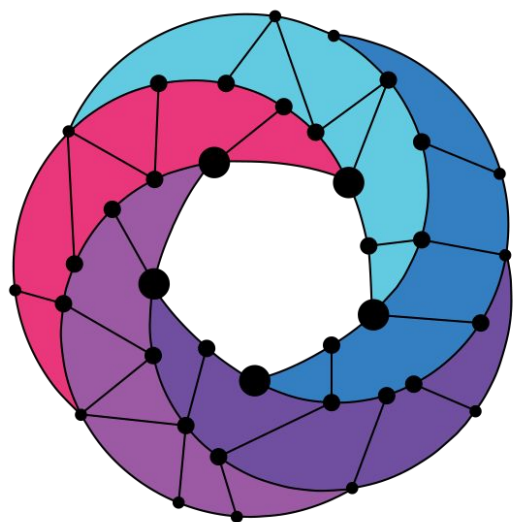




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Introduction to Juju Relations

David Garcia (Canonical)

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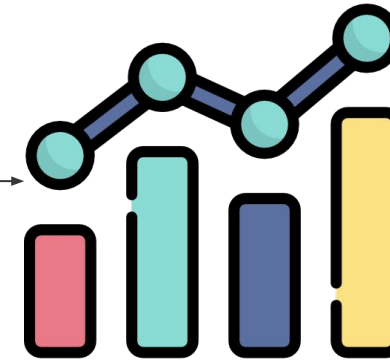
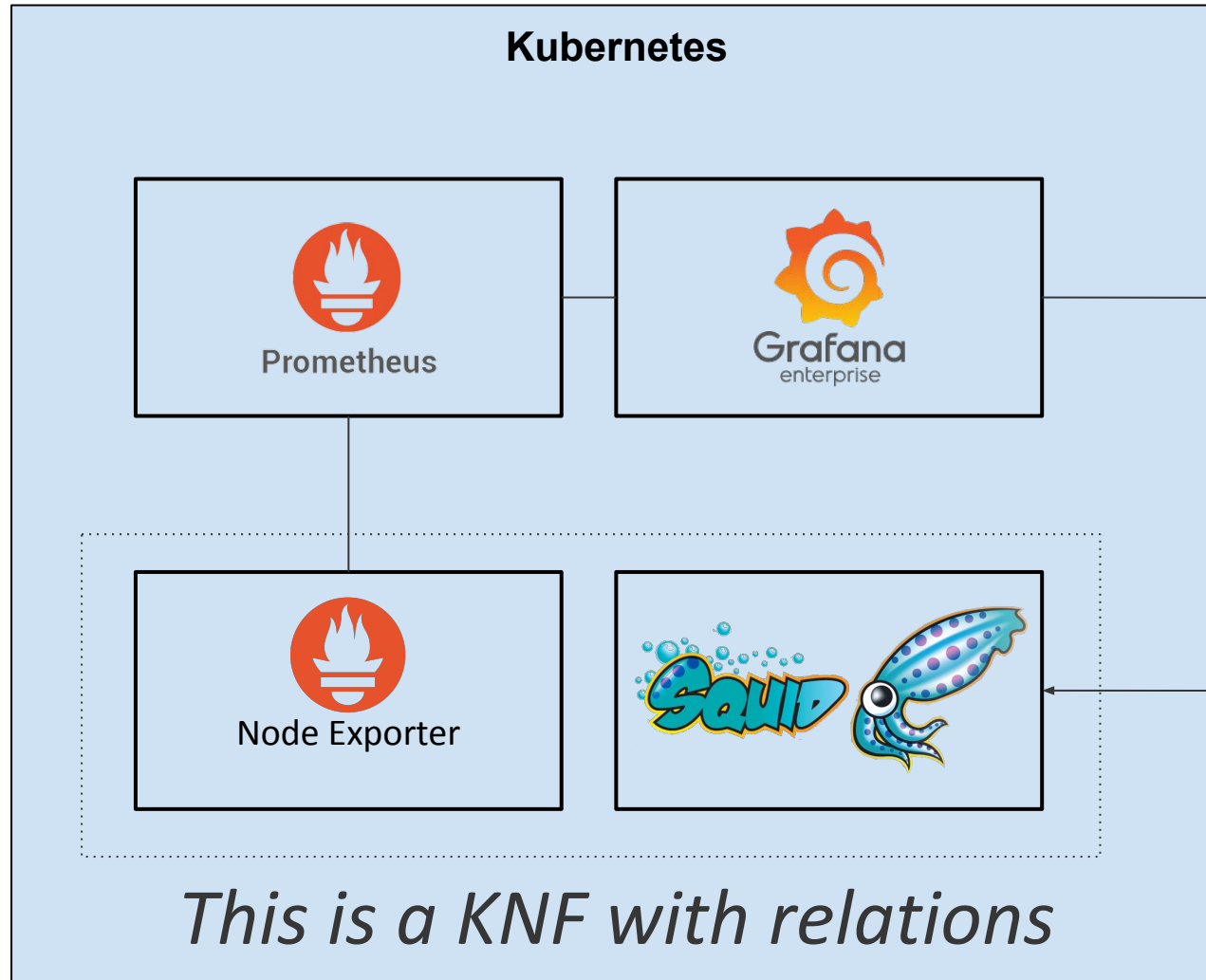
1. Performance monitor overview
2. Basics of Juju relations
3. Add node exporter to squid
4. Descriptors and onboarding to OSM
5. Deployment
6. Execute actions
7. Validation



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Performance monitor overview

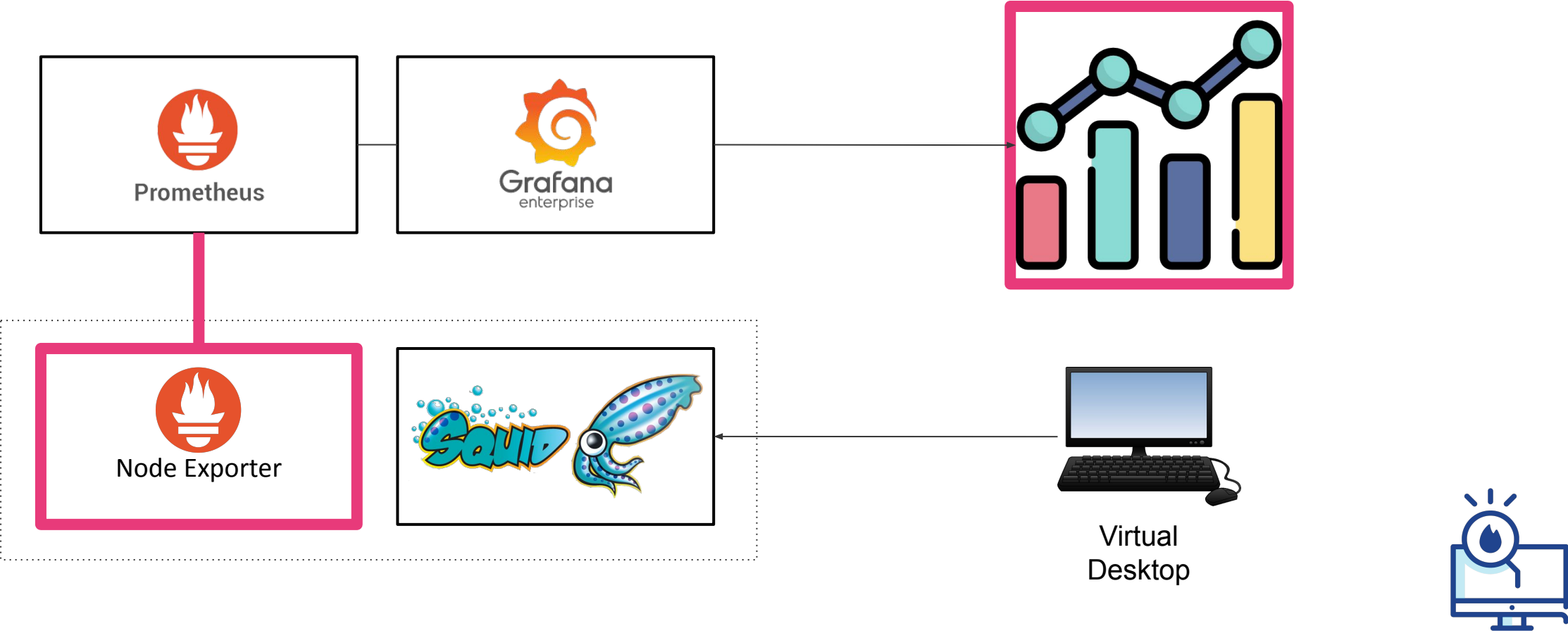
Performance Monitor



Virtual
Desktop



Focus of this session





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Basics of Juju relations

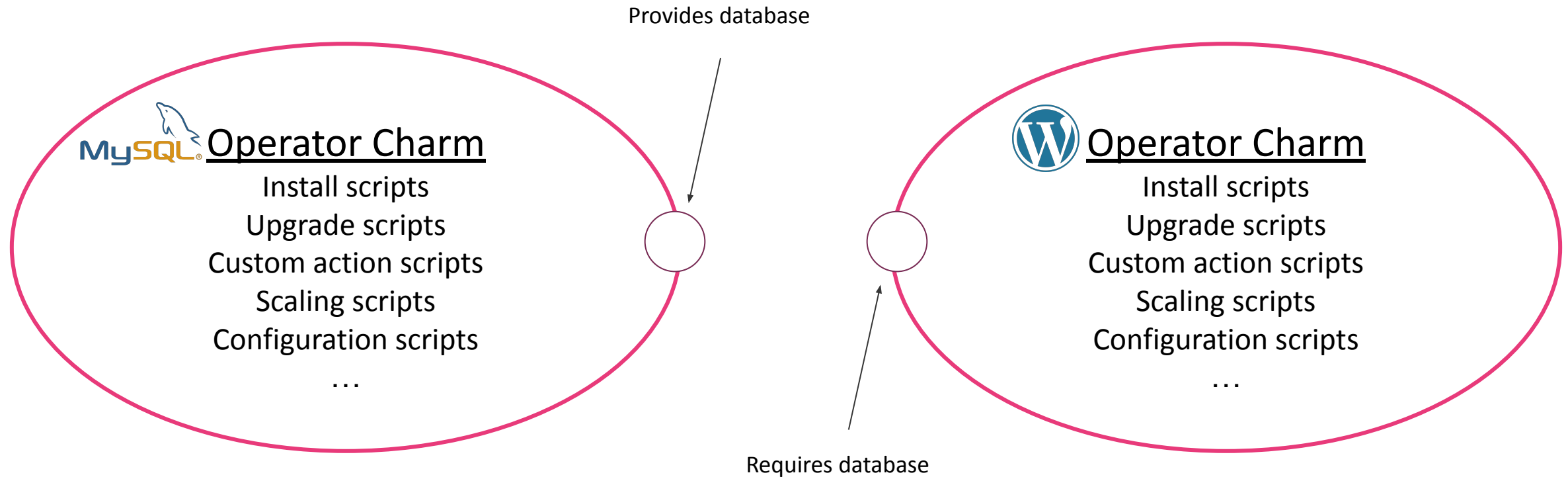
OSM orchestrates Network Functions

Physical Virtual Container

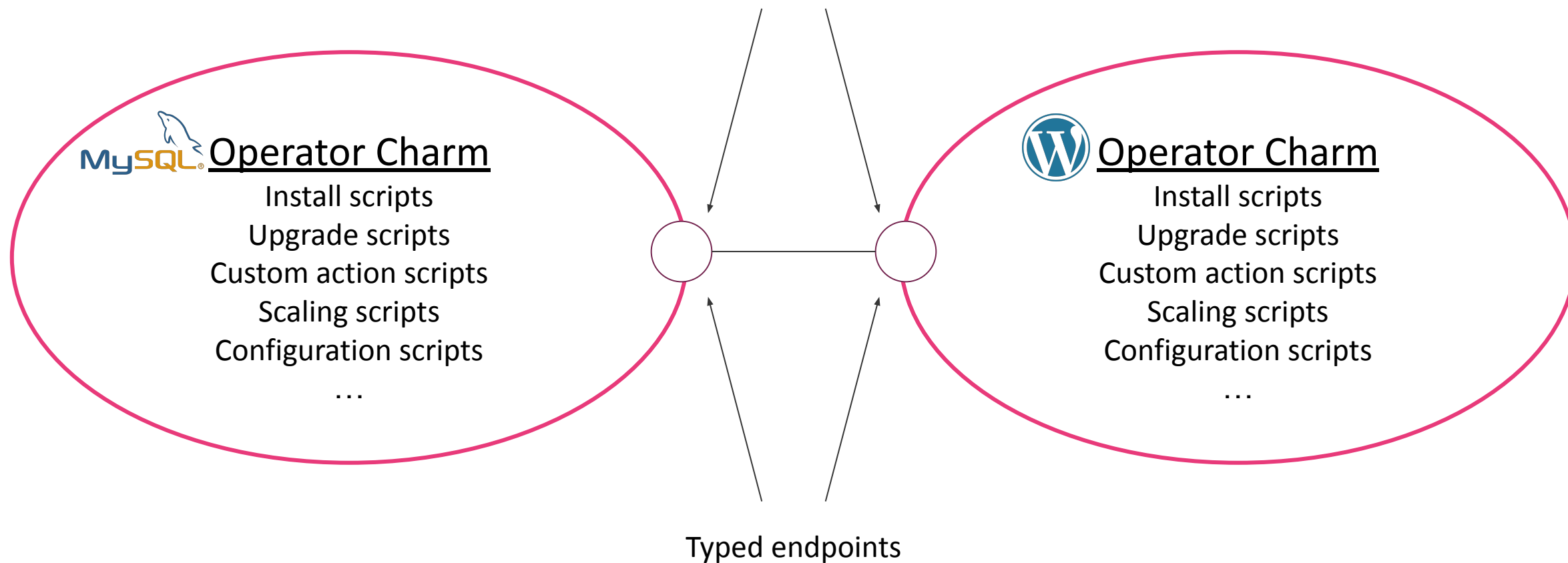
Understand the **challenge** of integration

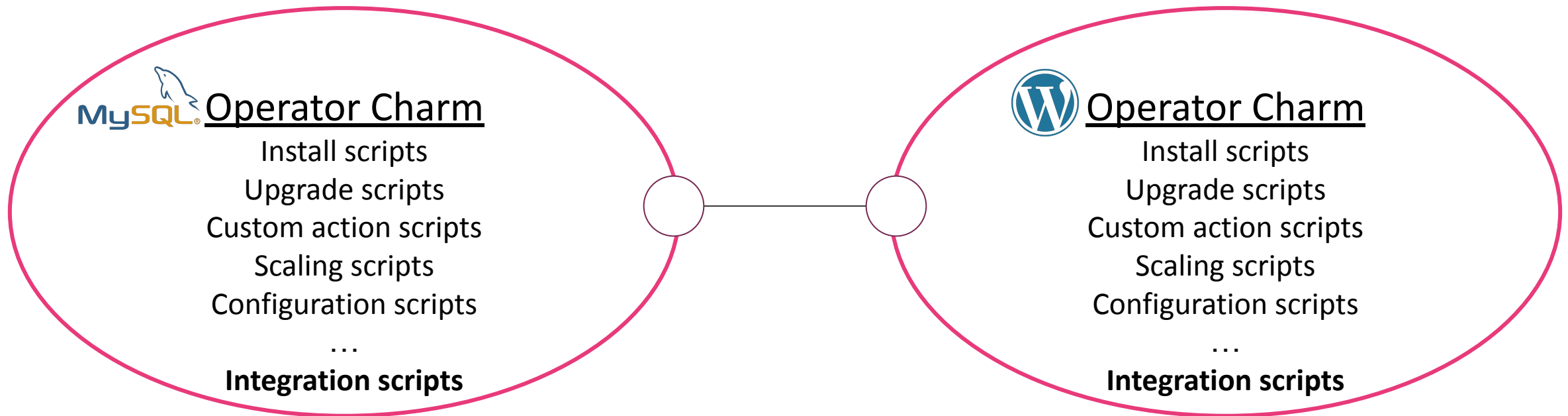
The integrations is done at the operator level

Relations are **integration between operators**



Matching endpoints can be related

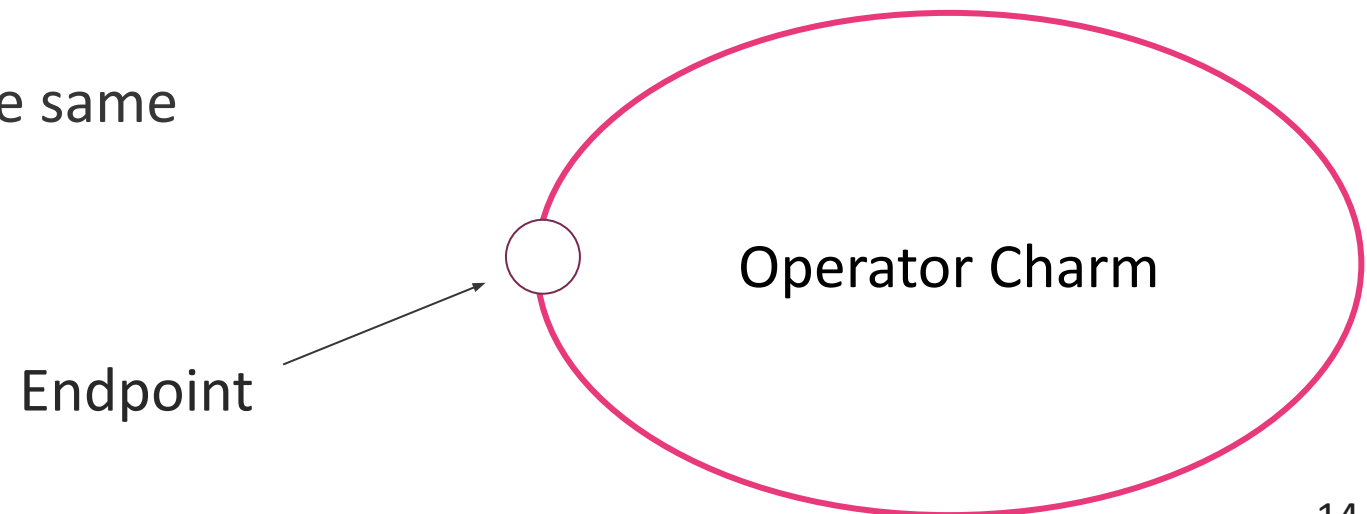




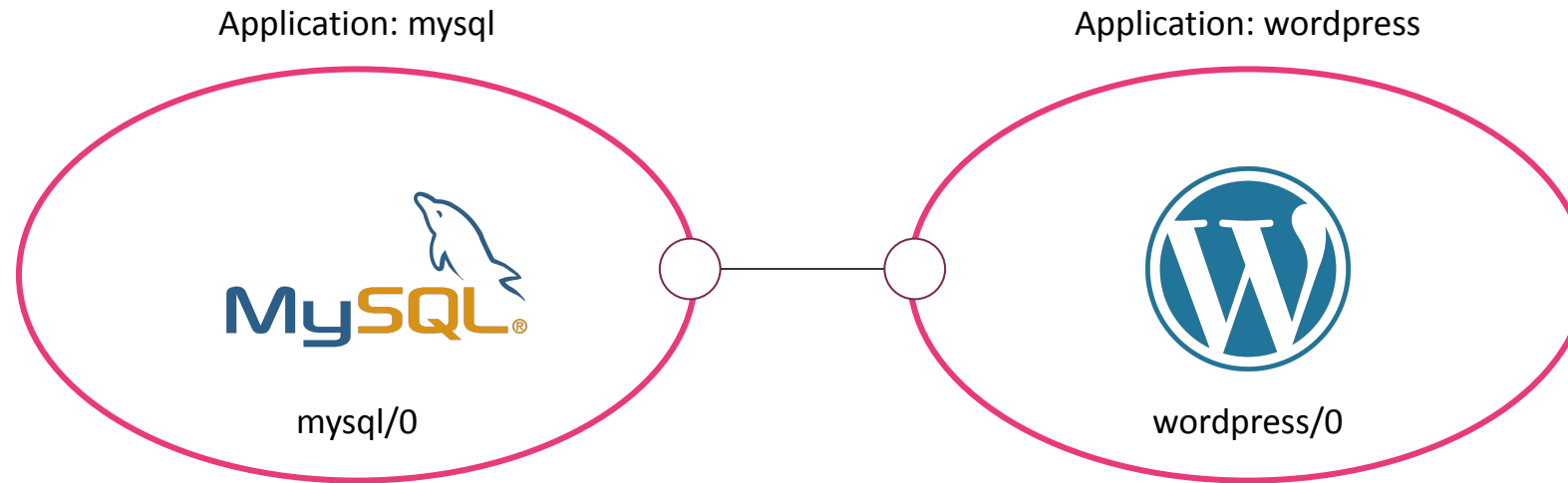
Endpoint

An endpoint is used to connect to another application's endpoint in order to form a relation.

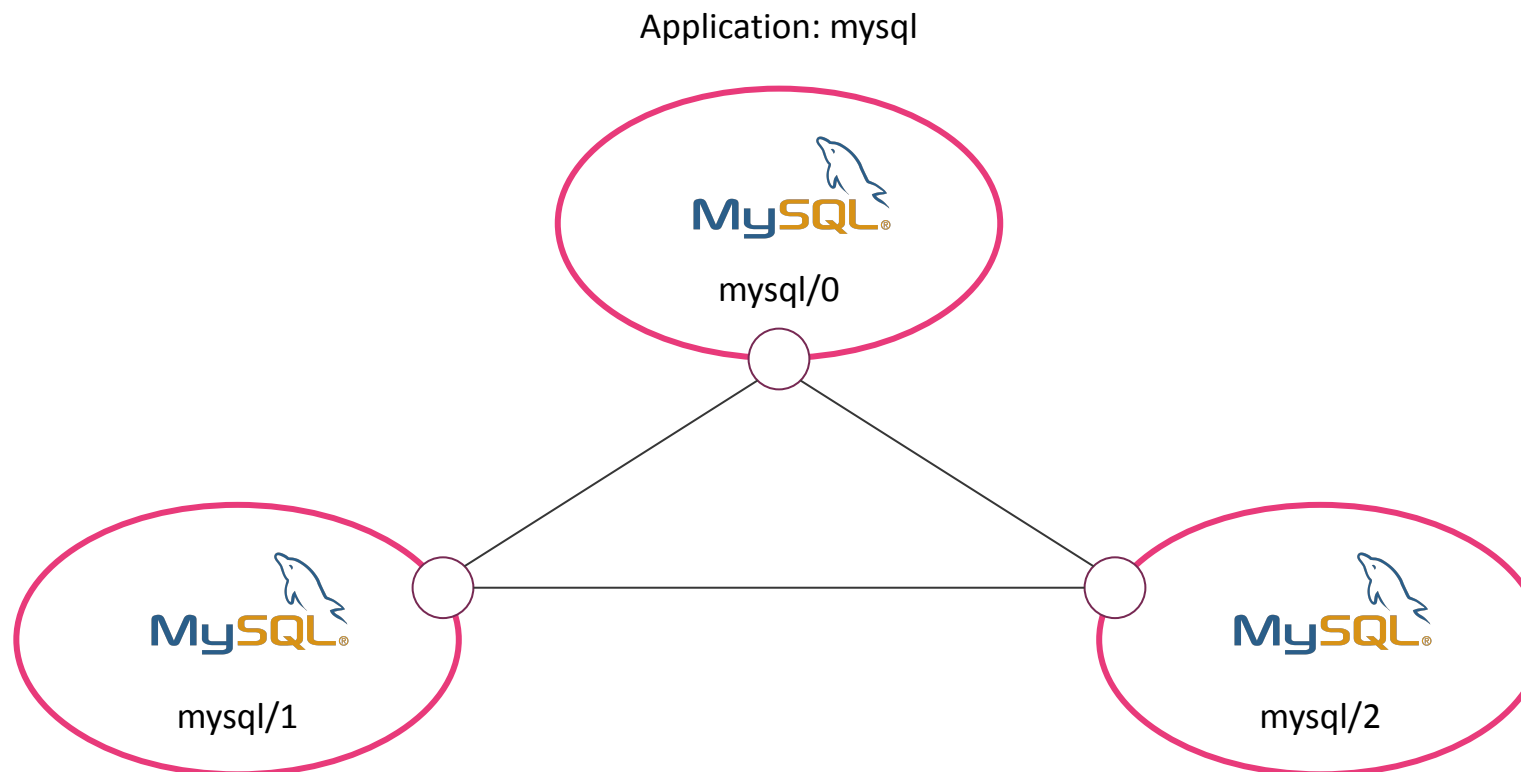
- Requires: The endpoint can make use of services represented by another charm's endpoint. These can be optional.
- Provides: Represents a service that another charm can make use of over a given interface
- Peers: only used between units of the same application



Relation: Provides-requires



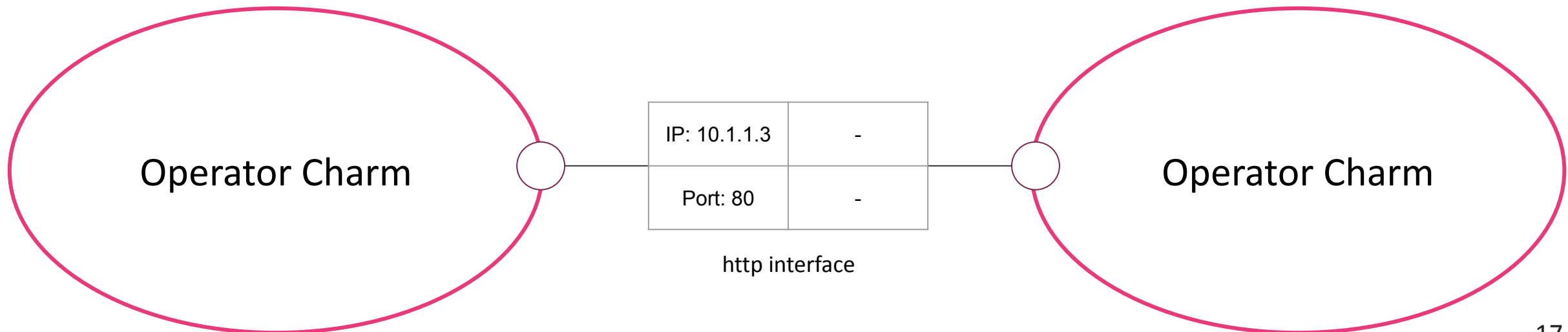
Relation: Peer

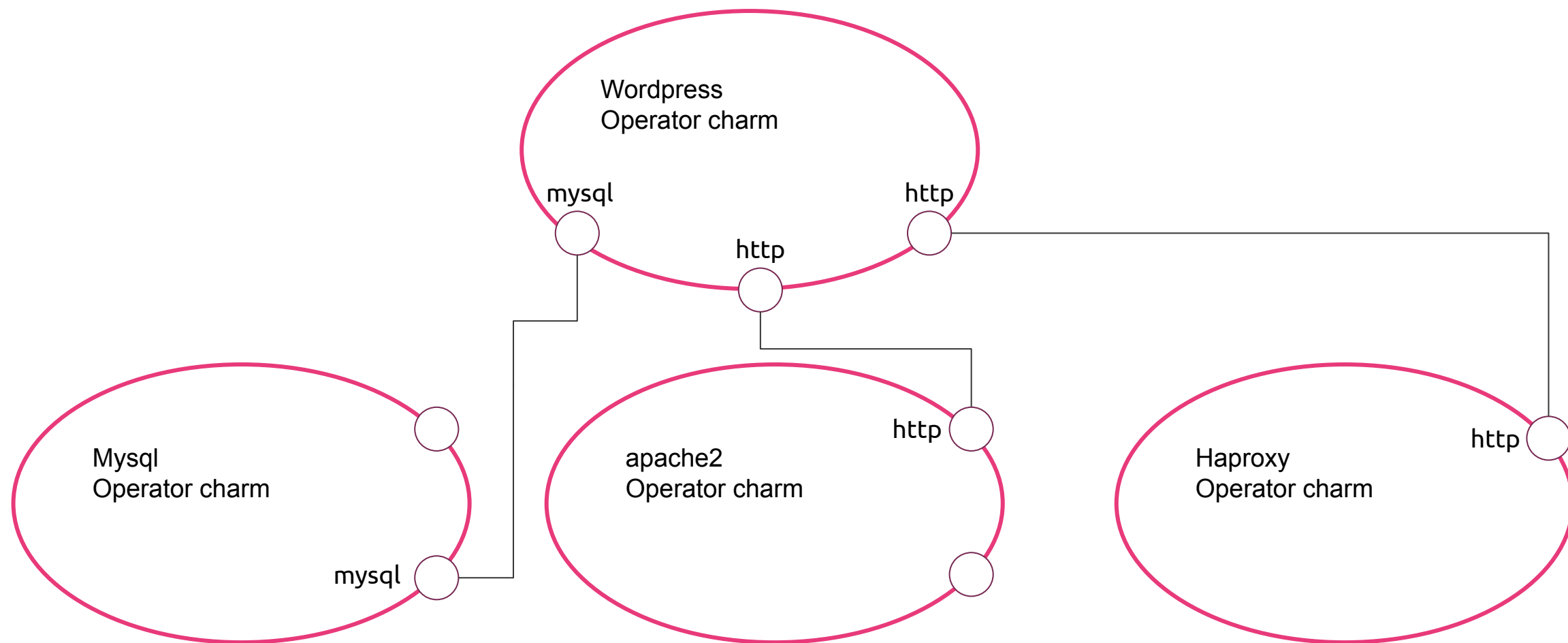


Interfaces

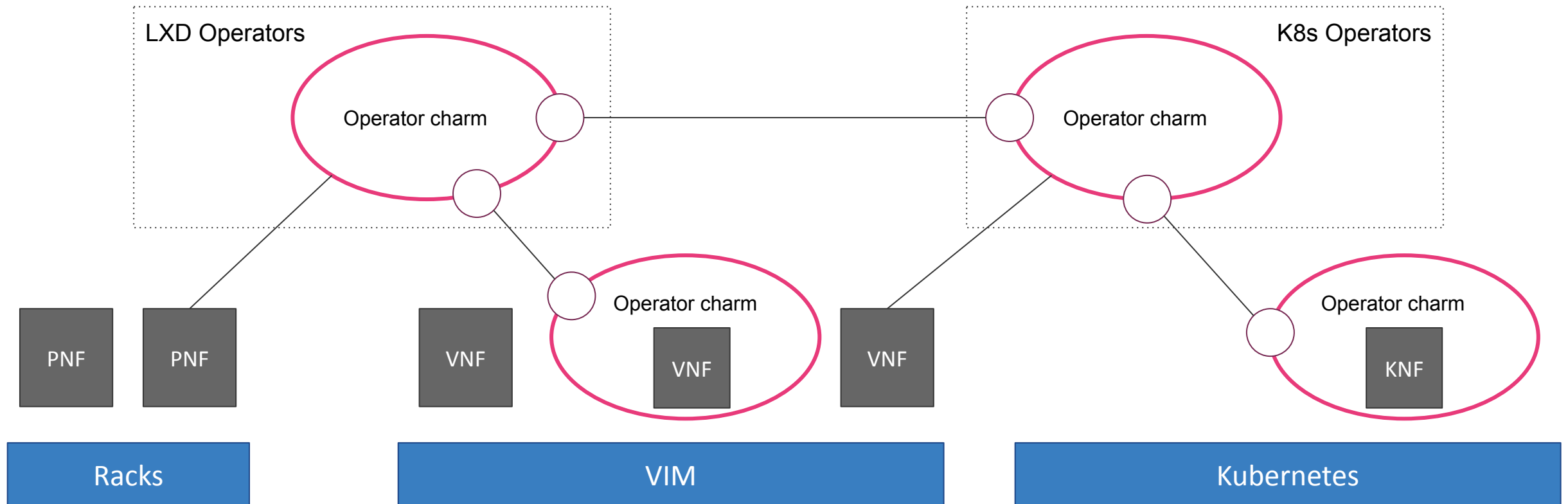
Is the communication protocol used over a relation between applications (i.e. http)

- Interfaces express which data must be exchanged in the relation
- Only endpoints with the same interface can be related





Reality is messy and mixed



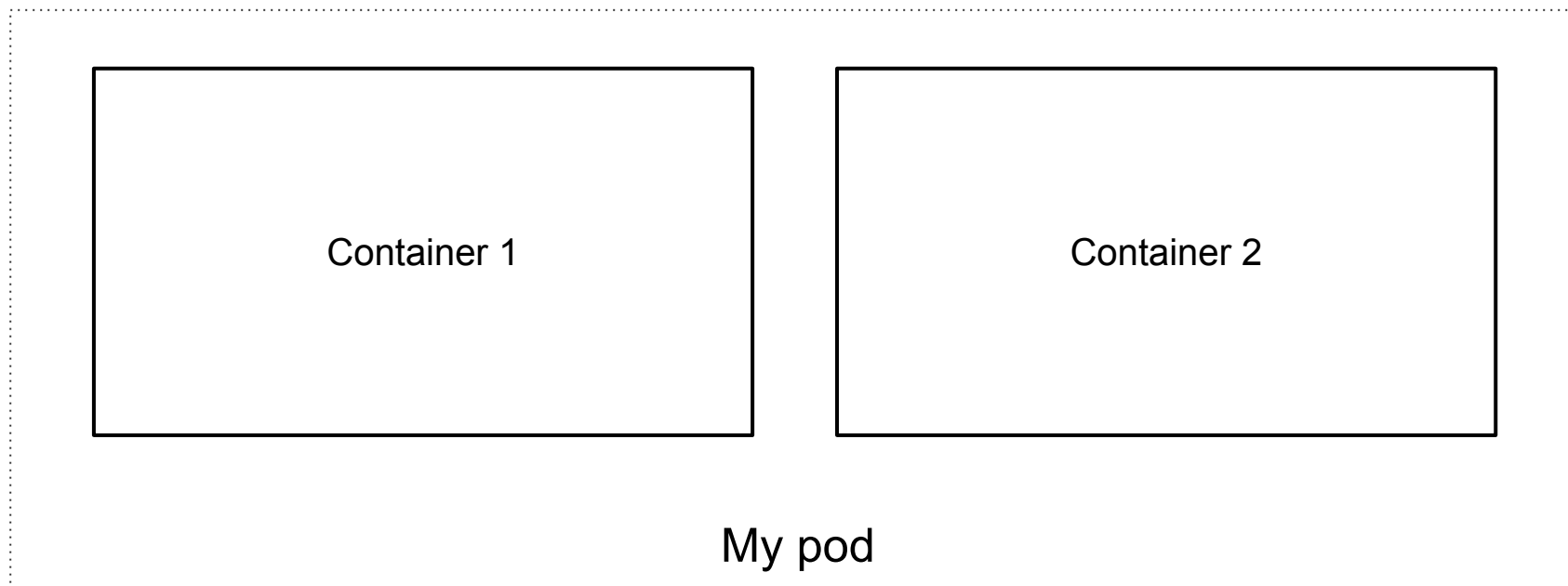
Charms are universal operators



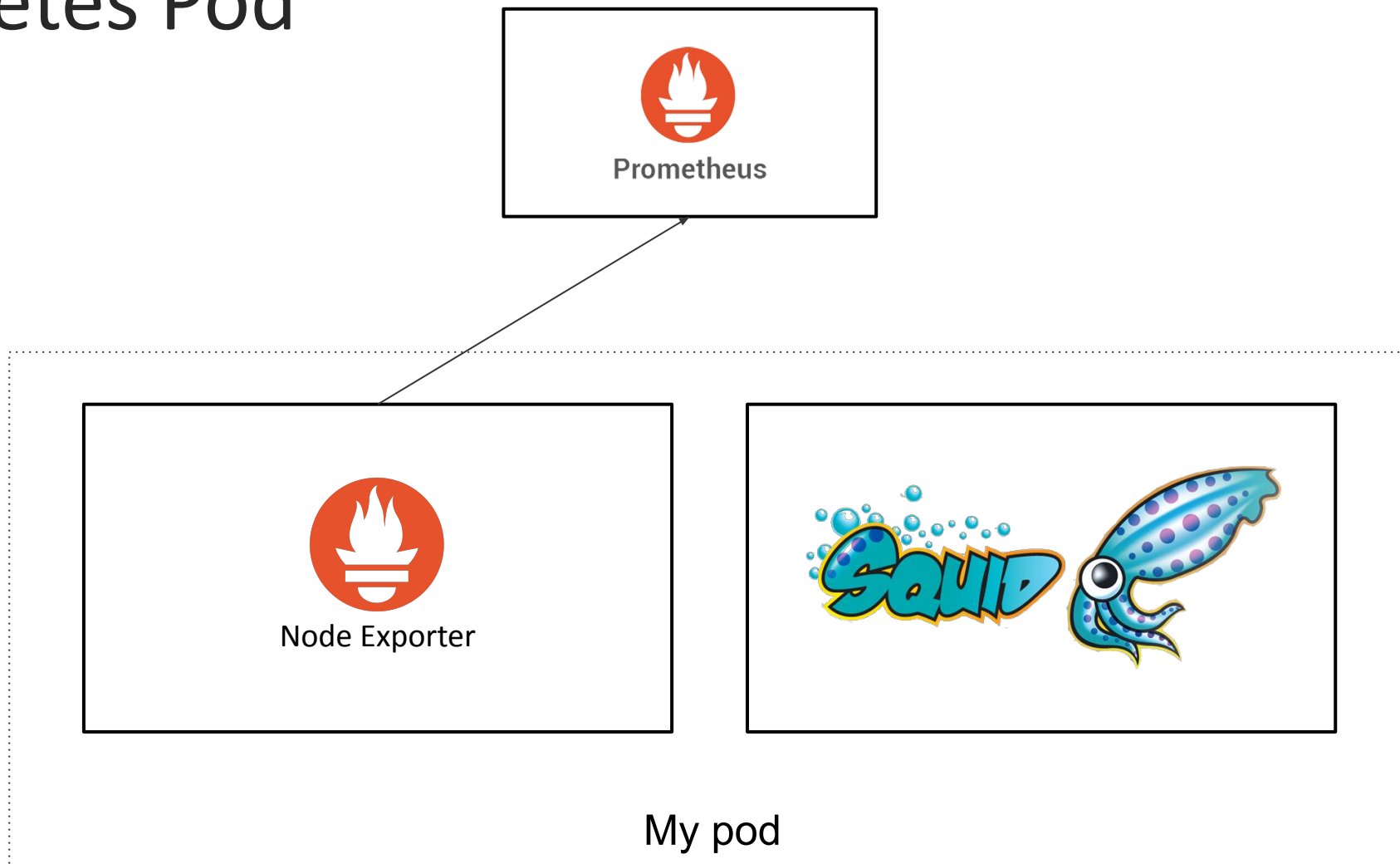
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Add node exporter to squid

Kubernetes Pod



Kubernetes Pod





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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:
  grafana:
    charm: ../charms/grafana-operator
    scale: 1
  prometheus:
    charm: ../charms/prometheus-operator
    scale: 1
  squid:
    charm: ../charms/squid-operator
    scale: 1
relations:
- - prometheus:grafana-source
  - grafana:grafana-source
- - squid:prometheus-target
  - prometheus:target
```

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/HD2.6-Juju-relations ~/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-metrics \  
               --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-metrics
```

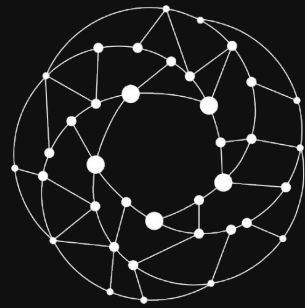


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Validation

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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Any questions?