OSM Hackfest – Session 4
Adding day-0 configuration to VNFs
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What is cloud-init and what can it 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

• Docs: http://cloudinit.readthedocs.io/en/latest/
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

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

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

VNF: hackfest3-vnf

VL: internal

ICP: mgmtVM-internal

ICP: dataVM-internal

mgmtVM-eth0

mgmtVM-eth1

dataVM-eth0
dataVM-xe0
Creating the VNF (1/2)

• Go to the command line
• Copy VNF hackfest2 folder and rename it to hackfest3
• Modify the new VNF
  • Name: hackfest3-vnf
• Modify VDU mgmtVM:
  • Image name: hackfest3-mgmt
  • Cloud init input:
    • Filename
      • Cloud init file: cloud-config.txt
• 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-4.0-four/3rd-hackfest/other/cloud-config.txt

• Onboard your new VNFD to the system.
Let's explore the Cloud-init file

• Download it from here:
  • [https://osm-download.etsi.org/ftp/osm-4.0-four/3rd-hackfest/other/cloud-config.txt](https://osm-download.etsi.org/ftp/osm-4.0-four/3rd-hackfest/other/cloud-config.txt)

• Content:

```plaintext
#cloud-config
password: osm4u
chpasswd: { expire: False }
ssh_pwauth: 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 7.

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

VNF: hackfest3-vnf

CP: vnf-mgmt

VNF: hackfest3-vnf

CP: vnf-data
Creating the NS (1/2)

• Add NSD
  • Name: hackfest3-ns

• Add 2 VNFs (hackfest3-vnf)

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

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

• Onboard your NSD
Deploying NS in the UI

- Select hackfest3-ns and instantiate it
- 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