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

draft-farrel-sfc-convent-02.txt

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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!