Network Service Header (NSH)
draft-ietf-sfc-nsh-04

IETF95, Buenos Aires, March 2016

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Changes in Versions 3 and 4

• No protocol changes
• Clarifying text, based on mailing list discussion:
  – NSH node SHOULD support MD Type=2. An MD Type=1 node, uses Length field to be able to process a packet where MD Type=2 is used
  – When access to “original” packet is needed, length field MUST be used to determine the “end” of the NSH headers
  – Added Fragmentation considerations – IETF compliant
    • Options: Jumbo, Path MTU or re-assembly
• Note: enhanced Security considerations in nsh-sec
Implementation Update: Open Source

- Vibrant open source community
  - Brocade, Cisco, Ericsson, Intel, Redhat, individuals, etc.
- Data Plane in Linux kernel
  - NSH (along with VXLAN-GPE) support for Lightweight Tunneling
- Data Plane in OVS
  - Classifier and SFF controlled via OVSDB and Openflow protocols
  - Decoupled transport and NSH encap/decap
- Data Plane in FD.io (in progress)
  - NSH encap/decap in VPP
  - NSH-aware SF
  - Control plane agent Honeycomb
  - Classifier, SFF and Proxy to be supported in new NSH SFC (https://wiki.fd.io/view/Project_Proposals/NSH_SFC) sub-project
Implementation Update: Open Source [2]

• Control Plane in OpenDaylight
  • Vibrant project, with new features every release
  • Integration with ODL Group Based Policy (as a classifier controller) and OVSDB NetVirt (as a classifier controller)
  • Standalone classifier control for Telco use case
  • Pipeline Coexistence: allowing GBP, NetVirt, and SFC to all Coexist on the same OpenFlow switch
  • Refactor of Openflow renderer and YANG models for better stability

• Integration with OPNFV
  • Service Function Abstract Data Types, allowing for better integration with OPNFV
  • ODL Beryllium (inc. SFC) + Tacker (VNFM) in Brahmaputra release
Implementation Update

• Many already announced/shipping implementations
  – Brocade
  – Cisco
  – Citrix
  – Ericsson
  – F5
  – Intel
  – Marvell
  – Qosmos
  – Riverbed
  – Sandvine

• Several more vendors will announce support over the next few weeks/months
Implementation Update [2]

- Multi-vendor implementation and initial deployments underway
  - Multi party Demo at MWC 2015 and Cisco Live 2015
    - Cisco, Intel, F5 and Citrix
    - OpenDaylight + OvS + SFs
  - NTT sponsored Interop event (http://www.ntt.co.jp/news2015/1502e/150212a.html)
    - NTT: Providing SFF, SFC Proxy, and Controller
    - ALAXALA: Providing Classifier, SFF, and SFC Proxy
    - Hitachi: Providing Classifier, SFF, and SFC Proxy
    - Cisco: Providing Classifier, SFF, and SFC Proxy
    - NEC: Providing Classifier, SFF, and SFC Proxy
    - Alcatel-Lucent Japan: Providing Classifier
  - Intel Developer Forum 2015
    - Intel + ODL + OVS demo
Next Steps

• Last Call in-progress