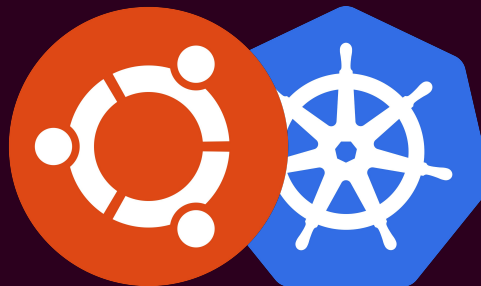


# microk8s: cluster in a snap

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# 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*.”



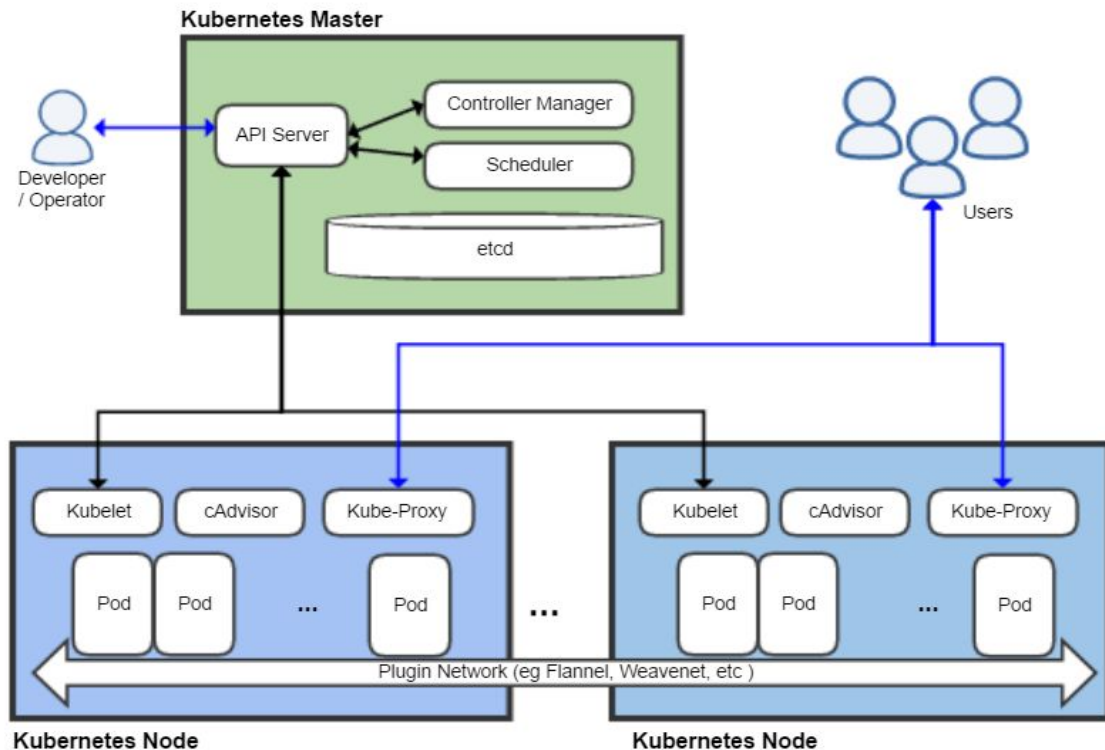
# Canonical Distribution of Kubernetes

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

- Vanilla 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 --beta --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.

# 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/juju-solutions/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:

- Mailing list: <https://lists.ubuntu.com/mailman/listinfo/juju>
- Bugs: <https://github.com/juju-solutions/microk8s/issues>

**Thanks!**