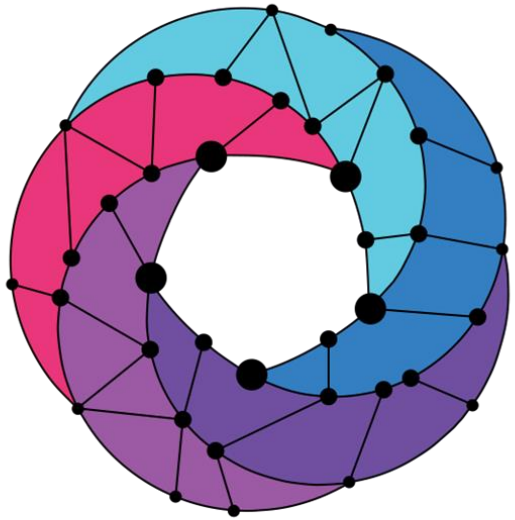

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OSM#10 Hackfest – Day 4
Session 3a. Modeling CNFs with helm charts

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ETSI

Session topics

- CNF package
  - Create a skeleton
  - Modify descriptor
  - Validate and build
  - Onboard
- NS package
  - Create a skeleton
  - Modify descriptor
  - Validate and build
  - Onboard
- LCM
  - Making OSM aware of the helm chart repo
  - Instantiate
  - Upgrade and rollback
  - Terminate

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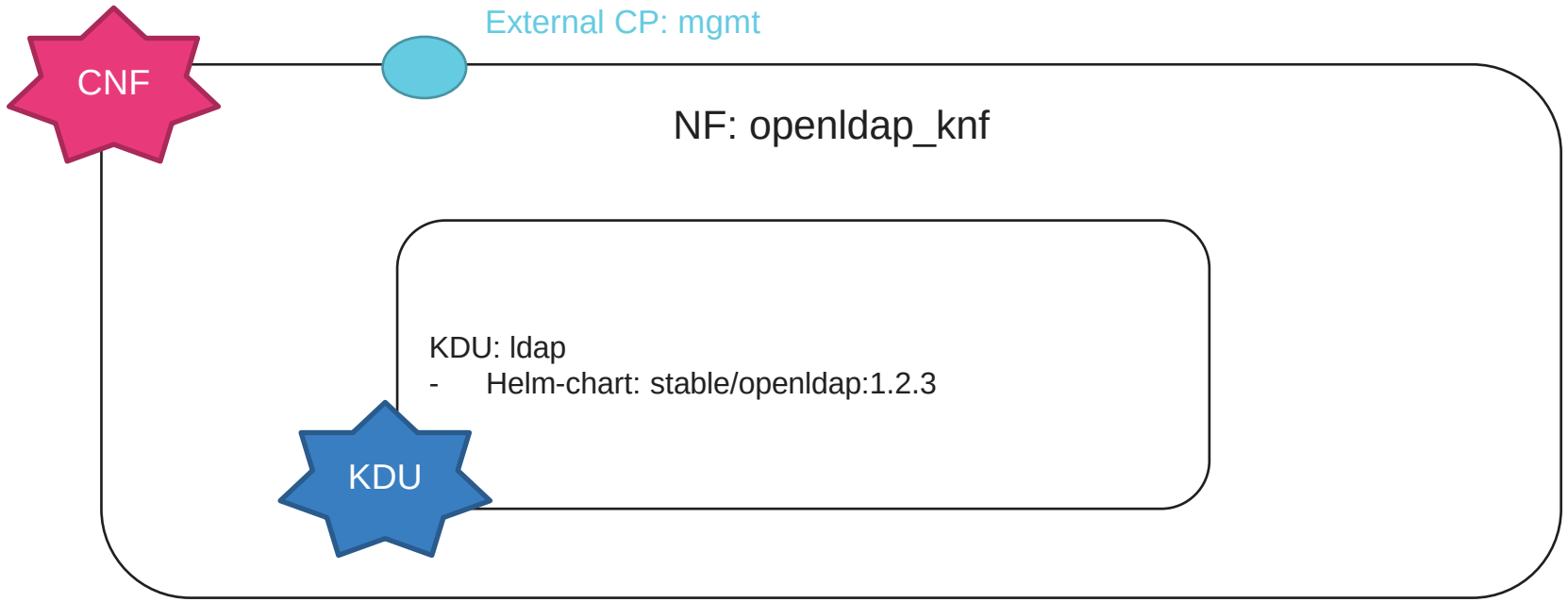
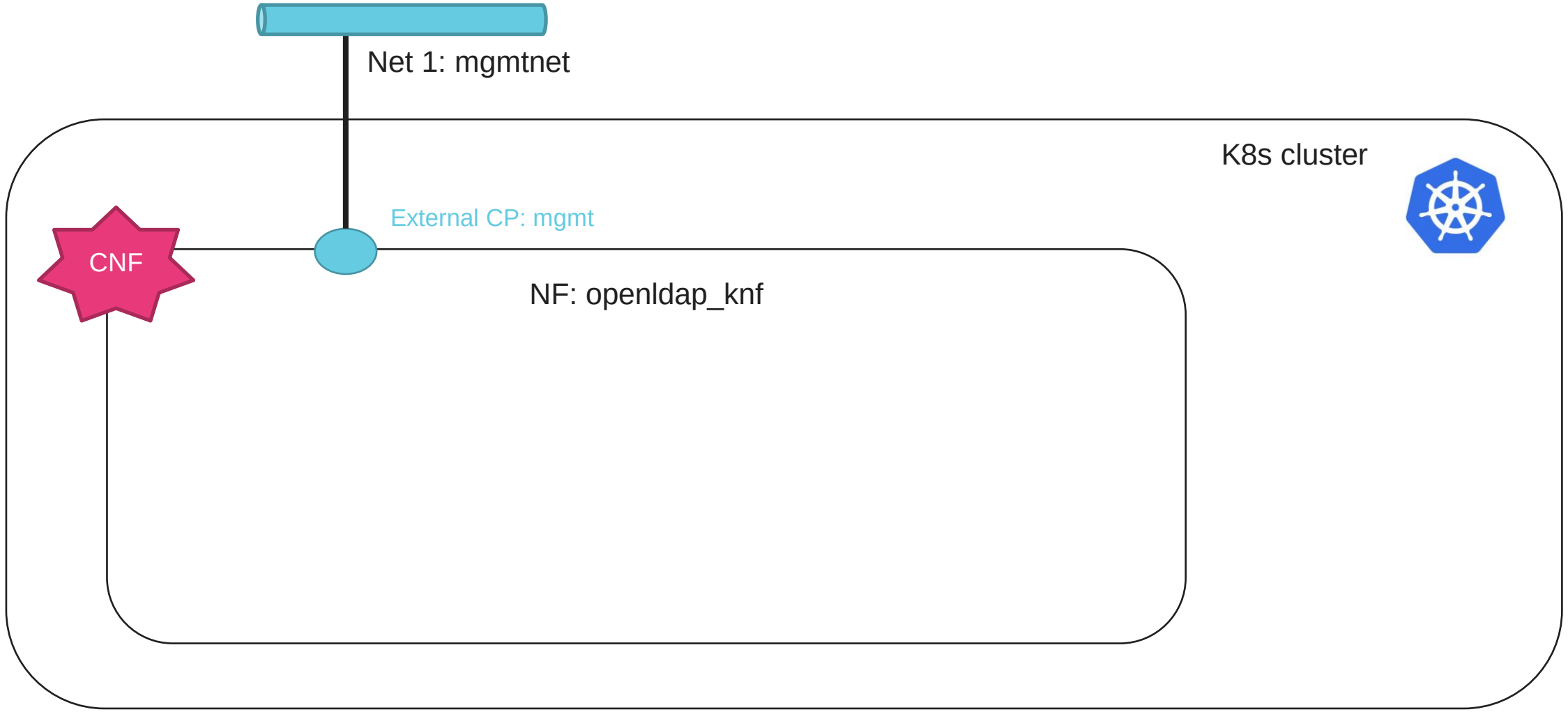
CNF package

CNF structure
The CNF consists of a single KDU (a helm chart)



CNF structure
K8s cluster requirements: a single network



CNF package
Create skeleton and modify descriptor

- Our CNF: an LDAP server based on openldap helm chart
  - Stable helm chart repo: https://charts.helm.sh/stable

- Create skeleton

```
osm package-create vnf openldap
```

- Modify descriptor (copy it from shared folder)

```
cp /home/ubuntu/examples/hd4/openldap_vnfd.yaml openldap_vnf/
```

CNF descriptor

```
vnfd-catalog:
  schema-version: '3.0'
  vnfd:
  - id: openldap_knf
    name: openldap_knf
    short-name: openldap_knf
    description: KNF with single KDU using a helm-chart for openldap version 1.2.3
    vendor: Telefonica
    version: '1.0'
    mgmt-interface:
      cp: mgmt
    connection-point:
    - name: mgmt
    k8s-cluster:
      nets:
      - id: mgmtnet
        external-connection-point-ref: mgmt
    kdu:
    - name: ldap
      helm-chart: stable/openldap:1.2.3
```

K8s cluster requirements: 1 network to expose services

One KDU based on helm chart magma/orc8r (repo:magma)

CNF package
Validate, build and onboard

- Validate

```
osm package-validate openldap_vnf
```

- Build

```
osm package-build openldap_vnf
```

- Onboard

```
osm nfpkg-create openldap_vnf.tar.gz
```

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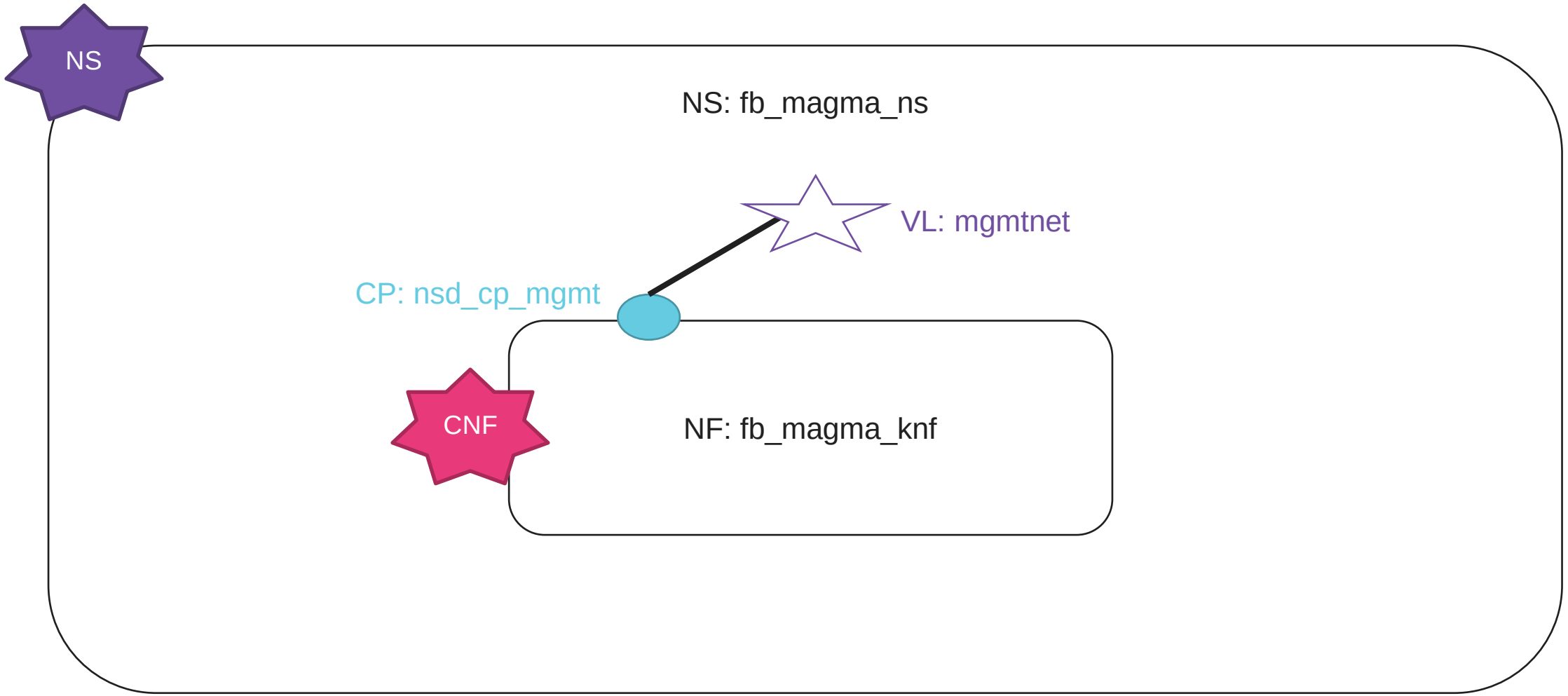
NS package

NS structure



NS package
Create skeleton and modify descriptor

- Our NS: a simple NS with 1 CNF and 1 VLD

- Create skeleton

```
osm package-create ns openldap
```

- Modify descriptor (copy it from shared folder)

```
cp /home/ubuntu/examples/hd4/openldap_nsd.yaml openldap_ns/
```

NS descriptor

```
nsd-catalog:
    nsd:
    -   id: openldap_ns
        name: openldap_ns
        short-name: openldap_ns
        description: NS consisting of a single KNF openldap_knf connected to mgmt network
        vendor: OSM
        version: '1.0'
        logo: osm.png
        constituent-vnfd:
        -   member-vnf-index: openldap
            vnfd-id-ref: openldap_knf
        vld:
        -   id: mgmtnet
            name: mgmtnet
            type: ELAN
            mgmt-network: 'true'
            vnfd-connection-point-ref:
            -   member-vnf-index-ref: openldap
                vnfd-id-ref: openldap_knf
                vnfd-connection-point-ref: mgmt
```

One CNF: openldap_knf

One VL where the CNF will expose its services

NS package
Validate, build and onboard

- Instead of using 3 commands, we will use only one

```
osm nspkg-create openldap_ns
```

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Life Cycle Mgmt (LCM) of the NS

Adding a helm-chart repo

- We don’t need to add a repo because the stable helm chart repo is added by default

- Example:

```
osm repo-add --type helm-chart \
             --description "Bitnami helm chart repo" \
             bitnami "https://charts.bitnami.com/bitnami"
```

Instantiate

- Launch the NS

```
osm ns-create --ns_name ldap --nsd_name openldap_ns \
              --vim_account osm_hackfest_XX
```

- Check status of NS in OSM (READY)

```
osm ns-list
```

Checking status of the KDU instance

- Once ready, get the details of the KDU

```
osm vnf-list --ns ldap
VNF_ID=`osm vnf-list --ns ldap |grep ldap |awk '{print $2}'`
osm vnf-show $VNF_ID --kdu ldap
```

- You can also check the status of the deployment in K8s (one namespace per OSM project):

```
osm project-list
PROJECT_ID=`osm project-list|grep $OSM_PROJECT|awk '{print $4}'`
kubectl -n $PROJECT_ID --kubeconfig ~/kube.yaml get all
```

Upgrade

- Upgrade your KDU to use 2 replicas

```
osm ns-action ldap --vnf_name openldap --kdu_name ldap \
                   --action_name upgrade --params '{"replicaCount": "2"}'
osm ns-op-list ldap
```

Rollback

- Rollback to the previous state

```
osm ns-action ldap --vnf_name openldap --kdu_name ldap --action_name rollback
osm ns-op-list ldap
```

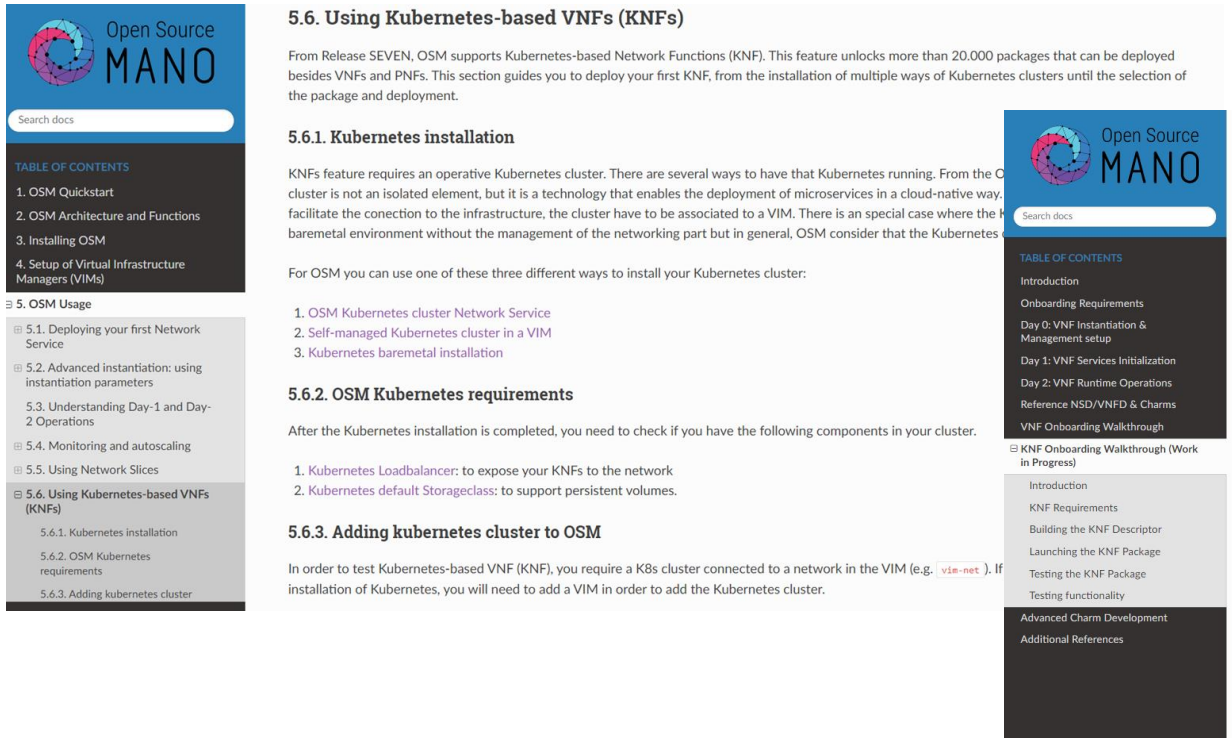
Terminate

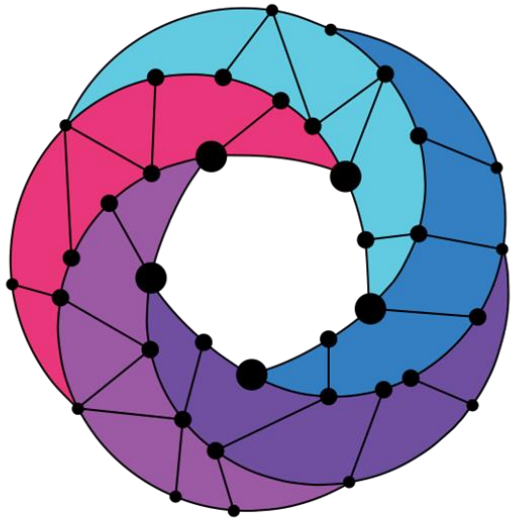
- Delete the NS

```
osm ns-delete magma_orc8r
osm ns-list
```

More information

- User Guide - Using Kubernetes-based VNFs
- VNF Onboarding Guidelines - KNF walkthrough
- OSM Client Reference Guide - Package creation tools





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