OSM Hackfest – Session 3
Adding day-0 configuration to VNFs
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What is cloud-init and what can be used for?

- It is a Linux package used to automate initial configuration of a VM

- VM requirements:
  - Cloud-init package
  - Cloud-init configuration (data source) via /etc/cloud/cloud.cfg
    - Config drive
    - Openstack metadata server
    - ...

- What can be done?
  - Setting a default locale
  - Setting an instance hostname
  - Generating instance SSH private keys
  - Adding SSH keys to a user’s .ssh/authorized_keys so they can log in
  - Setting up ephemeral mount points
  - Configuring network devices
  - Adding users and groups
  - Adding files

Cloud-init support in OSM

- Cloud-init is only available in Linux VMs

- Not all VIMs support cloud-init via a metadata server

- While cloud-init is supported in OSM, the recommendation is to use charms and initial-config-primitive
External Connection point: vnf-mgmt

VDU: mgmtVM
- Image name: hackfest3-mgmt
- VM Flavor: 1 CPU, 1GB RAM, 10 GB disk
- Interfaces:
  - mgmtVM-eth0: VIRTIO
  - mgmtVM-eth1: VIRTIO
- Cloud init input

VL: internal

ICP: mgmtVM-internal

External Connection point: vnf-data

VDU: dataVM
- Image name: hackfest3-mgmt
- VM Flavor: 1 CPU, 1GB RAM, 10 GB disk
- Interfaces:
  - dataVM-eth0: VIRTIO
  - dataVM-xe0: VIRTIO
Creating the VNF in the UI (1/2)

• Go to the catalog
• Copy VNF hackfest2
• Modify the new VNF
  • Name: hackfest3-vnf
• Modify VDU mgmtVM:
  • Image name: hackfest3-mgmt
  • Cloud init input:
    • Filename
      • Cloud init file: cloud-config.txt
Creating the VNF in the UI (2/2)

- Modify VDU dataVM:
  - Image name: hackfest3-mgmt

- Add a new asset:
  - CLOUD_INIT:
    - Upload file: cloud-config.txt
    - It can be downloaded from: https://osm-download.etsi.org/ftp/osm-3.0-three/1st-hackfest/other/cloud-config.txt

- Click on UPDATE to save your VNF
Cloud-init file

• Download it from here:
  • [https://osm-download.etsi.org/ftp/osm-3.0-three/1st-hackfest/other/cloud-config.txt](https://osm-download.etsi.org/ftp/osm-3.0-three/1st-hackfest/other/cloud-config.txt)

• Content:

```
#cloud-config
password: osm4u
chpasswd: { expire: False }
ssh_pwauth: True

write_files:
- content: |
  # My new helloworld file
  
  owner: root:
  permissions: '0644'
  path: /root/helloworld.txt
```

A password is added for the default user (‘ubuntu’). This will be used by the charm in Hackfest session 5.

A new file ‘/root/helloworld.txt’ will be created at VM creation to illustrate the way this feature works.
NS diagram
Changes highlighted in yellow

NS: hackfest3-ns

VL: mgmtnet
CP: vnf-mgmt
CP: vnf-mgmt

VNF: hackfest3-vnf

VL: datanet
CP: vnf-data
CP: vnf-data
Creating the NS in the UI (1/2)

1. Go to the catalog
2. Add NSD
   - Name: hackfest3-ns
3. Add 2 VNFs (hackfest3-vnf) by drag and drop
4. Add first VLDs:
   - VLD1:
     - name (optional): mgmtnet
     - TYPE: ELAN
     - MGMT NETWORK: True
     - INIT PARAMS
       - vim-network-ref
         - VIM NETWORK NAME: mgmt <- In order to have a default mapped VIM network name
Creating the NS in the UI (2/2)

- Add second VLD:
  - VLD2:
    - name (optional): datanet
    - TYPE: ELAN
    - MGMT NETWORK: False (default)

- Connect VNF Connection Points to the VLs:
  - vnf-mgmt to VLD:mgmtnet
  - vnf-data to VLD:datanet

- Click on UPDATE
Deploying NS in the UI

- Go to Launchpad > Instantiate
- Select hackfest3-ns and click Next
- Complete the form
  - Add a name to the NS
  - Select the Datacenter where the NS will be deployed
  - Add SSH key
- Go to the dashboard to see the instance and get the mgmt IP address of the VNF
- Connect to each VNF:
  - `ssh ubuntu@<IP>`
- Check that the cloud-config file was executed