Operating the Network Service Header (NSH) with Next Protocol "None"

draft-farrel-sfc-convent-02.txt
Adrian Farrel <afarrel@juniper.net>
John Drake <jdrake@juniper.net>

[Lucy Yong – retired]

IETF-99, Prague, July 2017
Sending Metadata without User Data

- Metadata is carried in the NSH
- The NSH is designed to be inserted between the forwarding header and the payload packet
- Thus metadata can be sent whenever there is a user data packet
- But what if...
  - There is no user data packet in hand?
  - The metadata is too large to include in the packet?
The Next Protocol Field

• NSH field used to identify the payload packet
draft-ietf-sfc-nsh-13 defines...
  0x1: IPv4
  0x2: IPv6
  0x3: Ethernet
  0x4: NSH (for recursive NSH)
  0x5: MPLS

• Propose to use 0x0: None
  – There is an NSH
  – There is no user data following the NSH

• Can send metadata without a user data packet
Use Cases

• Per-SFC and per-flow metadata
  – Send it when you’re ready to send it
    • Compare with out-of-band installation of metadata

• Communication channel between SFIs
  – For coordination
  – As a control or management plane channel

• And if I suggest OAM, all hell will break loose

• Non-use case...
  – Per-packet metadata
  – Unless you are choosing from a set of pre-installed metadata
Processing Rules – Unknown Next Protocol

Legacy SFC-aware nodes that are unaware of the meaning of the "Next Protocol" value "None" will act as follows:

• SFFs will forward the packets
  – They look like any other NSH packet

• SFC Proxies will drop the packets
  – They know their SFs do not support this payload type

• SFIs will most likely drop the packets
  – They *could* be configured to take no action and return the packet to the SFF, but this is “unwise”

• Reclassifiers will most likely drop the packets
  – Classification is about processing the payload
Discuss!