

SFC/OVS FUNCTIONALITY & STATUS

IETF-92

Reinaldo Penno (rapenno@gmail.com)

Pritesh Kothari (pritesh.kothari@cisco.com)

Paul Quinn (paulq@cisco.com)

Thomas Bachman (bachman@noironetworks.com)

Data Plane

- OVS Patch
- <https://github.com/priteshk/ovs/tree/nsh-v8>
- Install Command:
- <https://raw.githubusercontent.com/priteshk/ovs/nsh-v8/third-party/start-ovs.sh> | bash
- Working to upstream to OVS

- Format of NSH Encap:
- VXLAN at port 4789
- VXLAN + NSH 6633
- Packet format is VXLAN + NSH (Type 1) + Ethernet + IP..

Control Plane

- **Openflow**
 - Programming of Openflow rules with NSH actions use Openflow extensions
 - Tested with Opendaylight
- **OVS**
 - Opendaylight SFC listens to OVS switch attachments and maps OVS constructs to Service Function Forwarder constructs.
 - Video Demo: https://youtu.be/cG_b-uCqpr0
 - From SFC user stand-point OVS switch is seen as another SFF.

OVS Openflow NSH Flows

- root@ubuntu:~/work/groupbasedpolicy/util/dockerTestOfOverlay# **ovs-ofctl dump-flows s1 table=3**
- NXST_FLOW reply (xid=0x4):
- cookie=0x0, duration=310.801s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=64999,ipv6,reg0=0x3,reg1=0x6,reg2=0x7,reg3=0x6,nw_proto=1 actions=load:0xc0a80101->NXM_NX_TUN_IPV4_DST[],move:NXM_NX_REG0[]->NXM_NX_TUN_ID[0..31],set_nsi:255,set_nsp:0x1,load:0xa->NXM_NX_REG7[]
- cookie=0x0, duration=310.793s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=64999,icmp,reg0=0x3,reg1=0x6,reg2=0x7,reg3=0x6 actions=load:0xc0a80101->NXM_NX_TUN_IPV4_DST[],move:NXM_NX_REG0[]->NXM_NX_TUN_ID[0..31],set_nsi:255,set_nsp:0x1,load:0xa->NXM_NX_REG7[]
- cookie=0x0, duration=310.766s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=64999,ipv6,reg0=0x7,reg1=0x6,reg2=0x3,reg3=0x6,nw_proto=1 actions=load:0xc0a80101->NXM_NX_TUN_IPV4_DST[],move:NXM_NX_REG0[]->NXM_NX_TUN_ID[0..31],set_nsi:255,set_nsp:0x1,load:0xa->NXM_NX_REG7[]
- cookie=0x0, duration=310.766s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=64999,icmp,reg0=0x7,reg1=0x6,reg2=0x3,reg3=0x6 actions=load:0xc0a80101->NXM_NX_TUN_IPV4_DST[],move:NXM_NX_REG0[]->NXM_NX_TUN_ID[0..31],set_nsi:255,set_nsp:0x1,load:0xa->NXM_NX_REG7[]
- cookie=0x0, duration=310.800s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=1 actions=drop
- cookie=0x0, duration=310.776s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,tcp,reg0=0x7,reg1=0x6,reg2=0x3,reg3=0x6,tp_dst=80 actions=output:NXM_NX_REG7[]
- cookie=0x0, duration=310.775s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,tcp6,reg0=0x7,reg1=0x6,reg2=0x3,reg3=0x6,tp_dst=80 actions=output:NXM_NX_REG7[]
- cookie=0x0, duration=310.828s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,reg1=0xffff,in_port=5 actions=output:NXM_NX_REG7[]
- cookie=0x0, duration=310.801s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,reg0=0x7,reg2=0x7 actions=output:NXM_NX_REG7[]
- cookie=0x0, duration=310.782s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,reg0=0x3,reg2=0x3 actions=output:NXM_NX_REG7[]
- cookie=0x0, duration=310.783s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,tcp6,reg0=0x3,reg1=0x6,reg2=0x7,reg3=0x6,tp_src=80 actions=output:NXM_NX_REG7[]
- cookie=0x0, duration=310.764s, table=3, n_packets=0, n_bytes=0, idle_age=310, priority=65000,tcp,reg0=0x3,reg1=0x6,reg2=0x7,reg3=0x6,tp_src=80 actions=output:NXM_NX_REG7[]