

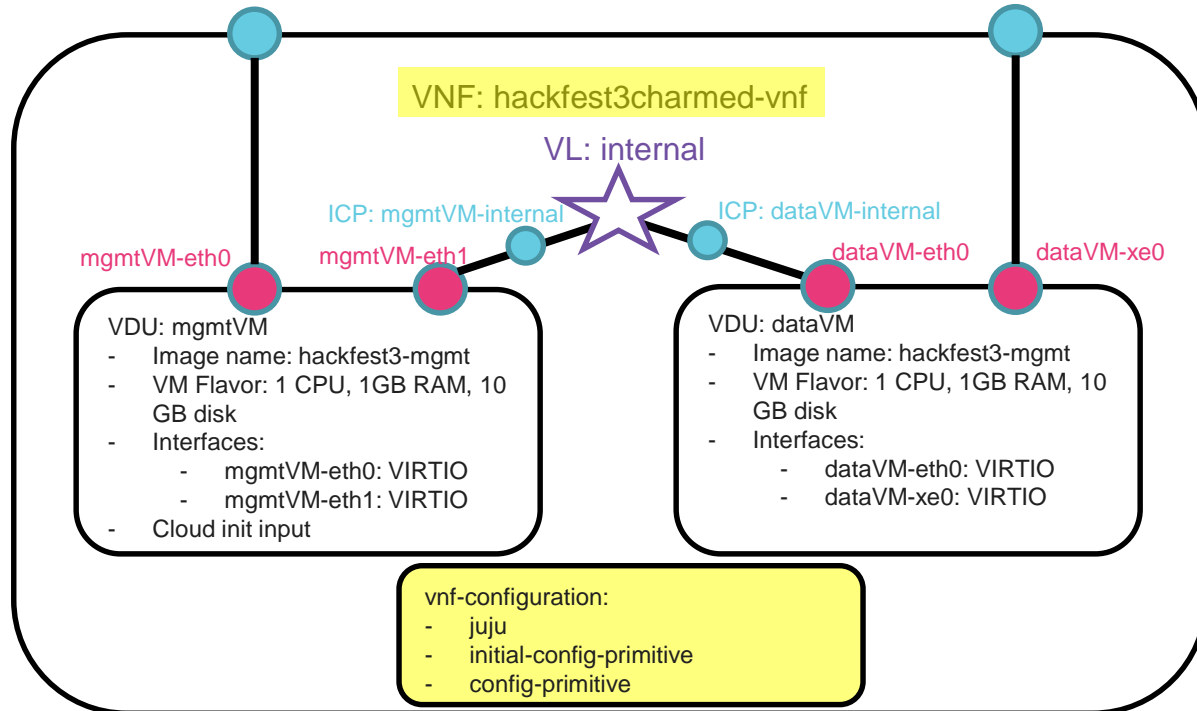
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OSM Hackfest – Session 7b Adding Charms to your VNF Descriptor

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External Connection point: vnf-mgmt

External Connection point: vnf-data



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

Copy VNF hackfest3 folder to hackfest3charmed

- Rename descriptor file
- Edit the descriptor
- Name: hackfest_3charmed-vnf

Go into the VNF folder and write the VNF descriptor 'hackfest_3charmed_vnfd.yaml'. To save time, replace the auto-generated descriptor by this one:

https://osm-download.etsi.org/ftp/osm-3.0-three/2nd-hackfest/other/hackfest_3charmed_vnfd.yaml

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.

config-primitive defines the primitives available to run as day-2 configuration.

```
name: 'myvnf'  
...  
vnf-configuration:  
juju:  
    charm: simple  
initial-config-primitive:  
config-primitive:
```

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.

```
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:

```
/usr/share/osm-devops/descriptor-  
packages/tools/upgrade_descriptor_version.py --test  
<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_3charmed_vnfd)
 - `cp -r ~/charms/builds/simple ~/hackfest_3charmed_vnfd/charms`
- Download the logo and copy it into the 'icons' folder:
 - <https://osm-download.etsi.org/ftp/osm-3.0-three/2nd-hackfest/other/osm.png>
- Download the cloud-config file and copy it into the 'cloud_init' folder:
 - <https://osm-download.etsi.org/ftp/osm-3.0-three/2nd-hackfest/other/cloud-config.txt>

Generate the VNF package and upload it to the UI

- Generate the VNF Package .tar.gz
 - `/usr/share/osm-devops/descriptor-packages/tools/generate_descriptor_pkg.sh -t vnfd -N hackfest_3charmed_vnfd`

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

- Upload `hackfest_3charmed_vnfd.tar.gz` to OSM UI

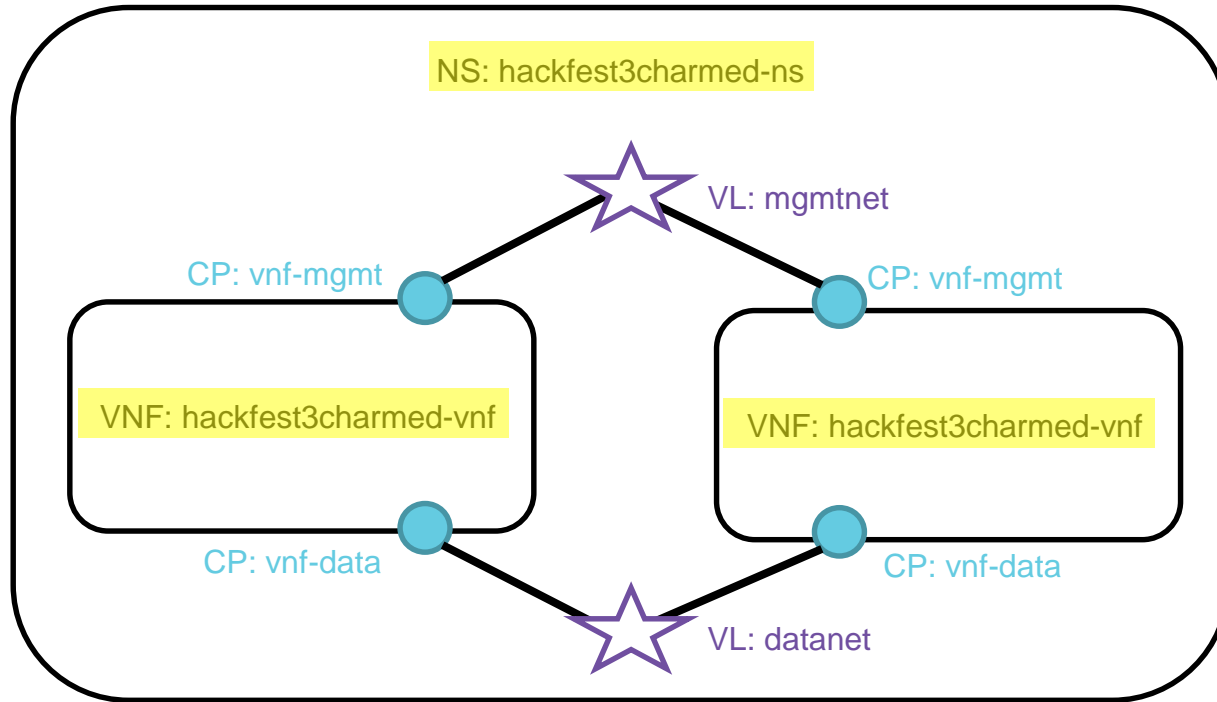


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Create NS, instantiate
and run config primitives
With subtitle

NS diagram

Changes highlighted in yellow



- Go to UI > Packages > NS Packages
- Find `hackfest3charmed-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

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

- Juju
 - <https://jujucharms.com/>
- Charm Developers Guide
 - <https://jujucharms.com/docs/2.3/developer-getting-started>
- Creating a VNF Charm
 - [https://osm.etsi.org/wikipub/index.php/Creating_your_own_VNF_charm_\(Release_THREE\)](https://osm.etsi.org/wikipub/index.php/Creating_your_own_VNF_charm_(Release_THREE))
- Creating a VNF Package
 - [https://osm.etsi.org/wikipub/index.php/Creating_your_own_VNF_package_\(Release_THREE\)](https://osm.etsi.org/wikipub/index.php/Creating_your_own_VNF_package_(Release_THREE))
- Session 5 charm and descriptors
 - <https://github.com/AdamiIsrael/osm-hackfest>

Example VNF Charms

- Using Ansible
 - <https://github.com/5GinFIRE/mano/tree/master/charms/ansible-charm>
- vpe-router, demoed at MWC 2016
 - <https://github.com/AdamiIsrael/vpe-router>
- Hackfest examples
 - <https://github.com/AdamiIsrael/osm-hackfest>



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The End
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