OSM Hackfest – Session 7b
Adding Charms to your VNF Descriptor
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VNF diagram
Changes with respect to ‘hackfest_cloudinit-vnf’

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**VNF: hackfest-simplecharm-vnf**

**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-mgmt**

**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-configuration:
- juju
- initial-config-primitive
- config-primitive

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Generate the skeleton of the VNF Package and write the VNF descriptor

Copy VNF hackfest_cloudinit-vnf to hackfest_simplecharm-vnf
  • Rename descriptor file
  • Edit the descriptor
  • Name: hackfest-simplecharm-vnf

Go into the VNF folder and write the VNF descriptor ‘hackfest_simplecharm_vnfd.yaml’.
Charms and Descriptors

Add the vnf-configuration section, as seen to the right, to the end of your descriptor, with the same level of indentation as the name of the VNF.

initial-config-primitive defines the primitives run at day-1, when the charm is instantiated.

cfg-primitive defines the primitives available to run as day-2 configuration.
Charms and Descriptors

Fill in the `initial-config-primitive` section. The `<rw_mgmt_ip>` token will be replaced with the IP address of your VM, allowing the charm to ssh to it.

```
initial-config-primitive:
  - seq: '1'
    name: config
    parameter:
    - name: ssh-hostname
      value: `<rw_mgmt_ip>`
    - name: ssh-username
      value: ubuntu
    - name: ssh-password
      value: osm4u
  - seq: '2'
    name: touch
    parameter:
    - name: filename
      value: '/home/ubuntu/first-touch'
```
Charms and Descriptors

Fill in the `config-primitive` section. This defines the primitive(s) available to run by the operator.

```json
config-primitive:
-   name: touch
    parameter:
      -   name: filename
          data-type: STRING
          default-value: '/home/ubuntu/touched'
```
Validate your VNF descriptor

Use the validation tool to check that the descriptor is syntactically correct:

```
devops(descriptor-packages/tools/validate_descriptor.py
<VNF_DESCRIPTOR_FILE>
```

If an error message is shown, review the descriptor and validate again. Otherwise, the descriptor is syntactically correct.
Complete your VNF Package with the charm, the cloud-init file and the logo

- Copy your compiled charm to descriptor folder (e.g. ~/hackfest_simplecharm_vnfd)
  - cp -r ~/charms/builds/simple ~/hackfest_simplecharm_vnfd/charms
Generate the VNF package and upload it to the UI

• Generate the VNF Package .tar.gz
  
  • devops(descriptor-packages/tools/generate_descriptor_pkg.sh -t vnfd -N hackfest_simplecharm_vnfd

  *Note: the argument -N is important if you want to keep the package folder and files after creating the package.*

• Upload hackfest_simplecharm_vnfd.tar.gz to OSM UI
Create NS, instantiate and run config primitives

With subtitle
Deploying NS

- Go to UI > Packages > NS Packages
- Find hackfest-simplecharm-ns and click *Instantiate NS Action*
- Complete the form
  - Add a name to the NS
  - Select the Datacenter where the NS will be deployed
  - Add SSH key
- Go to UI > VNF Instances to see the instance.
- Click *Show Info Action* to see the mgmt IP address of the VNF
- Connect to each VNF:
  - `ssh ubuntu@<IP>`
- Check that the cloud-config file was executed;
  - The file `/home/ubuntu/first-touch` should exist
Testing VNF primitives

- Go to UI > NS instances > Actions: Exec primitive
  - Vnf-member-index
  - Action
  - Parameter name
  - Parameter value
Relevant links

• Juju
  • https://jujucharms.com/
• Charm Developers Guide
  • https://jujucharms.com/docs/2.4/developer-getting-started
• Creating a VNF Charm
• Creating a VNF Package
• Session 5 charm and descriptors
  • https://github.com/AdamIsrael/osm-hackfest
Example VNF Charms

- Using Ansible
  - [https://github.com/5GinFIRE/mano/tree/master/charms/ansible-charm](https://github.com/5GinFIRE/mano/tree/master/charms/ansible-charm)

- vpe-router, demoed at MWC 2016
  - [https://github.com/AdamIsrael/vpe-router](https://github.com/AdamIsrael/vpe-router)

- Hackfest examples
  - [https://github.com/AdamIsrael/osm-hackfest](https://github.com/AdamIsrael/osm-hackfest)
The End