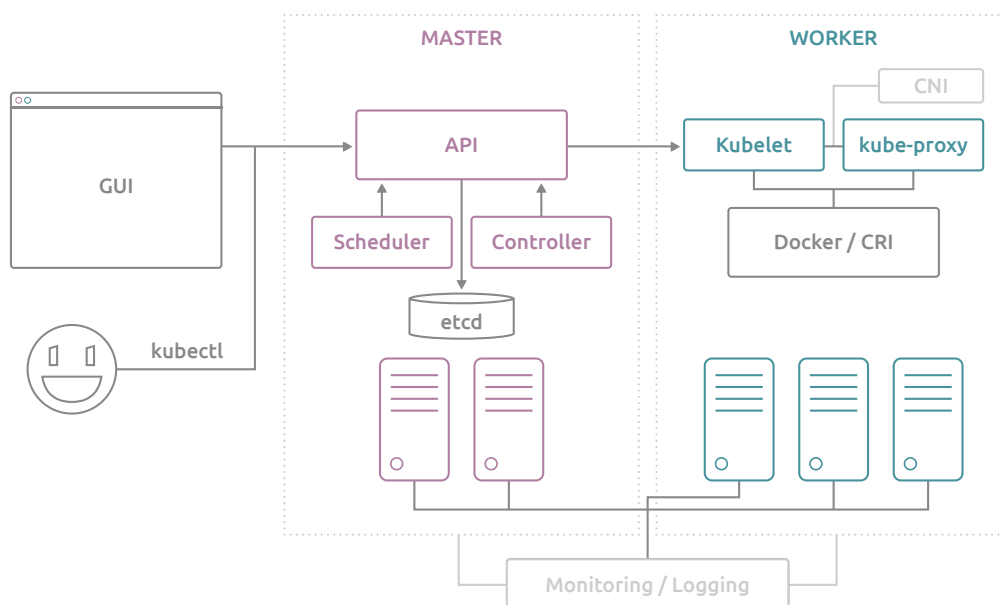
Canonical's Kubernetes offerings include training, a smaller setup and a predefined architecture to get enterprise Kubernetes solutions up and running quickly. A more complex, production-ready setup on any cloud,

including bare-metal environments, is also available with custom integrations and optional add-ons to meet your organisation's requirements. All built solutions come with automated upgrades to newer versions on demand.

Kubernetes Explorer	Kubernetes Discoverer	Kubernetes Discoverer Plus
<p>Three-day training on Canonical Kubernetes and tooling to ramp up your Kubernetes skills and get you ready to deploy in your own environment.</p> <p><b>What's included:</b></p> <ul style="list-style-type: none"> <li>• Kubernetes and container basics</li> <li>• Reference architecture</li> <li>• Deployment on multiple substrates</li> <li>• Security and patching</li> <li>• Monitoring and logging</li> <li>• Lifecycle management</li> <li>• Backup and recovery</li> </ul>	<p>Get up and running in one week with a customised architecture to fit your requirements, including deploying on virtualised environments, private and public clouds.</p> <p><b>What's included:</b></p> <ul style="list-style-type: none"> <li>• High availability Kubernetes, deployed on Public Cloud, VMware, OpenStack</li> <li>• Custom Kubernetes architecture optimised for your workloads</li> <li>• Calico, Canal, Flannel networking</li> <li>• 3 days on-site in-person Canonical Kubernetes training</li> </ul>	<p>Be up and running in three weeks with a production-grade Kubernetes cluster with a modular ecosystem to fit your requirements. Deploy virtualised or bare metal.</p> <p><b>What's included:</b></p> <ul style="list-style-type: none"> <li>• High availability production-grade Kubernetes, deployed on Public Cloud, VMware, OpenStack, or Bare metal</li> <li>• GPU acceleration</li> <li>• Storage for persistent volumes</li> <li>• Custom Networking options</li> <li>• Management platform</li> <li>• Private Registry</li> <li>• Load balancers</li> <li>• Application Catalog</li> <li>• 2 days on-site in-person Knowledge Transfer to Kubernetes operators</li> </ul>

**Optional extras:**

- Full remote management of your Kubernetes clusters by Canonical
- Enterprise phone support for Kubernetes and Ubuntu
- AI/ML add-on



## Details and Pricing

	Kubernetes Discoverer	Kubernetes Discoverer Plus
	\$45,000	\$95,000
<b>Environments</b>	AWS, Azure, Google Cloud, Oracle Cloud, VMware, Canonical OpenStack	AWS, Azure, Google Cloud, Oracle Cloud, VMware, Canonical OpenStack, Bare metal (with MAAS)
<b>Scale</b>	12-200 nodes	12-2,000 nodes
<b>Storage</b>	VMware, Cloud block, Ceph (from Canonical OpenStack)	Ceph, NetApp Trident (OnTAP, SANtricity, SolidFire), Pure Storage flexVolume, PortWorx, StorageOS, VMware native storage (VMDK), Cloud native block storage, Local disks, NFS, iSCSI
<b>Networking</b>	Canal, Calico, Nodeport, Flannel	Canal, Calico, Nodeport, Flannel, Juniper Contrail*, WeaveWorks* (*optional, extra cost)
<b>GPGPU acceleration</b>	n/a	Physical CUDA GPUs on bare metal, Public Cloud GPU-enabled virtual machines
<b>Authentication</b>	Kubernetes RBAC	Kubernetes RBAC, plus SAML, LDAP, OAuth (through Rancher, Twistlock or OpenUnison)
<b>Load balancer</b>	Nginx ingress controller, HAProxy ingress controller	Nginx ingress controller, HAProxy ingress controller, F5 BigIP, AVI Networks
<b>Private registry</b>	n/a	Jfrog Artifactory, Sonatype Nexus, Harbor
<b>CI/CD</b>	n/a	Jenkins
<b>Training</b>	3-day Canonical Kubernetes classroom training, plus knowledge transfer on customer environment	2-day knowledge transfer on deployed environment (classroom training purchased separately with Kubernetes Explorer)
<b>Security</b>	Security patches for the entire stack from kernel to Kubernetes, inc. CVEs and additional security improvements	Audit logging, Network policies, Namespaces, Pod Security Policies (PSP), AppArmor, PKI (EasyRSA & Hashicorp Vault), Ceph encryption at rest, CVE/exploit scanning of containers (through Twistlock)
<b>Upgrades</b>	Latest distribution available within 7 days of upstream release	
<b>Docs</b>	Design overview, deployment guide	
<b>Connectivity</b>	Internet access required	Offline deployment possible
<b>Architecture</b>	Reference	Customised
<b>Monitoring and Logging</b>	Prometheus/Elasticsearch Elasticsearch/FileBeat/Graylog	Prometheus/Grafana Elasticsearch/FileBeat/Graylog, Custom monitoring integration possible

## AI/ML Add-on for Discoverer and Discoverer Plus

\$40,000

Turn on the taps with a workshop to understand the full stack of machine learning. Build a full pipeline from developer stations to your data center, to the public cloud. Canonical works with the leading companies to ensure you have the widest range of choices.

Workshop	ML / Data Science Assessment	Full Remote Management
<p>One additional day on Kubeflow, including Tensorflow and JupyterHub, covering everything your business needs to know to have a full on-prem/off-prem AI/ML game plan</p> <ul style="list-style-type: none"><li>• On site or remote options</li><li>• Hands-on K8s and Kubeflow</li><li>• Full pipeline view</li><li>• ML / Data science assessment</li></ul>	<p>Canonical will leverage its network of data science partners to deliver an AI assessment as part of the workshop with options for ongoing engagement post-deployment.</p> <ul style="list-style-type: none"><li>• Understand AI lifecycle</li><li>• Preliminary AI discovery</li><li>• Development assessment</li><li>• Deploy and operate analysis</li><li>• Finalize initial AI strategy</li></ul>	<p>Focus on your data pipelines and let Canonical handle all the operations from bare metal up to Kubeflow.</p> <ul style="list-style-type: none"><li>• Fixed monthly cost</li><li>• On-prem / On-cloud</li><li>• Regulatory compliance</li><li>• Hardware acceleration</li><li>• Monitoring, management</li><li>• Build, Operate, Transfer</li></ul>

## Kubernetes Explorer Training

\$19,500

A three-day classroom-style hands-on training at your premises for up to 15 people, with a minimum of 8 people, that will give you the best introduction for setting up and running your own Kubernetes cluster.

## 4 Steps to Your Kubernetes Cluster

### 1. Choose your package

For virtual environments, choose Discoverer. For bare metal, you want the Discoverer Plus, 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 K8s cluster with existing monitoring systems, storage or networking.

### 2. Implementation and workshops

Our delivery team runs a workshop to define your Kubernetes environment, and then stands up your cluster to ensure it 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. The Discoverer package includes deployment of a starter Kubernetes cluster and a 3-day classroom-style training on Canonical Kubernetes and tooling, while the Discoverer Plus focuses on cluster deployment with production features around storage, networking, private registry, CI/CD, management platform and more.

### 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

For ongoing enterprise support, Canonical's Ubuntu Advantage provides 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 \$400 / VM for cloud or VMware based deployments, or \$1200 per physical host. Physical deployments include 3TB of Ceph storage per storage-enabled host.

## 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 take the keys at any time. The fastest path to production.

## Resource Requirements

- The minimum infrastructure requirement is access to a public cloud.
- VMware and Canonical OpenStack are supported for private infrastructure.
- With Discoverer Plus, 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 Plus 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](#) or call direct (US Central) +1 737 204 0291 or (UK) +44 203 656 5291