ubuntu

Enterprise Kubernetes

Kubernetes is an open-source platform for automated deployment, scaling and management of containerised applications and workloads. Originally built by Google, it is currently maintained by the Cloud Native Computing Foundation.

Multi-cloud Kubernetes on Ubuntu

Ubuntu is the reference platform for Kubernetes on all major public clouds, including official support in Google's GKE, Microsoft's AKS and Amazon's EKS Kubernetes offerings. Canonical delivers a pure upstream Kubernetes, known as Charmed Kubernetes. Charmed Kubernetes is tested across the widest range of clouds - from public clouds to private data centres, from bare metal to virtualised infrastructure.

Like Ubuntu itself, Charmed 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 development cluster on VMware, a production cluster on bare metal backed by GPUs for Artificial Intelligence and Machine Learning, or an easy to deploy and scale cluster in a public cloud, Ubuntu is your fast path to resilient enterprise Kubernetes with no lock-in.

Automated, reusable, scalable, secure

With full automation for initial deployments, lifecycle management and ongoing operations, Charmed Kubernetes keeps you agile, supported and secure. Automation reduces costs, increases agility and empowers teams to operate their own Kubernetes clusters just about anywhere they choose, which gives them the ability to evolve at their own pace.

Our automation also allows your operations team to manage many independent Kubernetes clusters, in the cloud or on-prem, avoiding the gridlock associated with evolving a handful of clusters used across many teams. Charmed Kubernetes frees your developers and infrastructure teams to focus on your business workloads as opposed to manual infrastructure issues.

Upgrades, as soon as you want them

Kubernetes moves fast - the upstream project has a quarterly release cycle. Due to Charmed Kubernetes' flexible architecture, Canonical ensures you will be able to upgrade within a week of an upstream release.

Integrate Kubernetes into your environment and preserve the ability to get the latest features with these guaranteed upgrades, allowing your team to benefit from the latest innovations.

Spotlight on Charmed 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
- Consulting for custom storage, network, monitoring or other integrations
- AWS, Google, Azure, Oracle public clouds, VMware, OpenStack and bare metal substrates
- Training, certification, support and remote management available

Enterprise Kubernetes Packages

These Kubernetes packages offer a choice of how to get started - standard or advanced. The standard package includes a predefined architecture, automated deployment and standard training to get Kubernetes up and running quickly.

The advanced package addresses more sophisticated requirements, including production-ready deployments on any cloud or bare-metal environments, with custom integrations and optional add-ons to meet your organisation's requirements.

Kubernetes Explorer

Three-day training workshop on Kubernetes deployment and operations. Boost your team's Kubernetes skills and enable them to deploy on VMware and public clouds.

What's included:

- Kubernetes and container basics
- Reference architecture
- Multi-cloud approach
- Security and patching
- Monitoring and logging
- Lifecycle management
- Backup and recovery

Kubernetes Discoverer

Three-day training workshop plus five days of deployment of a reference Kubernetes architecture on VMware, private and public clouds.

What's included:

- High availability Kubernetes, deployed on Public Cloud, VMware, OpenStack
- Logging, monitoring, alerting
- Custom Kubernetes architecture optimised for your workloads
- Calico, Flannel networking
- Three days of standard training

Kubernetes Discoverer Plus

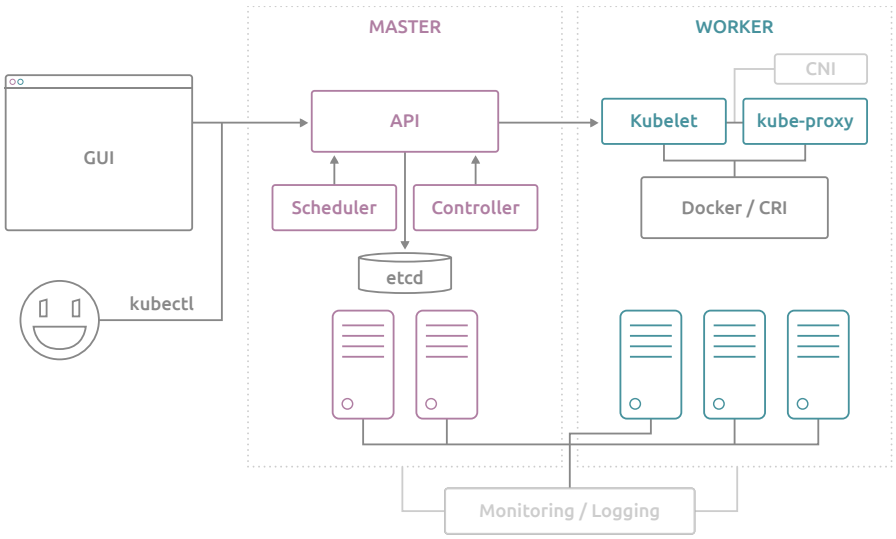
Three weeks, including an on-site workshop, co-design of a custom architecture and full enterprise production deployment across bare metal, virtual and cloud environments.

What's included:

- High availability production-grade Kubernetes, deployed on public cloud, VMware, OpenStack or bare metal
- Logging, monitoring, alerting
- GPU acceleration
- Storage for persistent volumes
- Custom networking options
- Management platform
- Private Registry
- Load balancers
- Application Catalog
- On-site knowledge transfer

Optional extras:

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



Details and Pricing

Kubernetes Explorer
$19,500

Basic workshop
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.

Kubernetes Discoverer & Discoverer Plus

Workshop and deployment of reference or custom K8s architecture across a variety of substrates

	Kubernetes Discoverer	Kubernetes Discoverer Plus
	$45,000	$95,000
Environments	AWS, Azure, Google Cloud, Oracle Cloud, VMware, OpenStack	AWS, Azure, Google Cloud, Oracle Cloud, VMware, OpenStack, Bare metal (with MAAS)
Scale	13-200 nodes	13-2,000 nodes
Storage	VMware, Cloud block, Ceph	Ceph, NetApp Trident* (OnTAP, SANtricity, SolidFire), Pure Storage flexVolume*, PortWorx*, StorageOS*, VMware native storage (VMDK), Cloud native block storage, Local disks, NFS, iSCSI
Networking	Canal, Calico, Nodeport, Flannel	Canal, Calico, Nodeport, Flannel, Juniper Contrail**
GPGPU acceleration	n/a	Physical CUDA GPUs on bare metal, Public Cloud GPU-enabled virtual machines
Authentication	Kubernetes RBAC	Kubernetes RBAC, Kubernetes OIDC, LDAP, Active Directory, OAUTH, SAML (through Keystone or OpenUnison)
Load balancer	Nginx ingress controller, HAProxy ingress controller	Nginx ingress controller, HAProxy ingress controller, F5 BigIP*, AVI Networks*
Private registry	n/a	Jfrog Artifactory*, Sonatype Nexus*, VMware Harbor*, Gitlab*
CI/CD	n/a	Jenkins
Training	3-day classroom training	2-day hands-on knowledge transfer on deployed environment (classroom training purchased separately with Kubernetes Explorer)
Security	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 and Hashicorp Vault), Ceph encryption at rest And through Aqua* or Twistlock*: Image Assurance, Container firewall, Secure Secrets injection, Runtime Protection, Compliance and visibility
Upgrades	Latest distribution available within 7 days of upstream release	
Docs	Design overview, deployment guide	
Connectivity	Internet access required	Offline deployment possible
Architecture	Reference	Customised
Monitoring and Logging	Prometheus/Elasticsearch Elasticsearch/FileBeat/Graylog	Prometheus/Grafana Elasticsearch/FileBeat/Graylog, Custom monitoring integration possible

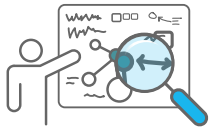
** Deployment only, Canonical does not provide support*

*** Included at extra cost*

Kubeflow Machine Learning Starter

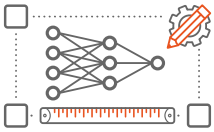
$40,000

This week-long workshop will train your team to understand the full AI/ML stack. Learn to build a full pipeline from developer stations to your data centre, to the public cloud using Kubeflow on Kubernetes for model training and analytics.



1 DISCOVERY: Goals, challenges, knowledge, sprint target

2 ASSESSMENT: Data, workflows, gaps, ideas, users



3 DESIGN: Prototypes, algorithms, tests, data

4 IMPLEMENTATION: Models, pipelines, integrations

5 OPERATION AND FEEDBACK: Deploy, operate, evaluate

Workshop	Assessment
One week dedicated to Kubeflow and your preferred ML frameworks, including TensorFlow and JupyterHub. The workshop will cover everything your business needs to know to have a full on-prem/off-prem AI/ML operations. • On-site or remote options • Hands-on Kubernetes and Kubeflow • Framework of choice - examples include: TensorFlow, PyTorch, Pachyderm, Seldon Core • Full pipeline view	Canonical will leverage its network of data science partners to deliver an AI design sprint as part of the workshop with options for ongoing engagement post-deployment. • Understand AI lifecycle • Preliminary data and process discovery • Development capacity assessment • Deploy and operate ML analysis • Finalise initial AI strategy

Daily Summary

Day One - Discovery: Following a pre-kickoff, gather the AI team for this structured conversation, which will create a path for the week. Start with the long-term goal, map out the challenge, ask your domain experts to share their knowledge, and pick a target for the sprint.

Day Two - Assessment: Domain experts provide initial feedback based on the day one discovery. They report on the data and make solution recommendations. They discuss building a strategy roadmap for the project based on your specific business case. Any changes to your infrastructure should be highlighted during this step.

Day Three - Design: The team prototypes several solutions and identify the best candidate solution. In the process the team prepares data, selects features, and selects algorithms for machine learning. A key ingredient are the acceptance tests - the team will design, build and perform preliminary tests on prototype neural networks.

Day Four - Implementation: Training and testing your AI model until the desired accuracy thresholds are met. The team builds a pipeline that will put your model into a suitable environment for testing and feedback from additional stakeholders.

Day Five - Operation and feedback: Hands-on knowledge transfer between development and operations teams to ensure they can operate the solution. Elicit feedback from key stakeholders, covering the baseline architecture and model.

Fully Managed Kubernetes

Canonical offers a remote-managed Kubernetes service, on your choice of cloud or data centre. 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, take the keys at any time. The fastest path to production. For pricing please visit ubuntu.com/pricing/infra.

Price per node*	Physical	Physical, on BootStack**	Virtual
	$4,380/year	$2,190/year	$1,460/year

- 24x7 Phone and web ticket support
- Industry-leading cloud operations tooling (Ubuntu, MAAS, Juju, LXD)
- Deploy, run, scale, upgrade K8s
- Monitoring and logging
- Landscape management
- Livepatch
- Knowledge Base
- High availability (HA) support
- Remote operations, smart alerts and proactive monitoring
- Disaster recovery

** Minimums apply*

*** BootStack is the Canonical offering for fully managed OpenStack. BootStack pricing is in addition to the managed Kubernetes price of $2,190. You can run an unlimited number of virtual Kubernetes nodes on top of each OpenStack physical node.*

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 Charmed 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 for Infrastructure provides kernel live patching to avoid reboots, Landscape systems management and telephone support for the full stack from kernel to Kubernetes. For pricing please visit ubuntu.com/pricing/infra.

Resource Requirements

- The minimum infrastructure requirement is access to a public cloud
- VMware and 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 & 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 Charmed Kubernetes, contact us or call direct (US Central) +1 737 204 0291 or (UK) +44 203 656 5291

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