ubuntu

MicroK8s: cluster in a snap

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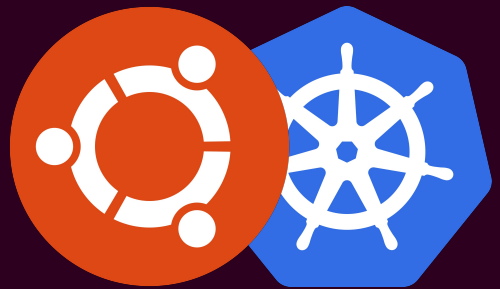


CANONICAL

Kubernetes

From the greek word “κυβερνήτης” originally designed by Google and donated to the Cloud Native Computing Foundation.

Presented at "Large-scale cluster management at Google with Borg" Proc EuroSys 2015.

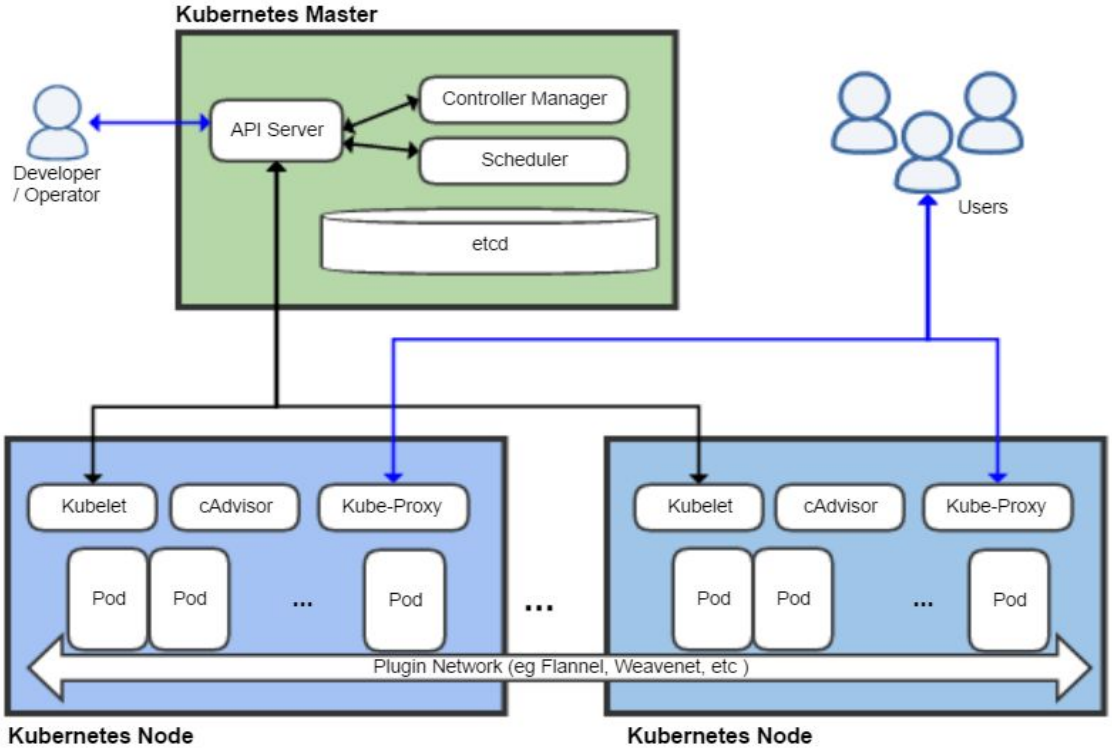
“Kubernetes is an *open-source* platform designed to automate deploying, scaling, and *operating* application *containers*.”

Canonical Distribution of Kubernetes

Canonical packages, distributes and offers support for Kubernetes. Highlights:

- Vanila Kubernetes
- Clean upgrade path
- Cloud Neutral: AWS, Azure, Google, Oracle, Rackspace, SoftLayer, or private VMware, OpenStack or bare metal.
- Multi-arch: amd64, arm64, s390x (others to come)

Kubernetes architecture



- Replicating app instances
- Balancing loads
- Self-healing apps
- Rolling updates
- Naming and discovering
- Monitoring resources

```
snap install microk8s --classic
```

MicroK8s addons

```
microk8s.enable <addon>
```

- **dns**: Deploy kube dns
- **dashboard**: Deploy kubernetes dashboard as well as grafana and influxdb.
- **storage**: Create a default storage class. This storage class makes use of the hostpath-provisioner pointing to a directory on the host.
- **ingress**: Create an ingress controller.
- **gpu**: GPGPU support

Snaps

- Combine docker and apt
- Software distribution with dependencies
- Minus the elasticity
- Immutable software
- IoT/edge devices

What is a Snap?

`sudo snap install microk8s`

- Fancy zip file mounted under /snap
- Application together with its dependencies
- Sandboxed, containerised applications isolated

`/var/snap/<name>/current/` ← $SNAP_DATA is the versioned snap data directory

`/var/snap/<name>/common/` ← $SNAP_COMMON will not be versioned on upgrades

Snaps and the world

Executables:

- Under /snaps/bin
- In your path

Share resources:

- Devices & files
- Interfaces provided by snap framework

Resources

- MicroK8s: https://microk8s.io/
- MicroK8s source: https://github.com/ubuntu/microk8s
- Kubernetes: https://kubernetes.io/docs/home/
- Canonical Distribution of Kubernetes: https://www.ubuntu.com/kubernetes
- Snaps: http://snapcraft.io/

You can reach us at:

- #microk8s channel at kubernetes.slack.com
- Bugs: https://github.com/ubuntu/mickrok8s/issues

Thanks!