

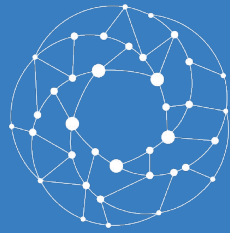
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CNF and Juju bundles

David Garcia (Canonical)

Index

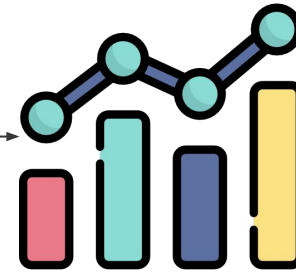
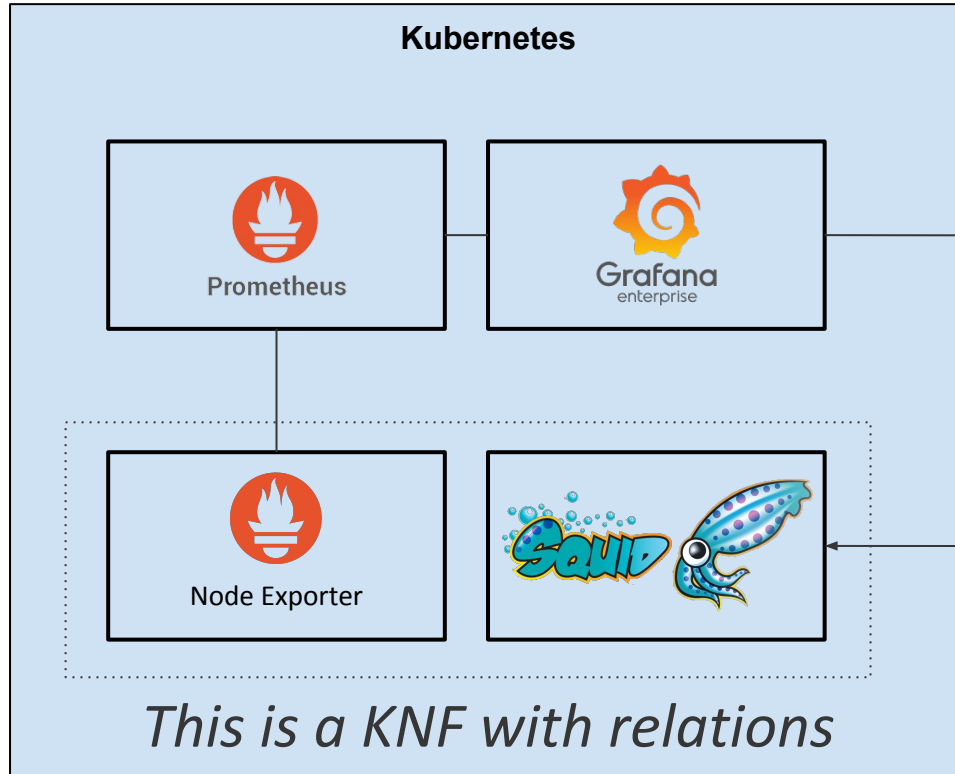
1. Performance monitor overview
2. Basics of Kubernetes operators
3. Squid overview
4. Descriptors and onboarding to OSM
5. Deployment
6. Execute actions
7. Validation



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Performance monitor overview

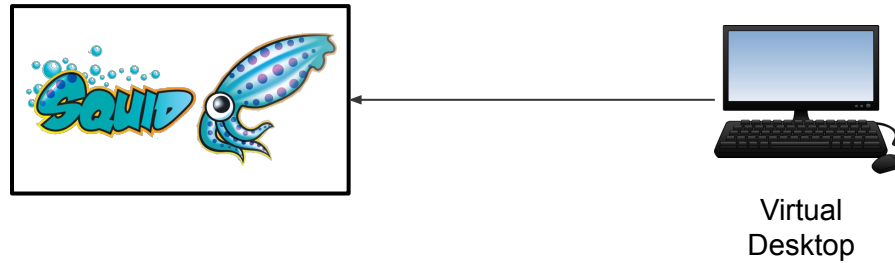
Performance Monitor

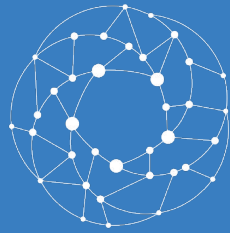


Virtual Desktop



Focus of this session





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Basics of Kubernetes operators

Recap: Operators

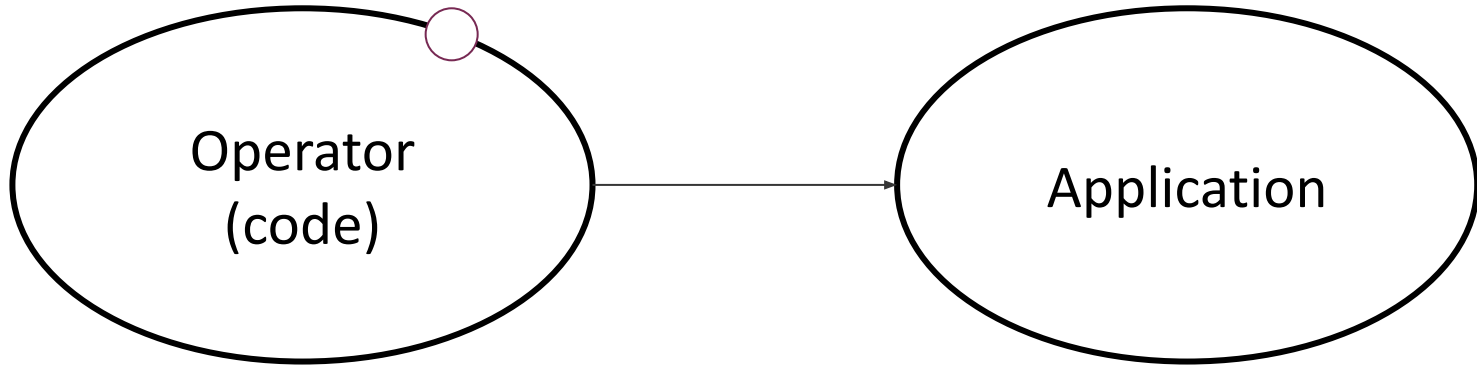
Charms are universal operators

Physical

Virtual

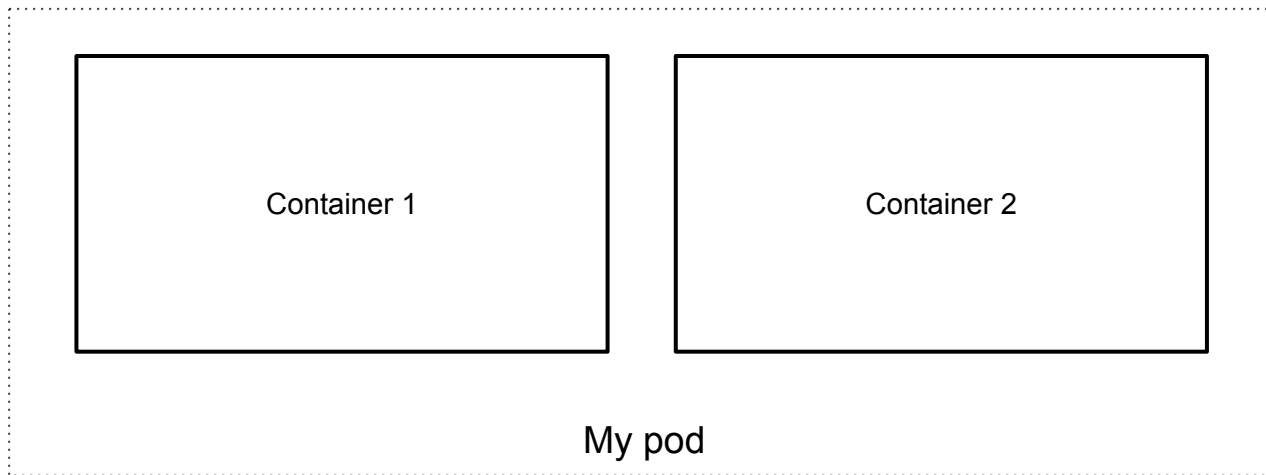
Container

Recap: Operators

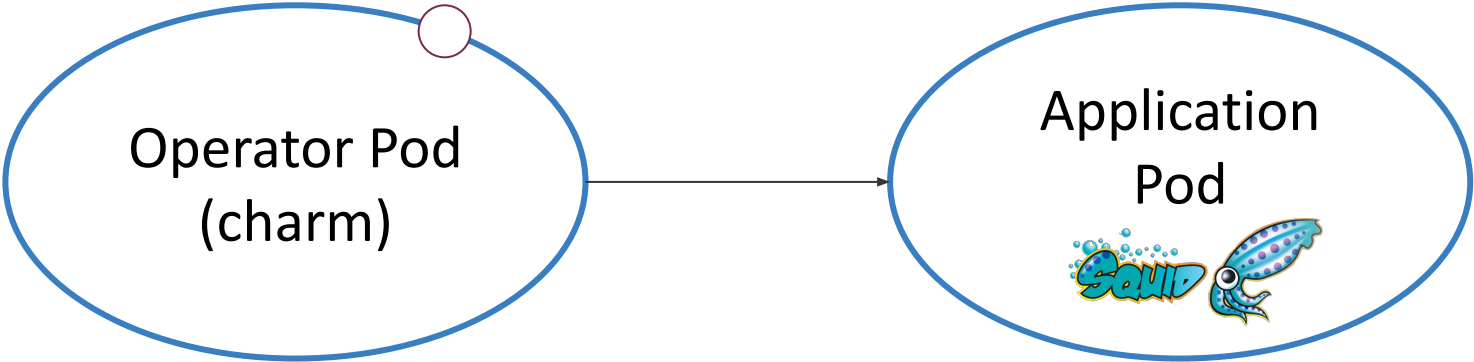


Kubernetes operators run in a Pod

Kubernetes Pod



Kubernetes Operators



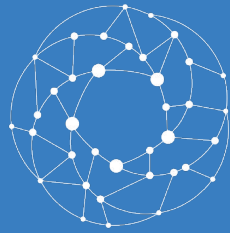
Kubernetes operators are deployed using OSM with [juju-bundles](#)

What are juju bundles?

- Bundles are collections of charms.
- They represent an entire model, rather than a single application.
- From a technical point of view, a bundle is a YAML file.

Charms + Config + Relations →

```
bundle: kubernetes
applications:
  mariadb-k8s:
    charm: cs:~juju/mariadb-k8s-2
    scale: 1
  mediawiki-k8s:
    charm: cs:~juju/mediawiki-k8s-3
    scale: 1
    options:
      debug: true
relations:
- - mariadb-k8s:server
- - mediawiki-k8s:db
```

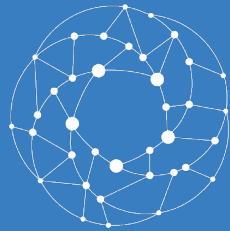


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Squid overview

Squid

- Kubernetes Operator/Charm
- It will act as a firewall and cache
- It will include two primitives:
 - addurl: add a URL to the allowed urls
 - deleteurl: remove a URL from the allowed urls



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Descriptors and onboarding to OSM

Referencing the juju-bundle (VNFd)

```
vnfd:  
  [...]  
  kdu:  
    - name: squid-metrics-kdu  
      juju-bundle: bundle.yaml
```

juju-bundles/bundle.yaml (VNFd)

```
bundle: kubernetes
applications:
  squid:
    charm: ../charms/squid-operator
    scale: 1
# ...
# ...
# ...
```

Adding day-2 operations (VNFD)

```
vnfd:
  description: K8s container deployment of Squid Web Proxy
  df:
    - id: default-df
      lcm-operations-configuration:
        operate-vnf-op-config:
          day1-2:
            - id: squid-metrics-kdu
              config-primitive:
                - name: addurl
                  parameter:
                    - name: application-name
                      data-type: STRING
                      default-value: squid
                    - name: url
                      data-type: STRING
                      default-value: ''
                [...]
            [...]
```

Adding day-2 operations (VNFD)

```
vnfd:
  description: K8s container deployment of Squid Web Proxy
  df:
    - id: default-df
      lcm-operations-configuration:
        operate-vnf-op-config:
          day1-2:
            - id: squid-metrics-kdu
              config-primitive:
                [...]
                - name: deleteurl
                  parameter:
                    - name: application-name
                      data-type: STRING
                      default-value: squid
                    - name: url
                      data-type: STRING
                      default-value: ''
```

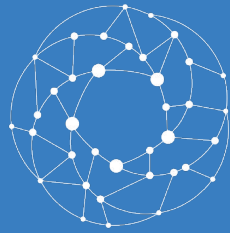
Onboarding to OSM

```
$ cp -R ~/Hackfest/HD2.5-CNF-Juju ~/HD2.5-CNF-Juju
```

```
$ cd ~/HD2.5-CNF-Juju
```

```
$ osm upload-package hackfest_squid_metrics_cnf.tar.gz
```

```
$ osm upload-package hackfest_squid_metrics_cnf_ns.tar.gz
```



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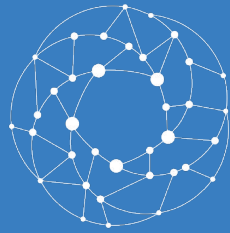
Deployment

Create Network Service

```
$ osm ns-create --ns_name webproxy \  
               --nsd_name squid_metrics_cnf_ns \  
               --vim_account $OSM_USER \  
               --config '{  
                 vld: [{  
                   name: mgmtnet,  
                   vim-network-name: osm-ext  
                 }]  
               }'
```

Check Network Service State

```
$ watch osm ns-list # Wait until it is in ready state
```

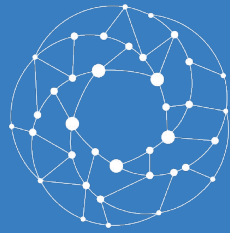



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Execute actions

Execute addurl action

```
$ osm ns-action --action_name addurl \  
                --vnf_name squid_metrics_cnf \  
                --kdu_name squid-metrics-kdu \  
                --params '{url: osm.etsi.org}' \  
webproxy
```

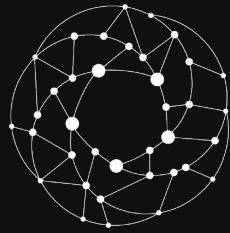


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Validation

Validation steps

```
$ osm vnf-list --filter squid_metrics_cnf
$ osm vnf-show <id> --kdu squid-metrics-kdu
$ osm vnf-show <id> # Get the loadbalancer ip
$ kubectl -n <ns-id> get svc # Get the loadbalancer ip
$ https_proxy=<squid-ip>:3128 curl https://google.com # Error 403
$ https_proxy=<squid-ip>:3128 curl https://osm.etsi.org
```



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Thanks!