OpenStack Magnum + Container orchestration

by Saulius Alisauskas, 12/2015

Container orchestration is ?

- Running a set of containers
- Defining container roles
- Linking containers
- Distribution across hosts
- High availability
- Centralised management

Kubernetes terminology

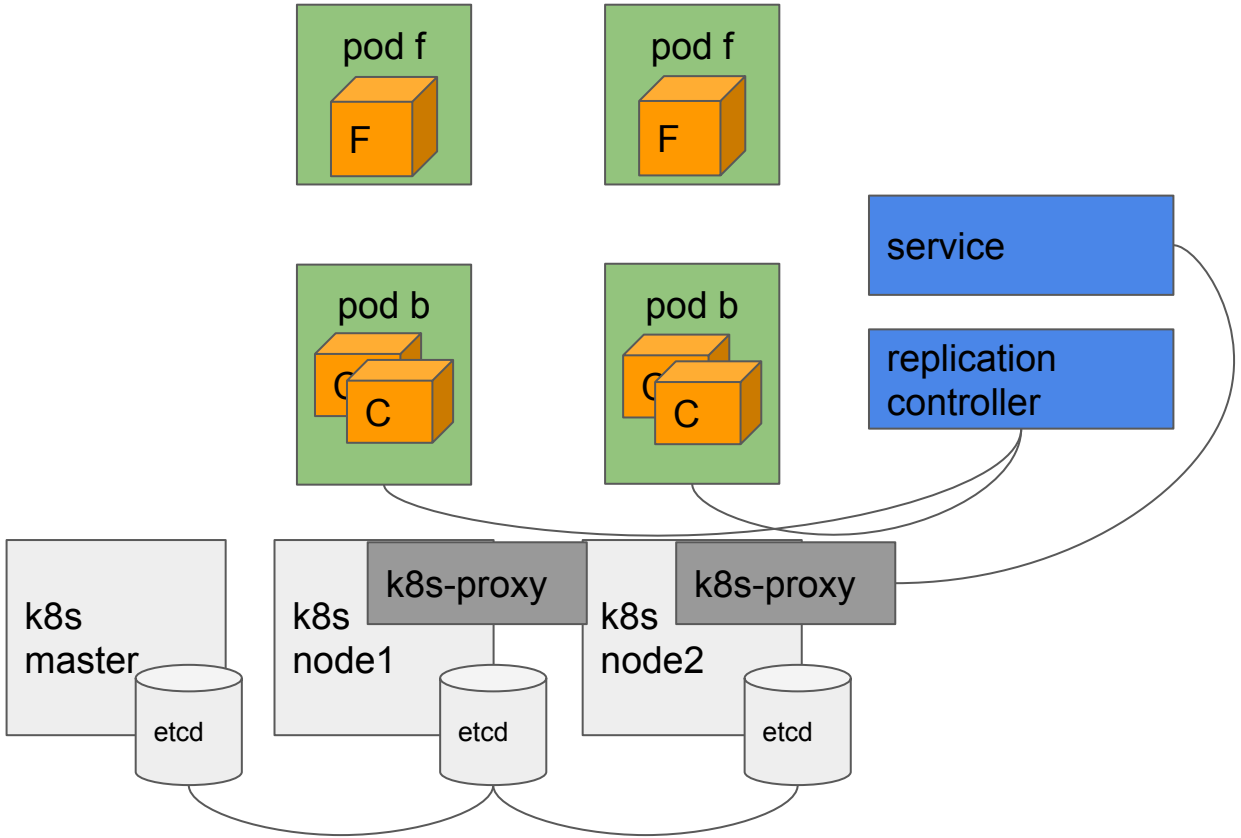
node - host running kubernetes (bare metal or VM)

pod - one or more containers (smallest application unit)

rc - replication controller

service - keeps track of containers in a pod and their ip, port mappings

Kubernetes components



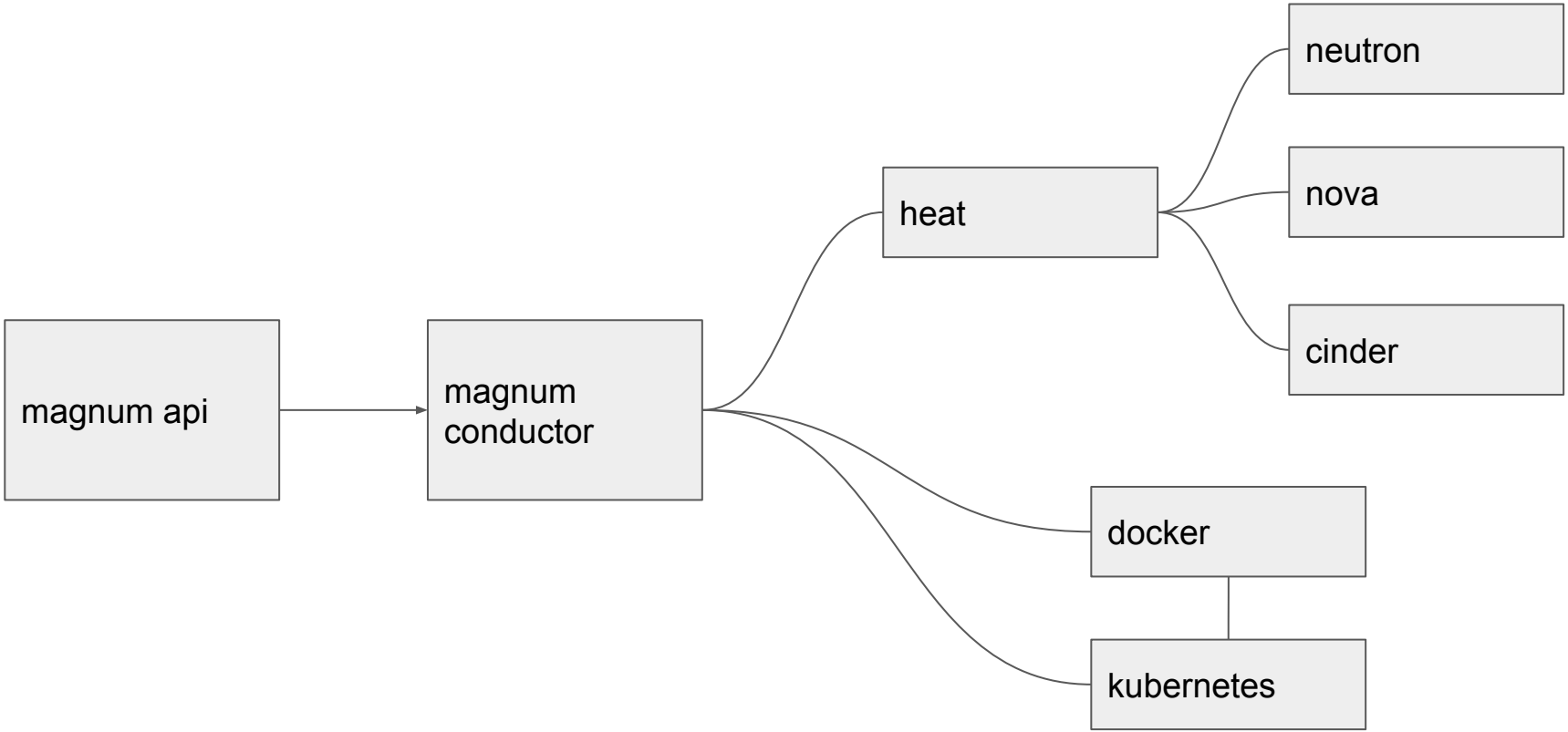
Kubernetes

```
apiVersion: v1
kind: Pod
metadata:
  labels:
          name: redis
          redis-sentinel: "true"
          role: master
  name: redis-master
spec:
  volumes:
    - name: data
      emptyDir: {}
  containers:
```

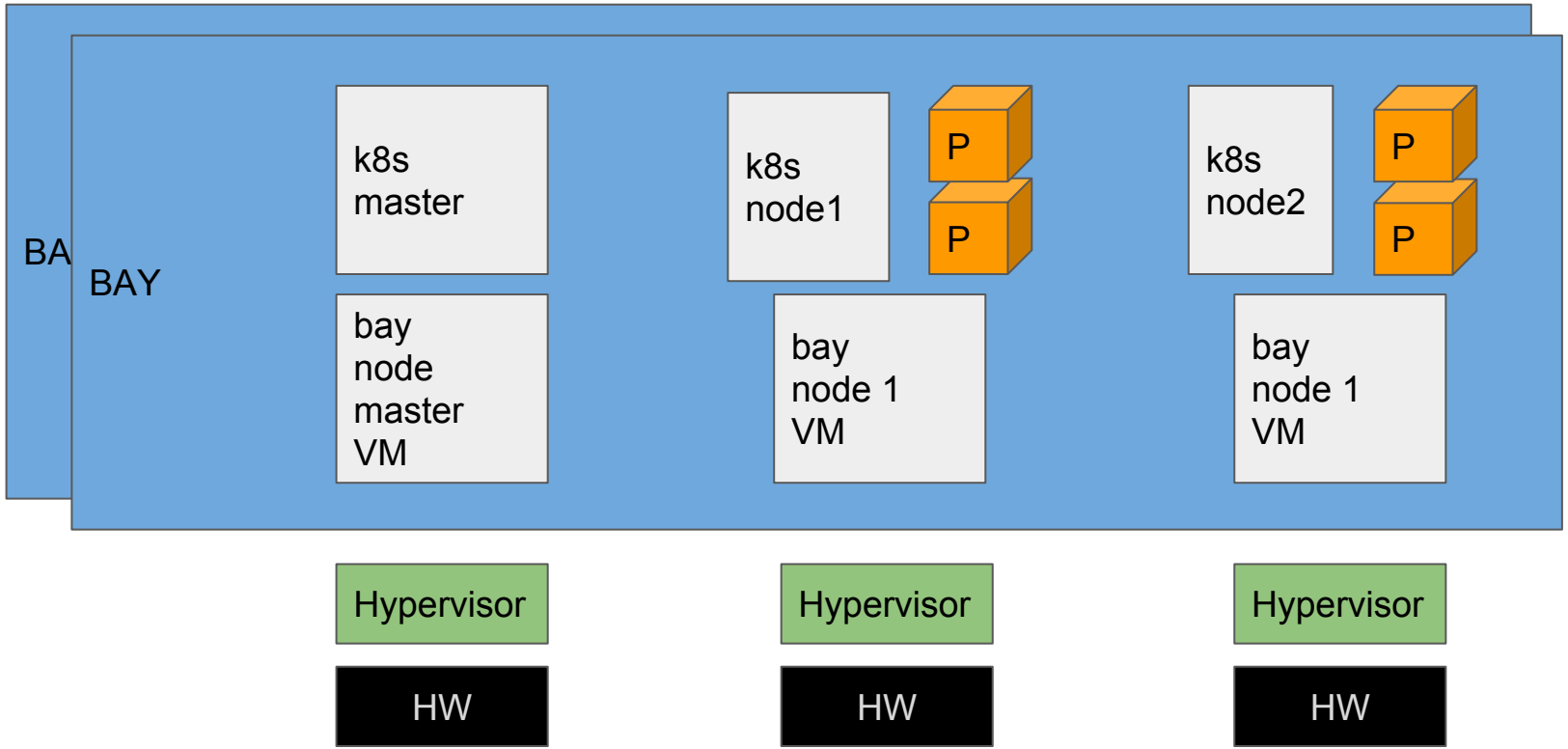
```
- name: master
    mage: kubernetes/redis:v1
    env:
      - name: MASTER
        value: "true"
    ports:
      - containerPort: 6379
    resources:
      limits:
      cpu: "0.1"
    volumeMounts:
      - mountPath: /redis-master-data
        name: data
```

```
- name: sentinel
  image: kubernetes/redis:v1
  env:
    - name: SENTINEL
      value: "true"
  ports:
    - containerPort: 26379
```

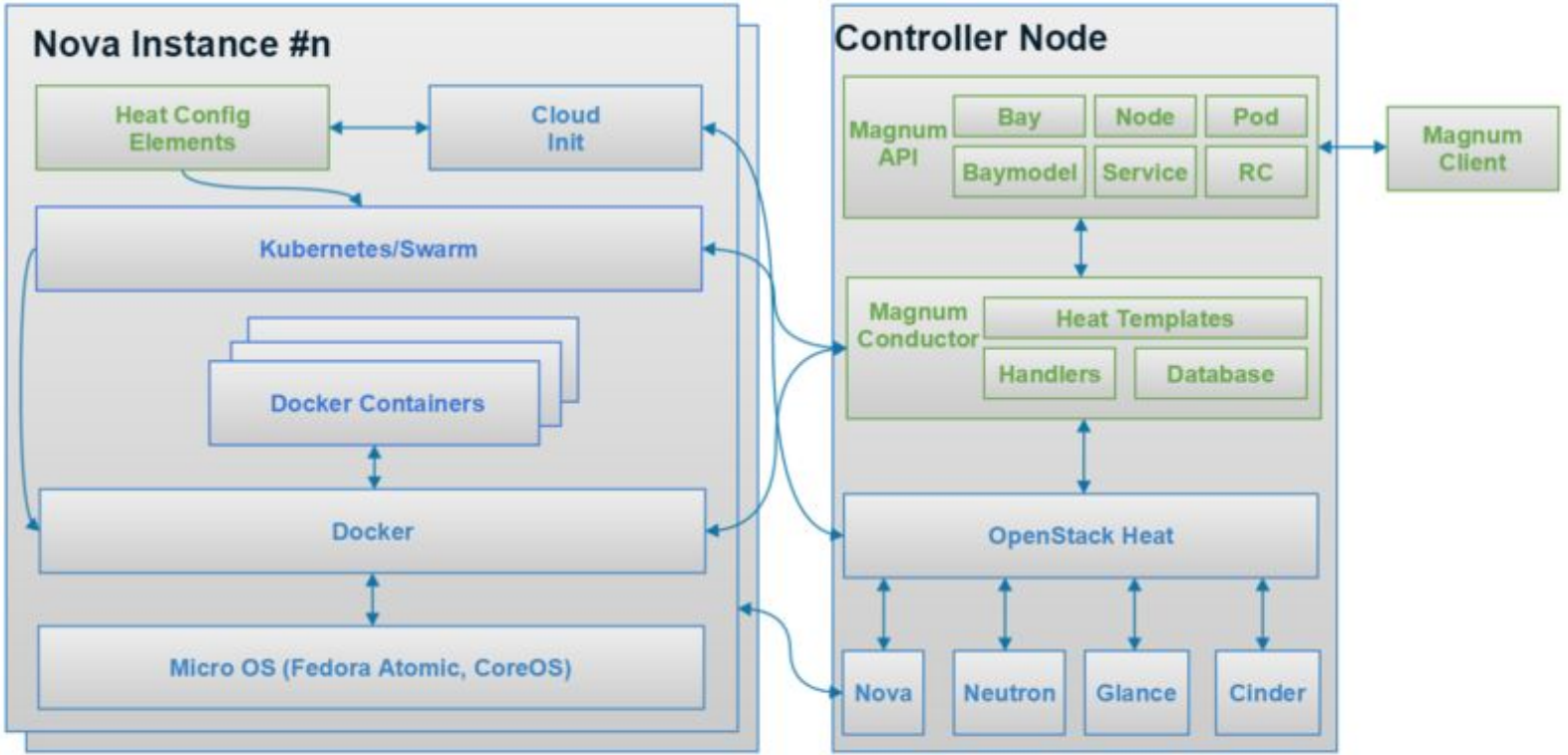
OpenStack Magnum



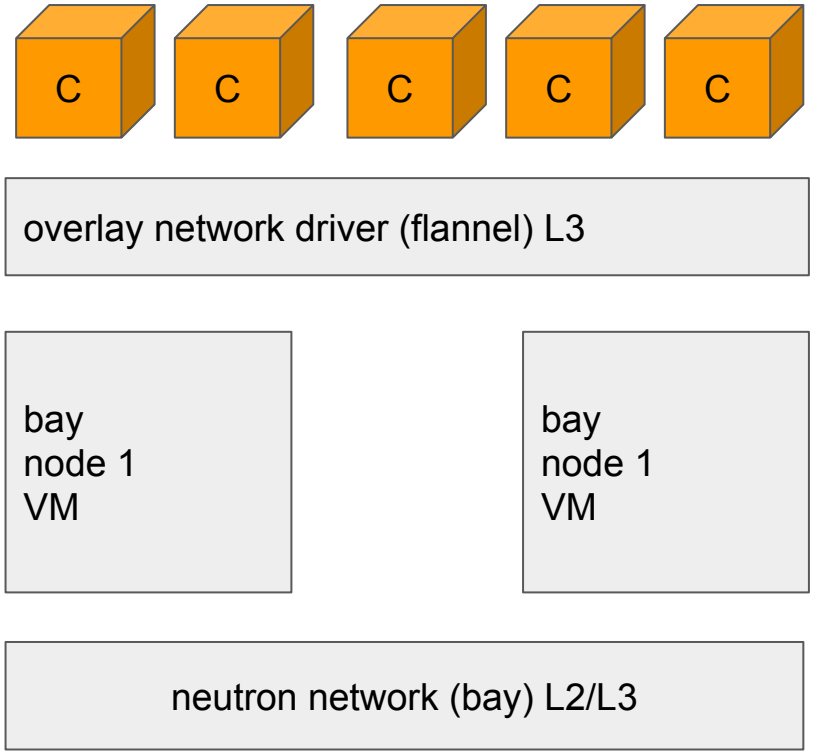
OpenStack Magnum



OpenStack Magnum



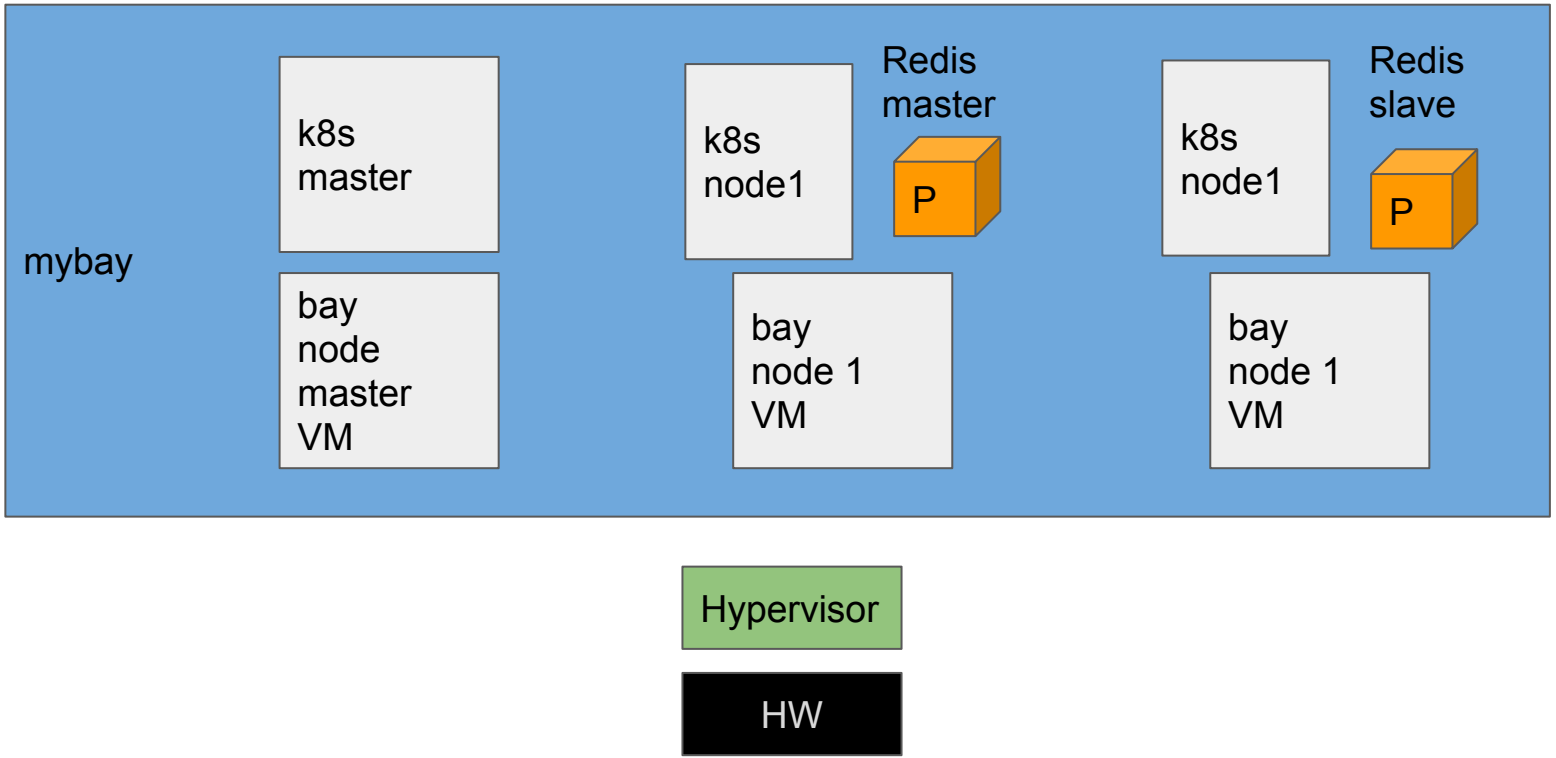
OpenStack Magnum networking



Demo

- Create Bay (set of VM’s)
- Scale Bay
- Create REDIS pod in a Bay
- Create REDIS replication controllers to replicate across Bay
- Scale pod
- Show REDIS works

Demo setup


mybay
k8s
master
bay
node
master
VM
k8s
node1
Redis
master
P
bay
node 1
VM
k8s
node1
Redis
slave
P
bay
node 1
VM
Hypervisor
HW

Thank you