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
VNF diagram
Changes highlighted in yellow

External Connection point: vnf-mgmt

External Connection point: vnf-data

VNF: hackfest3-vnf

VL: internal

ICP: mgmtVM-internal

ICP: dataVM-internal

mgmtVM-eth0

mgmtVM-eth1

dataVM-eth0

dataVM-xe0

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

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/2nd-hackfest/other/cloud-config.txt

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

- Download it from here:

- Content:

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

write_files:
- content: |
  # My new helloworld file
  
  owner: root: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
VNF: hackfest3-vnf
VL: datanet
CP: vnf-data

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Creating the NS in the UI (1/2)

• Go to the catalog
• Add NSD
  • Name: hackfest3-ns
• Add 2 VNFs (hackfest3-vnf) by drag and drop
• 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
• 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