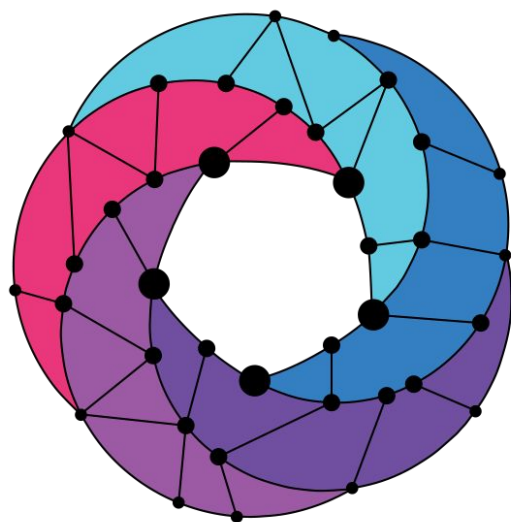




Open Source  
**MANO**

## OSM Hackfest – Session 1

### Installation and first use

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# Installing OSM Option 1: using the script

- Official REL6 installation procedure:
  - [https://osm.etsi.org/wikipub/index.php/OSM\\_Release\\_SIX#Install\\_OSM\\_Release\\_SIX](https://osm.etsi.org/wikipub/index.php/OSM_Release_SIX#Install_OSM_Release_SIX)
- Check the IP of your VM:
  - Access the VIM at <http://172.21.247.1/project/instances/> using your credentials and determine the IP.

| <input type="checkbox"/> | Instance Name | Image Name   | IP Address    | Flavor     | Key Pair | Status | Availability Zone |
|--------------------------|---------------|--------------|---------------|------------|----------|--------|-------------------|
| <input type="checkbox"/> | osmr6_38      | ubuntu 16.04 | 172.21.248.63 | osm_flavor | -        | Active | nova              |

- Access through SSH
  - User: ubuntu
  - Password: osm4u
- Download and run the script:

```
wget https://osm-download.etsi.org/ftp/osm-6.0-six/install_osm.sh
chmod +x install_osm.sh
./install_osm.sh
```
- Allow every step of the installation process, **except IPv6.**

# Installing OSM Option 2: with Vagrant

- Move to a work directory for OSM in your machine
- Initialize the environment for osm (it will create a Vagrant file)  
`vagrant init osm/releasesix`
- Copy the provided image to the same folder, add it as a 'vagrant box', and then initialize the environment:  
`vagrant box add osm/releasesix {image_filename}`  
`vagrant init osm/releasesix --box-version 0`
- Modify the Vagrantfile, with your exposed ports preferences:  
`config.vm.network "forwarded_port", guest: 80, host: 8080`  
`config.vm.network "forwarded_port", guest: 3000, host: 3000`
- Start the Image (will download image if not added previously):  
`vagrant up`
- Connect:  
`vagrant ssh`

Internet

flashdrive



# Troubleshooting Vagrant: Users with old windows

- In case you need see the following error after trying to power on the virtual machine:

```
C:\Users\guillermo.calvino\Documents\Vagrant>vagrant up
The version of powershell currently installed on this host is less than
the required minimum version. Please upgrade the installed version of
powershell to the minimum required version and run the command again.

Installed version: 2
Minimum required version: 3
```

- You need to upgrade the powershell version:
  - <http://www.microsoft.com/en-us/download/details.aspx?id=34595>
  - For example:
    - Windows 7 Service Pack 1 - 64-bit versions: Windows6.1-KB2506143-x64.msu

# After installing OSM

- Test OSM client
  - Try 'osm'
- Test UI:
  - Access UI:
    - (Option 1) For script installation: <http://<IP of your VM>>
    - (Option 2) For Vagrant installation in your local machine: <http://localhost:8080>
    - Credentials are admin/admin

# Local OSM instances

- osm-plugtest1: <http://172.21.1.4>
- osm-plugtest2: <http://172.21.1.5>
- osm-hackfest1: <http://172.21.1.9>

# For people using ETSI OSM servers Install OSM client



- Instructions could be found here:
  - [https://osm.etsi.org/wikipub/index.php/How\\_to\\_install\\_OSM\\_client](https://osm.etsi.org/wikipub/index.php/How_to_install_OSM_client)

## Steps:

- `curl https://osm-download.etsi.org/repository/osm/debian/ReleaseFIVE/OSM%20ETSI%20Release%20Key.gpg | sudo apt-key add -`
  - `sudo add-apt-repository -y "deb [arch=amd64] https://osm-download.etsi.org/repository/osm/debian/ReleaseFIVE stable osmclient"`
  - `sudo apt-get update`
  - `sudo apt-get install -y python-osmclient`
- After the installation completes, you might want to add the following environment variables to your `.bashrc` file:
    - `export OSM_HOSTNAME=<OSM_host> # IP of the OSM server (default: 127.0.0.1)`

# Adding VIM accounts

- VIMs:

| Name       | Type      | AUTH URL                    | tenant | user | Password |
|------------|-----------|-----------------------------|--------|------|----------|
| openstack1 | openstack | http://172.21.247.1:5000/v3 | xxx    | xxx  | xxx      |
| openstack2 | openstack | https://172.21.7.5:5000/v3  | xxx    | xxx  | xxx      |
| openstack3 | openstack | https://172.21.5.4:5000/v3  | xxx    | xxx  | xxx      |

- Test VIMs:

- ping <IP>
- curl -k http://<IP>:5000/v3
- Install python-openstackclient
  - sudo apt-get install python-openstackclient

# Adding VIM accounts

- Load Openstack credentials
  - Option 1: running the script preloaded with the credentials:
    - `. osm_openrc.sh`
  - Option 2: setting the enviromental variables:
    - `export OS_AUTH_URL=http://172.21.247.1:5000/v3`
    - `export OS_USERNAME=osm_hackfest_XX`
    - `export OS_TENANT_NAME=osm_hackfest_XX`
    - `export OS_PASSWORD=osm_hackfest_XX`
    - `export OS_IDENTITY_API_VERSION=3`
- Run some commands for testing
  - `openstack image list`
  - `openstack network list`
  - `openstack flavor list`
  - `openstack server list`

# OpenStack1

## VIM Details



### URL:

- `http://172.21.247.1:5000/v3`

### Credentials

- Tenant: `osm_hackfest_X`
- Tenant user: `osm_hackfest_X`
- Tenant password: `osm_hackfest_X`

Where X goes from 1 to 40

### Images:

- `ubuntu1604`
- `ubuntu-osm-hackfest`
- `hackfest3-mgmt`
- `cirros034`

### Networks:

- Public & Management: `osm-ext`

### Adding OpenStack1 using “osm” cli:

```
osm vim-create --name openstack1 --account_type openstack --auth_url http://172.21.247.1:5000/v3 --user osm_hackfest_X --password osm_hackfest_X --tenant osm_hackfest_X --description "Hackfest Openstack ETSI"
```

# OpenStack2 VIM Details



## URL:

- <http://172.21.7.5:5000/v3>

## Credentials

- Tenant: osm\_hackfest\_X
- Tenant user: osm\_hackfest\_X
- Tenant password: osm\_hackfest\_X

Where X goes from 1 to 40

## Images:

- ubuntu1604
- US1604
- hackfest3-mgmt
- cirros034

## Networks:

- Provider/Management: PUBLIC

## Adding Openstack2 VIM using “osm” cli:

```
osm vim-create --name openstack2 --account_type openstack --auth_url http://172.21.7.5:5000/v3 --user osm_hackfest_X --password osm_hackfest_X --tenant osm_hackfest_X --description "Hackfest OpenStack WhiteStack"
```

# OpenStack3 VIM Details



## URL:

- <http://172.21.5.4:5000/v3>

## Credentials

- Tenant: hackfest\_X
- Tenant user: hackfest\_X
- Tenant password: hackfest\_X

Where X goes from 0 to 9

## Adding Openstack3 VIM using “osm” cli:

```
osm vim-create --name openstack3 --account_type openstack --auth_url http://172.21.5.4:5000/v3 --user hackfest_X --password  
hackfest_X --tenant hackfest_X --description "ETSI openstack3 Windriver Openstack, with tenant hackfest_X"
```

## Images:

- ubuntu1604
- US1604
- hackfest3-mgmt
- cirros034

## Networks:

- Provider/Management: external

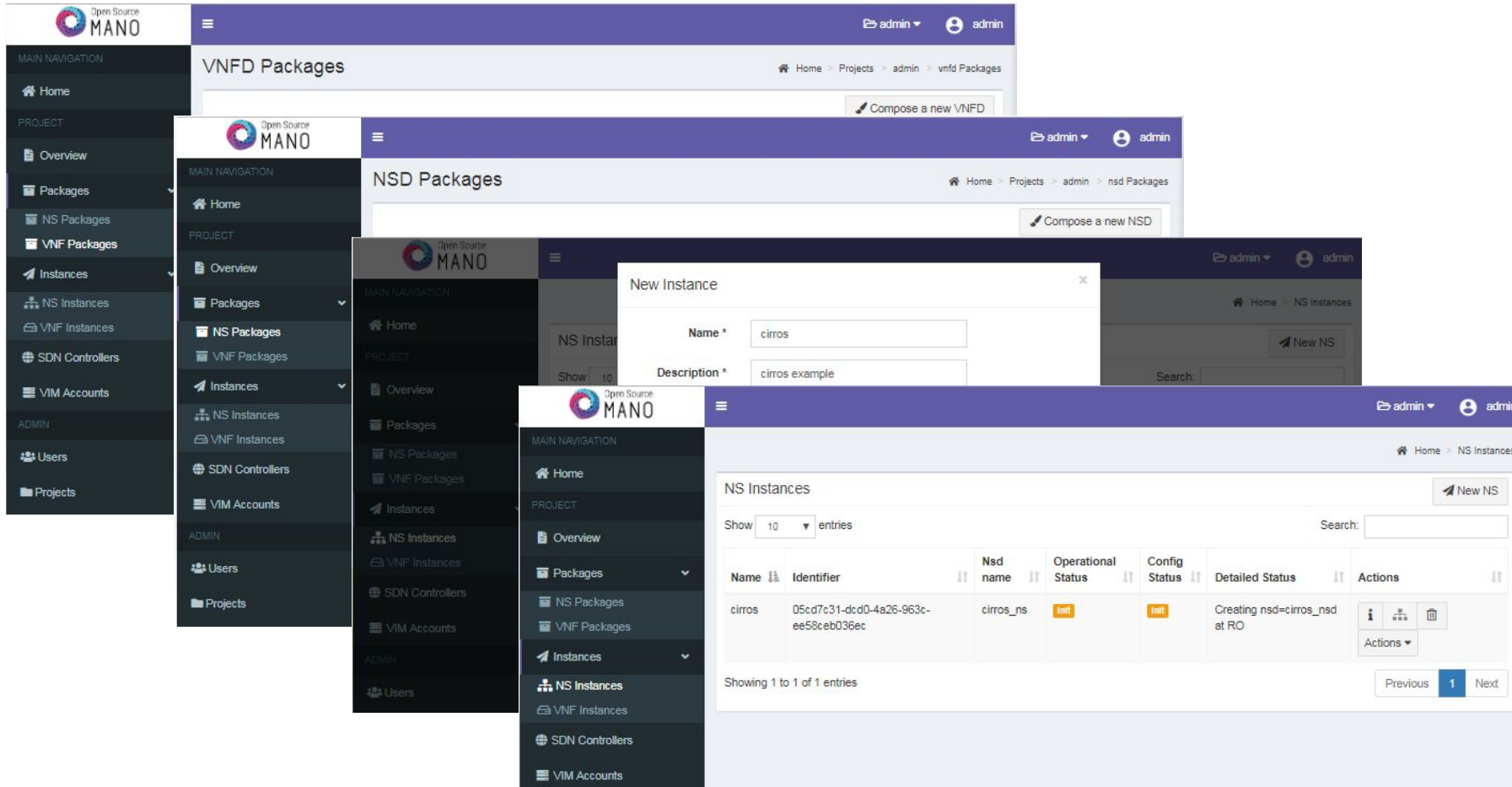
# Adding images to the VIM

- Image management is not implemented in OSM today. It has to be done independently on each VIM.
- **Images have been already added to the remote VIMs in the Hackfest.**
- Example for Openstack:
  - `openstack image create --file="./cirros-0.3.4-x86_64-disk.img" --container-format=bare --disk-format=qcow2 --public cirros034`

# Adding images to the VIM

| Image name in descriptors | Filename                                                                                                                                                                       |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ubuntu1604                | xenial-server-cloudimg-amd64-disk1.img<br>(you can get it from <a href="https://cloud-images.ubuntu.com/xenial/current/">https://cloud-images.ubuntu.com/xenial/current/</a> ) |
| US1604                    | US1604.qcow2                                                                                                                                                                   |
| hackfest3-mgmt            | hackfest3-mgmt-qcow2                                                                                                                                                           |
| hackfest-pktgen           | hackfest-pktgen-qcow2                                                                                                                                                          |
| cirros034                 | cirros-0.3.4-x86_64-disk.img                                                                                                                                                   |
| apache_ubuntu             | apache_ubuntu.qcow2                                                                                                                                                            |
| haproxy_ubuntu            | haproxy_Ubuntu.qcow2                                                                                                                                                           |
| client_ubuntu             | client_ubuntu.qcow2                                                                                                                                                            |
| vyos-1.1.7-cloudinit      | vyos-1.1.7-cloudinit                                                                                                                                                           |

# Deploying our first NS with OSM UI



The collage illustrates the workflow in the Open Source MANO UI:

- Top Left:** The main navigation sidebar with options like Home, Overview, Packages, NS Packages, VNF Packages, Instances, NS Instances, VNF Instances, SDN Controllers, and VIM Accounts.
- Top Right:** The 'VNFD Packages' page with a 'Compose a new VNFD' button.
- Middle Left:** The 'NSD Packages' page with a 'Compose a new NSD' button.
- Middle Right:** A 'New Instance' modal form with fields for 'Name' (filled with 'cirros') and 'Description' (filled with 'cirros example').
- Bottom:** The 'NS Instances' page showing a table of instances.

| Name   | Identifier                           | Nsd name  | Operational Status | Config Status | Detailed Status               | Actions                             |
|--------|--------------------------------------|-----------|--------------------|---------------|-------------------------------|-------------------------------------|
| cirros | 05cd7c31-dcd0-4a26-963c-ee58ceb036ec | cirros_ns | init               | init          | Creating nsd=cirros_nsd at RO | [Info] [Details] [Delete] [Actions] |

Showing 1 to 1 of 1 entries

# Download VNF and NS packages

- Download VNF

wget [https://osm-download.etsi.org/ftp/osm-6.0-six/7th-hackfest/packages/cirros\\_vnf.tar.gz](https://osm-download.etsi.org/ftp/osm-6.0-six/7th-hackfest/packages/cirros_vnf.tar.gz)

- Download NS

wget [https://osm-download.etsi.org/ftp/osm-6.0-six/7th-hackfest/packages/cirros\\_2vnf\\_ns.tar.gz](https://osm-download.etsi.org/ftp/osm-6.0-six/7th-hackfest/packages/cirros_2vnf_ns.tar.gz)

# Deploying our first NS with the UI

- Add VNF package (drag&drop)
- Add NS package (drag&drop)
- Instantiate
- Get VNF record and obtain mgmt IP address
- Access to the VNF via SSH (user: “cirros”, pass: “cubswin:”) or “gocubsgo” depending on the VIM)
- Delete NS instance
- Delete NS
- Delete VNF

# Deploying our first NS with OSM client

- **Add VNF and NS packages**
  - `osm vnfd-create cirros_vnf.tar.gz`
  - `osm vnfd-list`
  - `osm nsd-create cirros_2vnf_ns.tar.gz`
  - `osm nsd-list`
- **Instantiate**
  - `osm ns-create --nsd_name cirros_2vnf_ns --ns_name <ns-instance-name> --vim_account <data-center-name>`
  - `osm ns-list`
- **Delete NS instance**
  - `osm ns-delete <ns-instance-name>`
  - `osm ns-list`
- **Delete VNF and NS package**
  - `osm nsd-delete cirros_2vnf_ns`
  - `osm nsd-list`
  - `osm vnfd-delete cirros_vnfd`
  - `osm vnfd-list`