OSM Hackfest – Session 9
Service Function Chaining

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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:

<table>
<thead>
<tr>
<th>IP Protocol</th>
<th>Source IP Address</th>
<th>Destination IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source Port</td>
<td>Destination Port</td>
</tr>
</tbody>
</table>
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
Separate ingress and egress ports

Modifying the Information Model and Resource Orchestrator

Status: Complete.
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.

- VNF #1
- VNF #2
- VNF #3
- VNF #4 (ex. IDS)
«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...

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

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Introducing an API to:
- Manage Rendered Service Paths (RSPs)
- Manage Flow Classifiers

Main problems:
- Loop detection and avoidance
- Scaling operations

Status: In development.
Demo: Original Network Service

Flow Classifier #1:
- IP Proto: TCP
- Src IP: 10.0.0.3

Image:
- ubuntu1604
The End