

# OpenStack & containers - application rollout with OpenStack & Magnum

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# What is OpenStack?

- Open Source Cloud “Framework”
- first release 2010
- 15 releases (A to O) as of now
- latest release “Ocata”
- more than 30 projects



# What are containers?

- isolated applications
- micro applications
- like a chroot
- examples
  - docker
  - lxc
  - rkt/rocket

# OpenStack & Containers

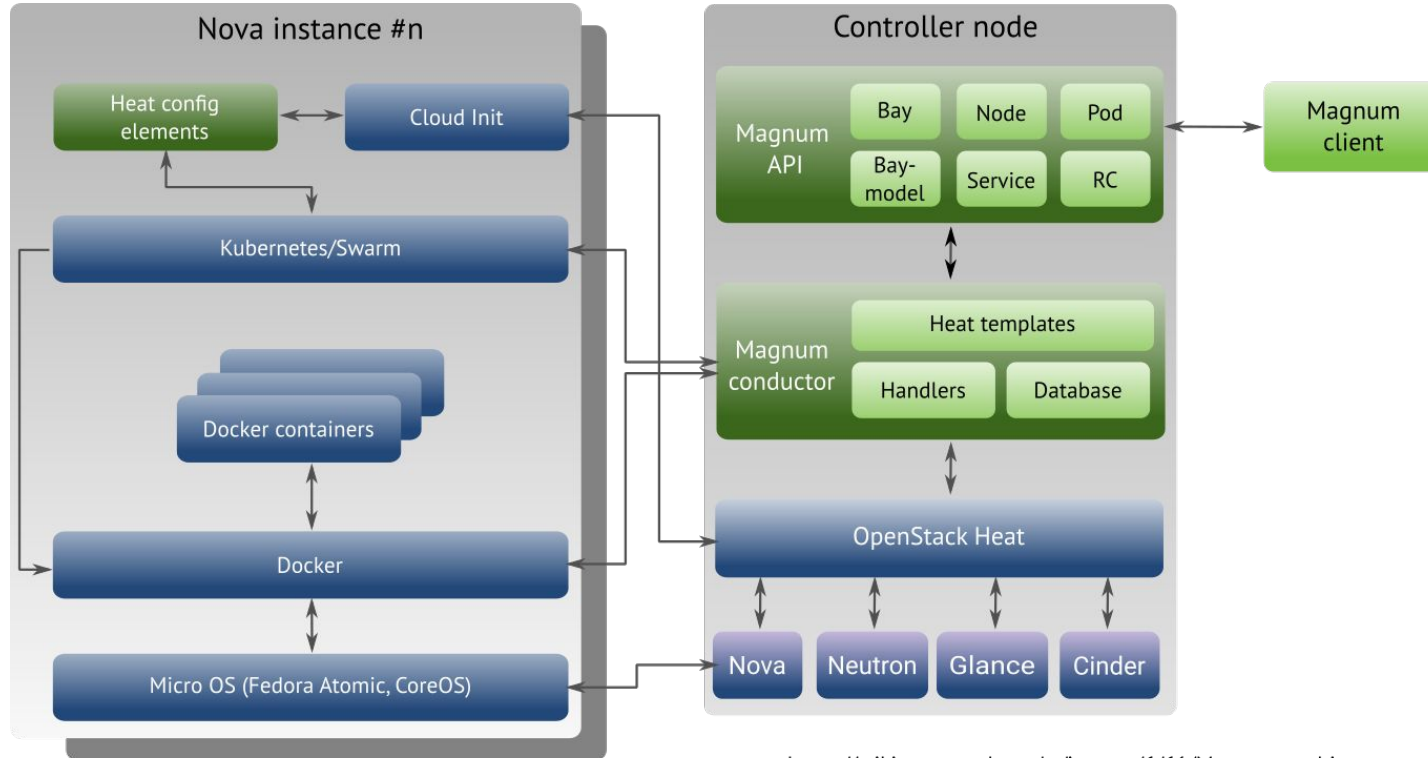
- fully integrated into Horizon
  - CLI via openstack-client
- multi-tenancy
- two ways to deploy containers
  - nova-docker - deprecated
  - magnum

# Magnum

- container orchestration engine
  - docker swam
  - kubernetes
- uses Heat for deployment
- virtual machines or
- bare-metal
- templates for Fedora



# Magnum - Architecture



source: [https://wiki.openstack.org/w/images/6/61/Magnum\\_architecture.png](https://wiki.openstack.org/w/images/6/61/Magnum_architecture.png)

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# Magnum - How to deploy an app

- it takes up to five steps (more or less)
  - a. create an ssh-key
  - b. create a cluster template
  - c. start a cluster
  - d. download kubectl\*
  - e. deploy the app

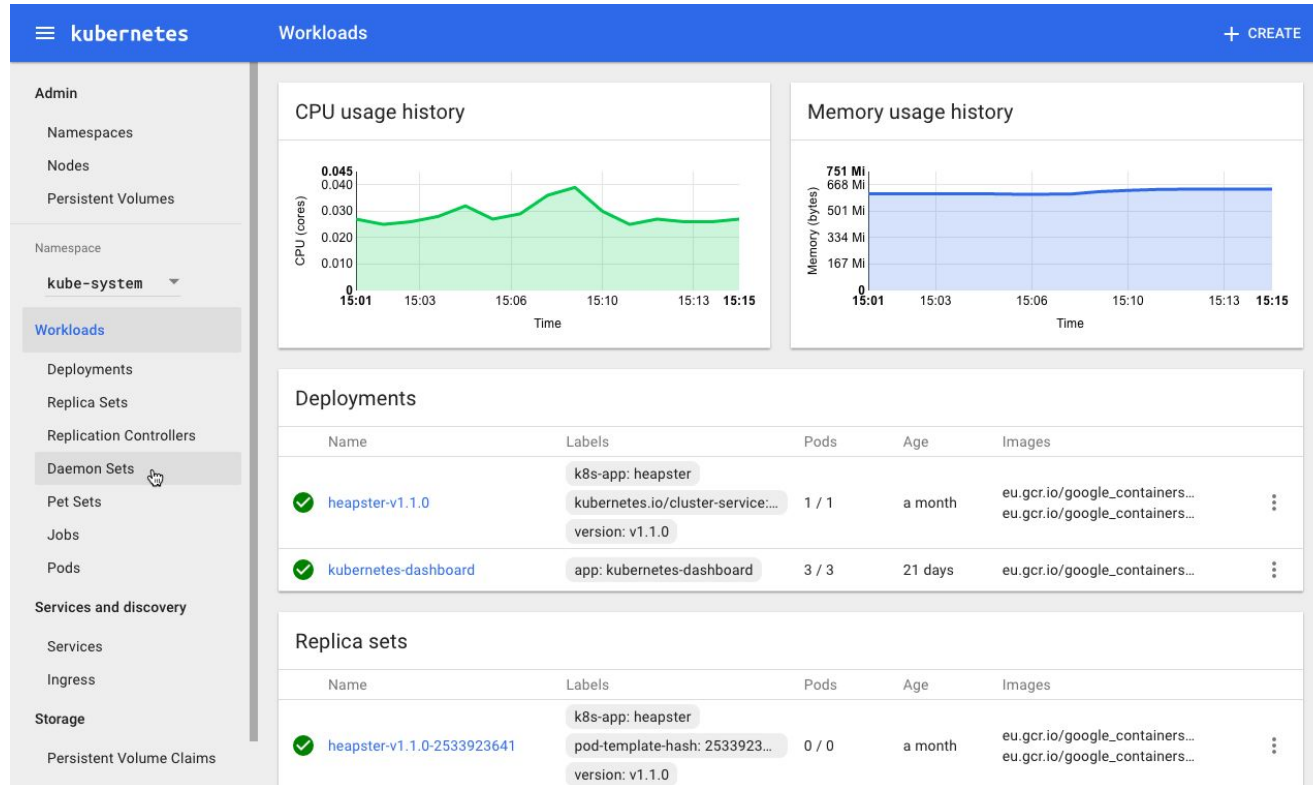
\* = depends on the engine

# Magnum & Kubernetes

- Kubernetes is
  - Open Source
  - from Google (initial)
- used by other projects
- kubectl as CLI
- WebUI for management
  - not default
- own “script” language (yaml)



# Kubernetes dashboard



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# Magnum/k8s - Real world examples

- Jenkins build cluster
  - Jenkins build master (linux)
  - Jenkins build slaves
    - containers (linux)
    - bare-metal (windows or linux)
- Redis cluster
  - one Redis master
  - n Redis slaves

# OpenStack & Magnum & Kubernetes

- pros
  - centralized management
  - dashboard
  - uniform APIs
  - self-service
- cons
  - lack of centralized logging
  - many services/technologies

# Magnum - What's next?

- check your application!
  - <https://12factor.net/>
- check your workload
- check your OpenStack installation
  - or find another distribution/framework
- make sure you know what you are doing ;)

**Thank you!**



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