OSM Hackfest – Session 2
Creating a basic VNF and NS

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VNF diagram

Connection point: vnf-cp0

VNF: hackfest1-vnf

VDU:
- Name: vdu1
- Resources: 1 CPU, 1GB RAM, 10 GB disk
- Image name: ubuntu1604

Interface: vdu-eth0
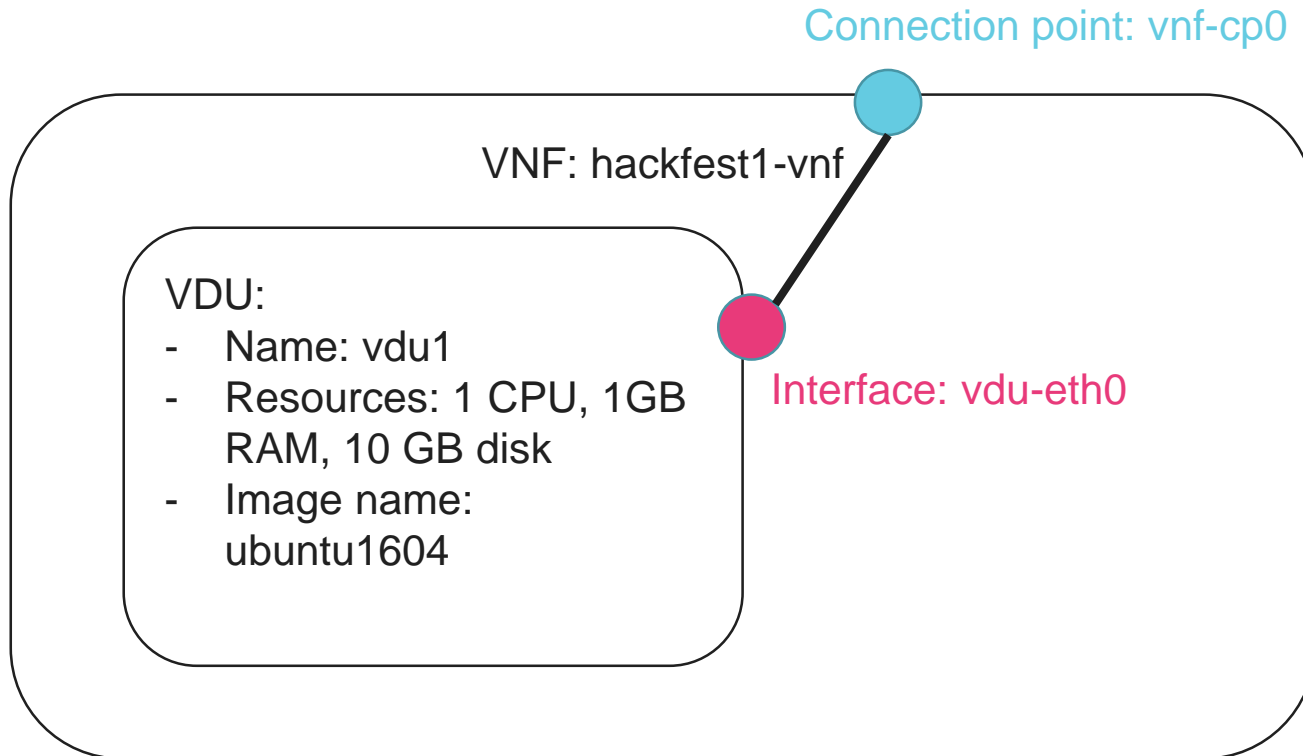
Creating the VNF with the client

- Generate skeleton folder (VNF with only 1 VDU)
    - /usr/share/osm-devops/descriptor-packages/tools/generate_descriptor_pkg.sh -t vnfd --image ubuntu1604 -c hackfest1

- Go to hackfest1_vnfd folder and edit the descriptor:
    - Use the IM tree representation of VNFD as a reference:
        - http://osm-download.etsi.org/ftp/osm-doc/vnfd.html
    - Descriptor language is YAML:
        - Indentation is part of the markup
        - Use always the same indentation characters (TAB, 4 spaces, 2 spaces)
            - Recommendation: spaces preferred over tab

Editing the VNF descriptor

```
vnfd:
-   id: hackfest1-vnf
    name: hackfest1-vnf
    ...
    mgmt-interface:
        cp: vnf-cp0
    vdu:
    -   id: hackfest1_vnfd-VM
        name: hackfest1_vnfd-VM
        vm-flavor:
            vcpu-count: 1
            memory-mb: 1024
            storage-gb: 10
        image: ubuntu1604
        alternative-images:
        -   vim-type: aws
            image: ubuntu/images/hvm-ssd/ubuntu-artful-17.10-amd64-server-20180509
        interface:
        -   name: vdu-eth0
            virtual-interface:
                type: VIRTIO
                ...
            external-connection-point-ref: vnf-cp0
    connection-point:
    -   name: vnf-cp0
        ...
```

Validate the VNF descriptor and generate VNF package

- Validate VNF descriptor
  - /usr/share/osm-devops/descriptor-packages/tools/validate_descriptor.py <DESCRIPTOR_FILE>

- Generate VNF package (from parent folder)
  - /usr/share/osm-devops/descriptor-packages/tools/generate_descriptor_pkg.sh -t vnfd -N <VNFD_FOLDER>

NS diagram

NS: hackfest1-ns

VL: mgmtnet

Connection point: vnf-cp0

VNF: hackfest1-vnf
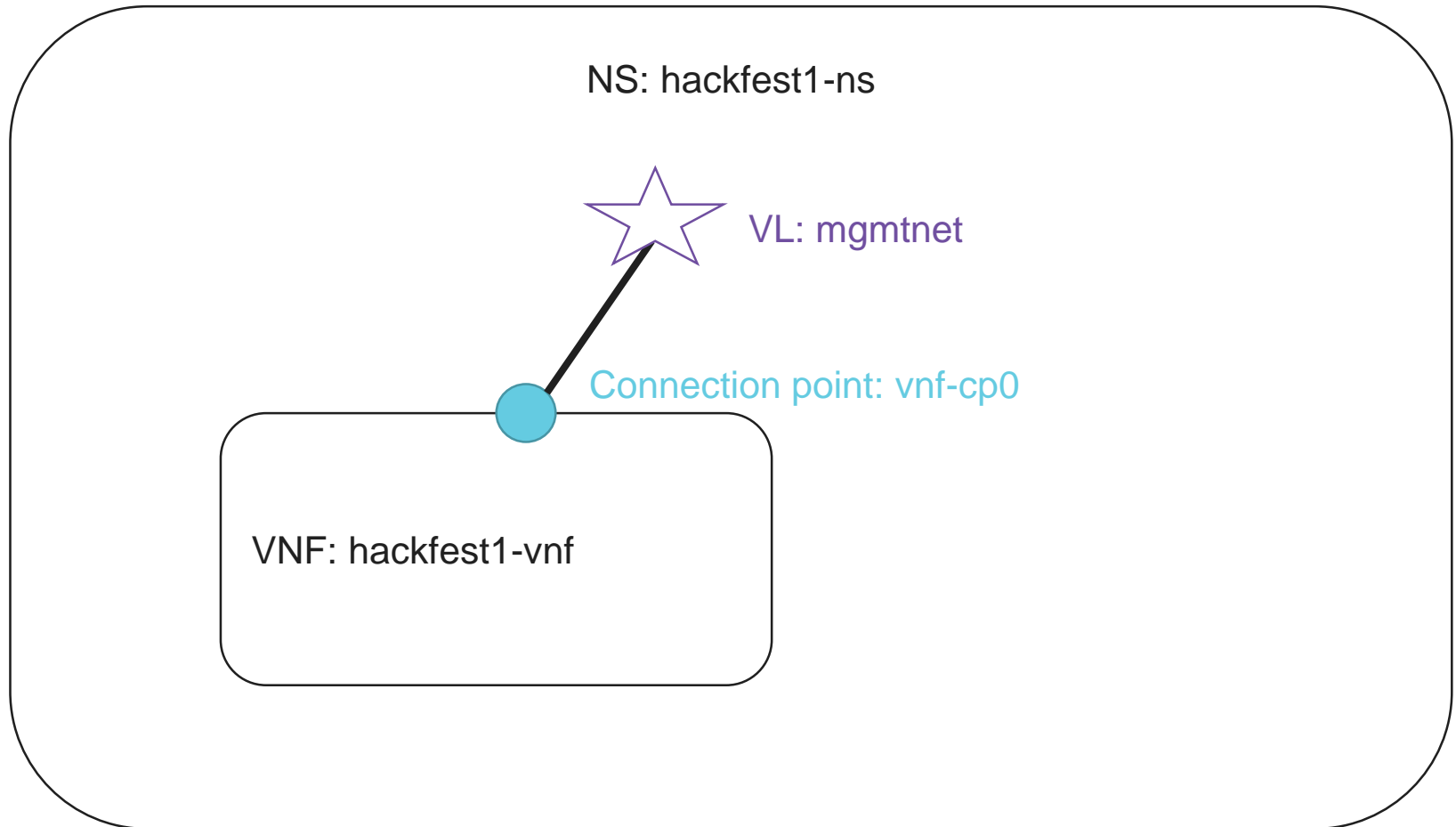
Creating the NS with the client

- Generate skeleton folder (NS with only 1 VNF)
  - /usr/share/osm-devops/descriptor-packages/tools/generate_descriptor_pkg.sh -t nsd -c hackfest1

- Go to hackfest1_nsd folder and edit the descriptor:
  - Use the IM tree representation of NSD as a reference:
    - http://osm-download.etsi.org/ftp/osm-doc/nsd.html
  - Descriptor language is YAML:
    - Indentation is part of the markup
    - Use always the same indentation characters (TAB, 4 spaces, 2 spaces)
      - Recommendation: spaces preferred over tab

Editing the NS descriptor

```
nsd:
-    id: hackfest1-ns
     name: hackfest1-ns
     ...
     constituent-vnfd:
     -    member-vnf-index: 1
          vnfd-id-ref: hackfest1-vnf
     vld:
     -    id: mgmtnet
          name: mgmtnet
          type: ELAN
          mgmt-network: true
          vnfd-connection-point-ref:
          -    member-vnf-index-ref: 1
               vnfd-connection-point-ref: vnf-cp0
               vnfd-id-ref: hackfest1-vnf
```

Validate the NS descriptor and generate NS package

- Validate NS descriptor
  - /usr/share/osm-devops/descriptor-packages/tools/validate_descriptor.py <DESCRIPTOR_FILE>

- Generate NS package (from parent folder)
  - /usr/share/osm-devops/descriptor-packages/tools/generate_descriptor_pkg.sh -t nsd -N <NSD_FOLDER>

Before the deployment
Adding VNF and NS packages

- VNF package:
  - osm vnfd-list
  - osm vnfd-create hackfest1_vnfd.tar.gz
  - osm vnfd-show hackfest1-vnf
  - osm vnfd-delete …

- NS package:
  - osm nsd-list
  - osm nsd-create hackfest1_nsd.tar.gz
  - osm nsd-show hackfest1-ns
  - osm nsd-delete …

- Generating an SSH key pair to access to VNFs later
  - ssh-keygen

Deploying NS with the client

- osm ns-list

- osm ns-create --ns_name hf1 --nsd_name hackfest1-ns \
  --vim_account <VIM_ACCOUNT_NAME>|<VIM_ACCOUNT_ID> \
  --ssh_keys <KEY1_PUBKEY_FILE> \
  --config '{vld: [{name: mgmtnet, vim-network-name: <VIM_MGMT_NAME>}] }'

- osm ns-show hf1

- osm ns-delete …

- Check VNF instances to see the instance and get the mgmt IP address of the VNF
  - osm vnf-list
  - osm vnf-show …

- Connect to the VNF:
  - ssh -i <priv_key> ubuntu@<IP>

Deploying NS with the UI

- Go to NS packages

- In hackfest1-ns, click in "Actions: Instantiate NS"

- Complete the form
  - Add a name to the NS instance
  - Select the Datacenter where the NS will be deployed
  - Specify in the config section a default VIM network name to map "mgmtnet":
    - {vld: [{name: mgmtnet, vim-network-name: <VIM_MGMT_NAME>}] }
      - mgmt (openstack1)
      - external (openstack3)
      - public (openstack4)
  - Paste your SSH key

- Go to VNF instances to see the instance and get the mgmt IP address of the VNF

- Connect to the VNF:
  - ssh -i <priv_key> ubuntu@<IP>
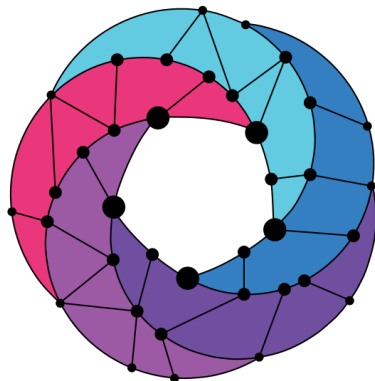
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