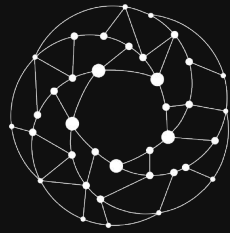


Open Source MANO

OSM Hackfest – Session 9
Service Function Chaining

Eduardo Sousa (Whitestack)



Open Source
MANO

What is Service Function Chaining?

SFC Status in OSM

- Available since OSM Release 3
- SFC only available using:
Openstack Queens (or higher) with Networking-SFC
- Only supports Asymmetrical Chains
- SFC Encapsulation using Network Service Headers (NSH)
- Traffic classification based in the following fields:

IP Protocol

Source IP Address
Source Port

Destination IP Address
Destination Port

What is OPNFV XCI?

OPNFV XCI (Cross Community Integration) is an initiative within OPNFV that focuses on master branches in order to:

- **shorten the time** it takes to introduce new features
- make it **easier to identify and fix bugs**
- **ease** the effort to develop, integrate, and test the reference platform
- establish **additional feedback loops** within OPNFV, towards the users and between the communities OPNFV works with
- **increase the visibility** regarding the state of things at all times



+



OPNFV XCI Integration

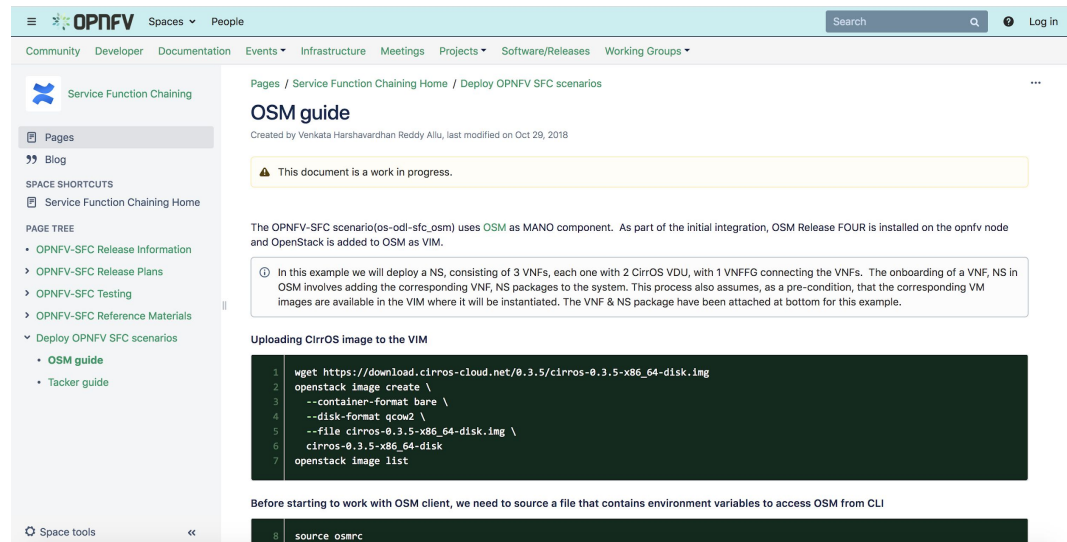
- OPNFV has integrated OSM installation into their pipeline.

- The first advanced use case they want to implement is Service Function Chaining (previously done with Tacker)

→ **Basic SFC has been integrated as of 31/Oct/2018**

- Next step is to evolve OSM SFC features to achieve more use cases.

<https://wiki.opnfv.org/display/sfc/OSM+guide>



The screenshot shows the OPNFV Wiki page for the OSM guide. The page title is "OSM guide" and it was created by Venkata Harshavardhan Reddy Allu on Oct 29, 2018. A yellow warning box states "This document is a work in progress." The main content describes the OSM guide, mentioning that the OPNFV-SFC scenario (os-odl-sfc-osm) uses OSM as a MANO component. It notes that OSM Release FOUR is installed on the opnfv node and OpenStack is added to OSM as VIM. A note indicates that the example will deploy a NS consisting of 3 VNFs, each with 2 CirrOS VDU, with 1 VNFFG connecting the VNFs. The onboarding of a VNF, NS in OSM involves adding the corresponding VNF, NS packages to the system. A code block shows the commands for uploading the CirrOS image to the VIM:

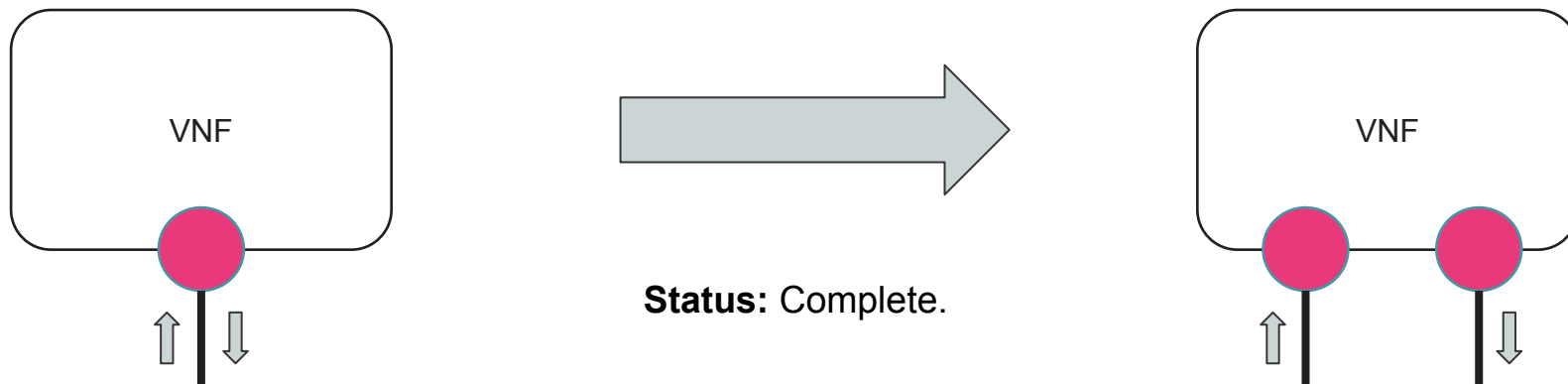
```
1 wget https://download.cirros-cloud.net/0.3.5/cirros-0.3.5-x86_64-disk.img
2 openstack image create \
3 --container-format bare \
4 --disk-format qcow2 \
5 --file cirros-0.3.5-x86_64-disk.img \
6 cirros-0.3.5-x86_64-disk
7 openstack image list
```

Before starting to work with OSM client, we need to source a file that contains environment variables to access OSM from CLI

```
8 source osmrc
```

Separate ingress and egress ports

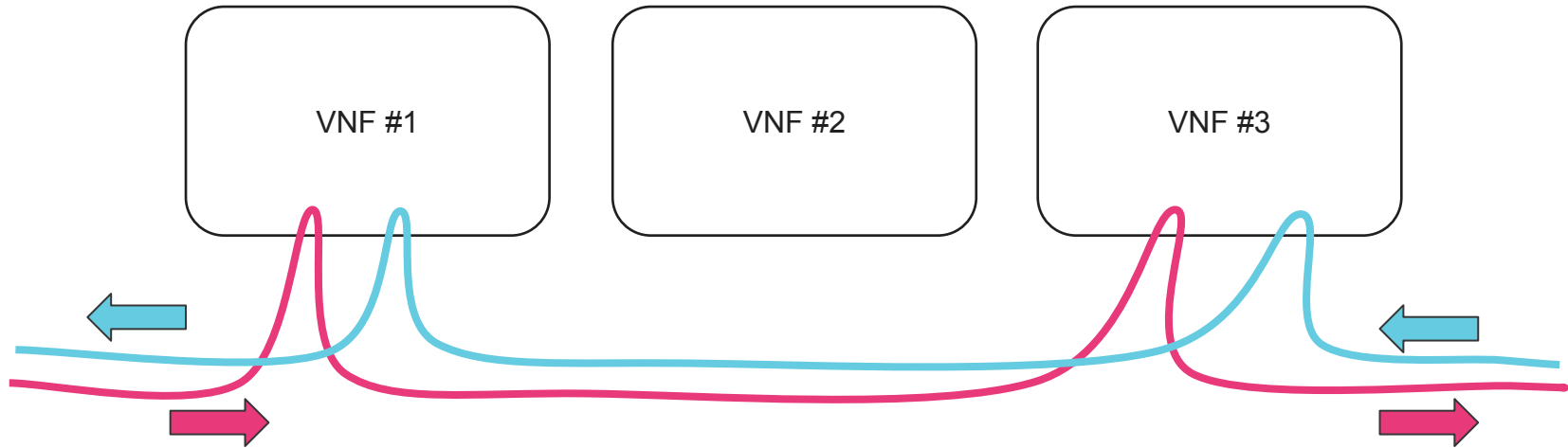
Modifying the Information Model and Resource Orchestrator



Symmetrical/Asymmetrical Chains

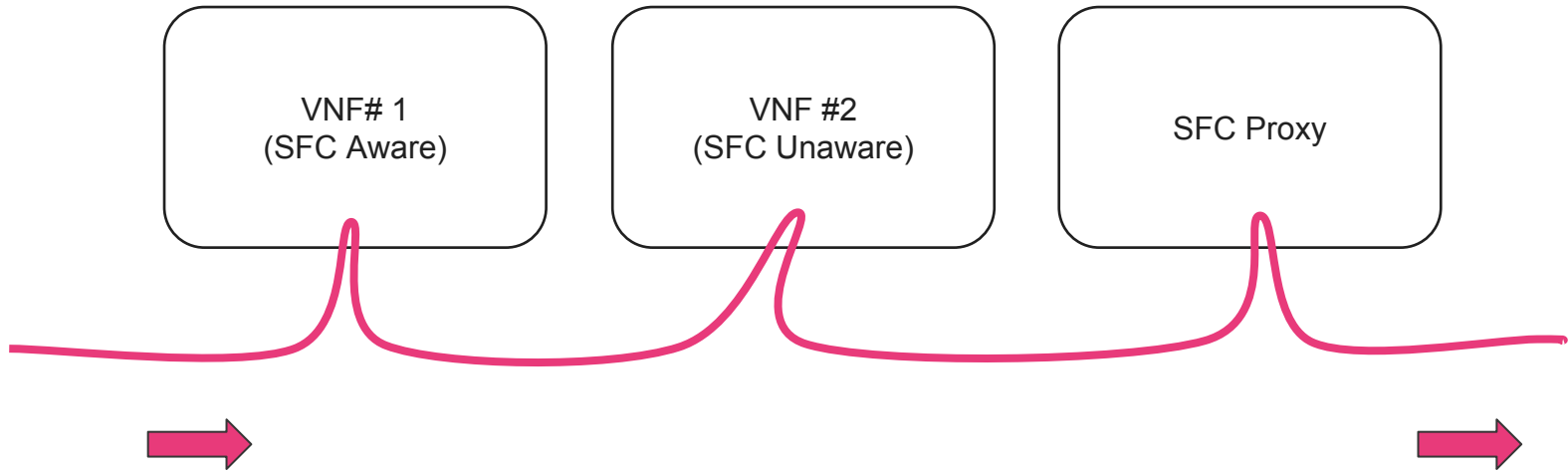
Currently only Asymmetrical Chains are supported.

Status: In development.



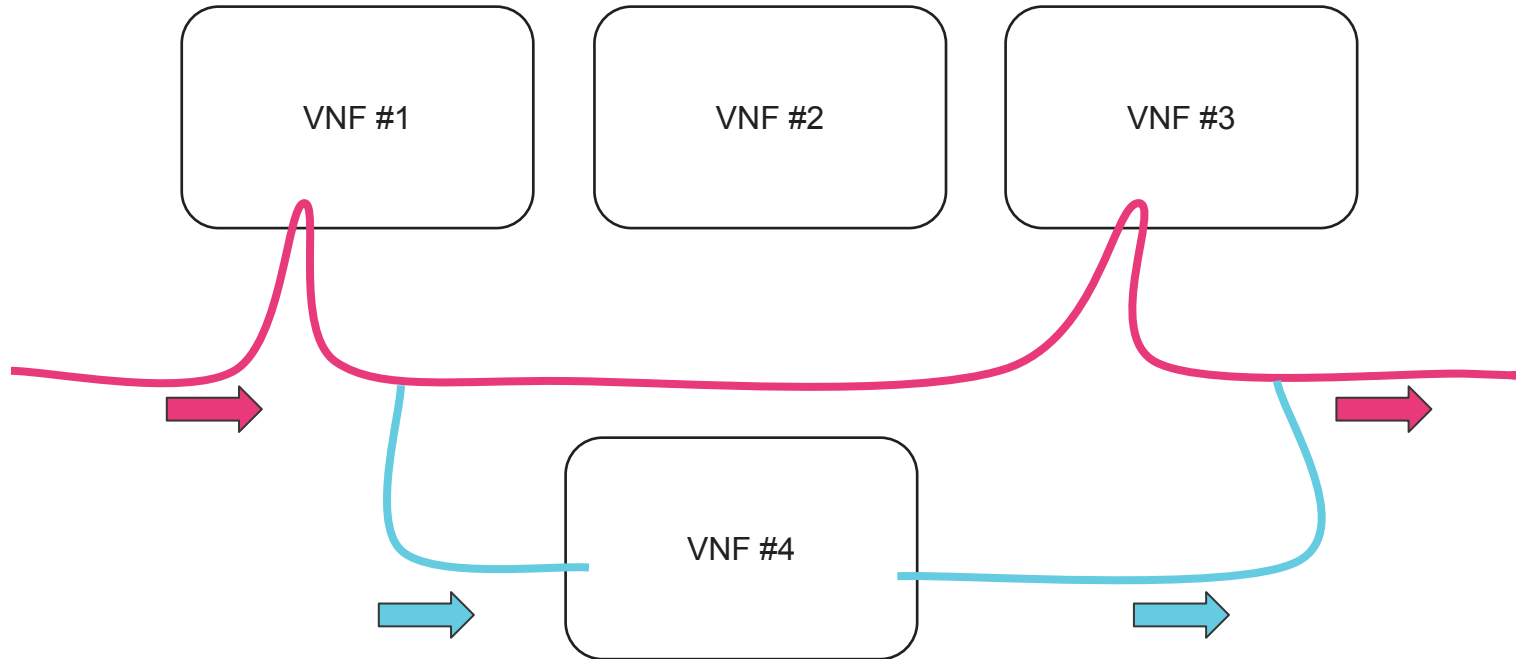
Non-Transparent Service Functions

Currently not supported.
Status: Research ongoing.



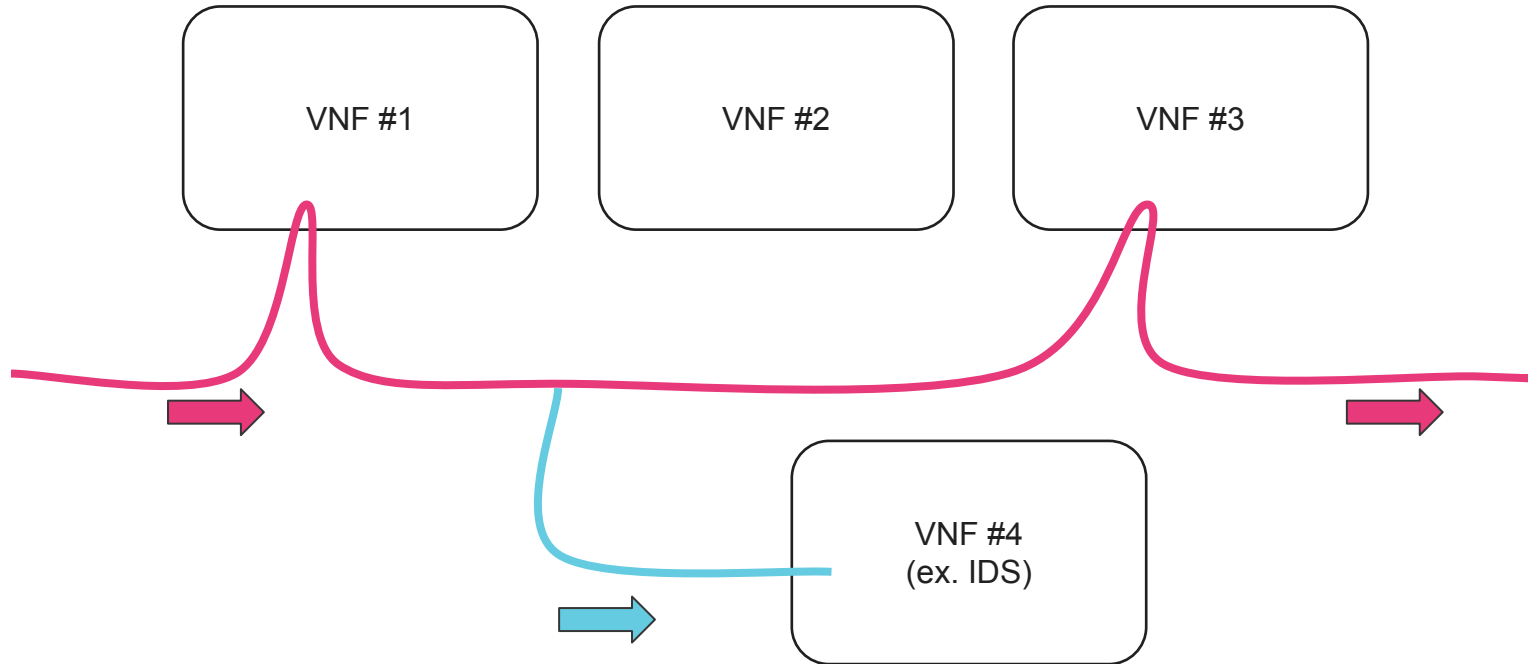
Branching and Joining

Currently not supported.
Status: Research ongoing.



Service Function Tap

Currently not supported.
Status: Research ongoing.



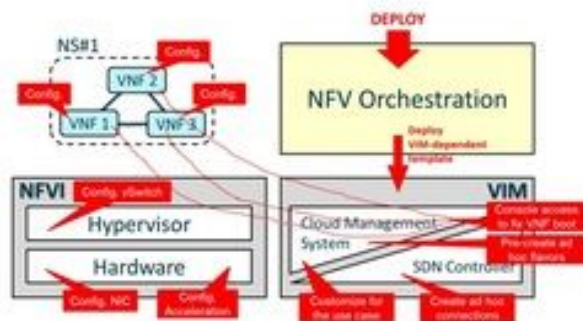
«The current service function deployment models are relatively static, coupled to network topology and physical resources, greatly reducing or eliminating the ability of an operator to introduce new services or dynamically create service function chains.»

IETF - RFC 7665 - Service Function Chaining (SFC) Architecture

SFC Management API (2)

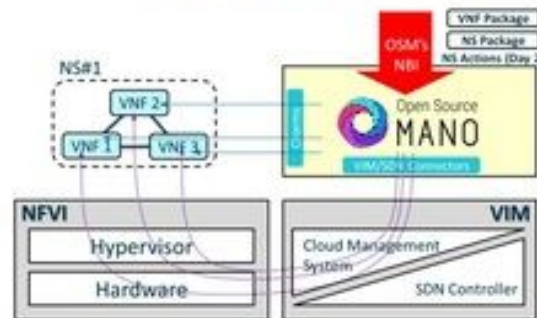
Automating the deployment and operation of Network services is a challenge that OSM is able to solve

FROM multiple manual touch points...



Telefonica
We connect it all

... TO a single entry point to drive full automation



11

SFC Management API (3)

Introducing an API to:

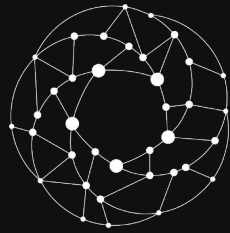
- Manage Rendered Service Paths (RSPs)
- Manage Flow Classifiers

Aligned with SOL005

Main problems:

- Loop detection and avoidance
- Scaling operations

Status: In development.



Open Source
MANO

Hands-on

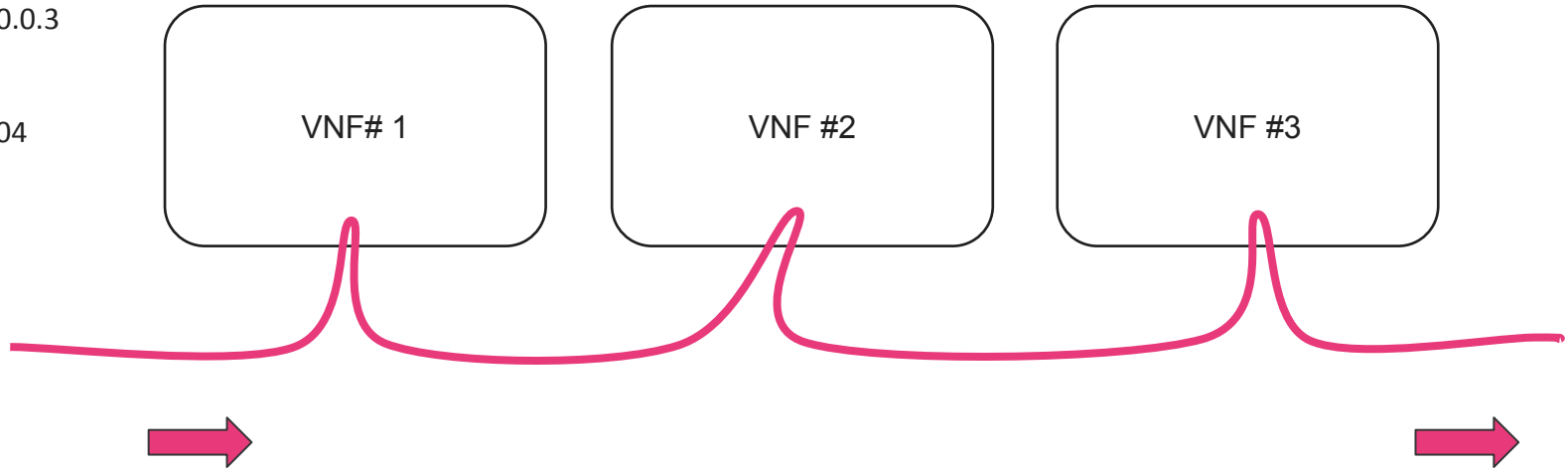
Demo: Original Network Service

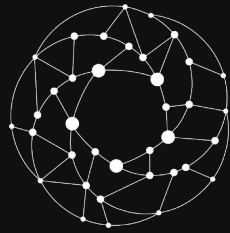
Flow Classifier #1:

- IP Proto: TCP
- Src IP: 10.0.0.3

Image:

- ubuntu1604





Open Source
MANO

The End