DHCP option for NSH in Service Function Path (SFP)

IETF-98

draft-ypal-sfc-dhcp-option-for-nsh-for-sfp-02

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Background & Motivation

- In NSH aware service chaining model, SFF needs to be provisioned with SFP information. In the current environment, the operator manually provisions each network elements(SFF) with SFP information. This does not scale well when on-demand service functions are introduced and brought down in virtualized networks in cloud, datacenter, and so forth deployments. This draft is trying to automate this network rollout of service chaining using the DHCP option. Each SFF willing to participate in NSH aware service chain model will indicate its interest to the DHCP server for SFP and gets provisioned accordingly from the DHCP server.
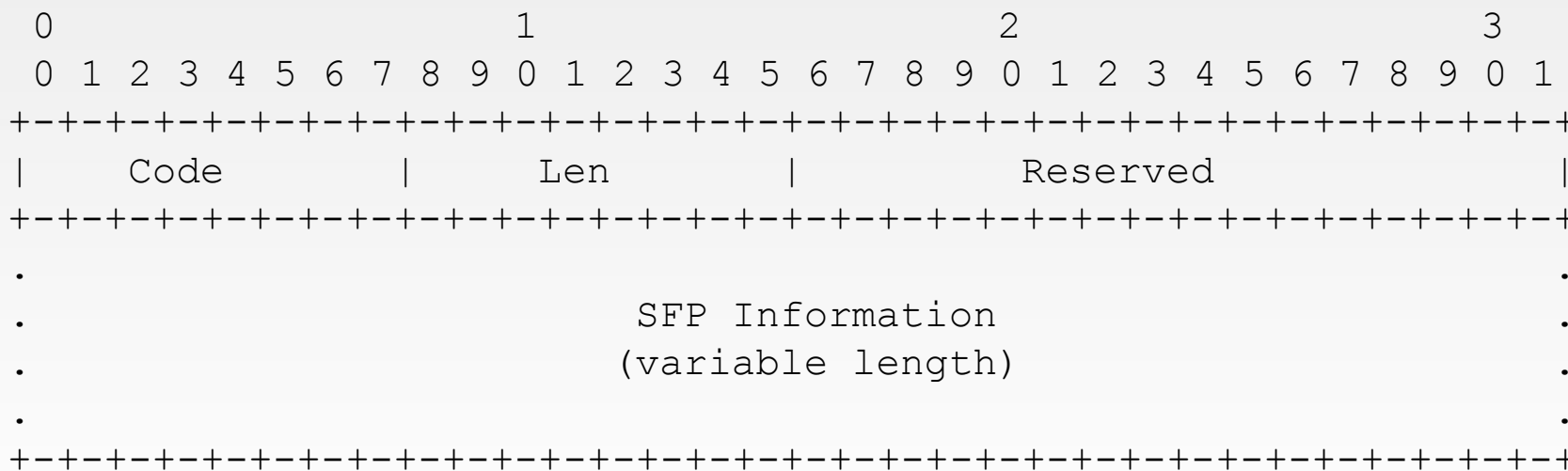
Draft Proposes

- SFF and SF will receive the SFP information containing Service Path Identifier(SPI), Transport protocol and Nexthop(NH) address of subsequent SFF/SF.

- DHCP option for provisioning SFF/SF in service chain path.

Format of NSH SFP option for DHCPv4

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      Code       |      Len      |            Reserved          |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
.                                                               .
.                       SFP Information                         .
.                       (variable length)                      .
.                                                               .
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Format of NSH SFP option for DHCPv6

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       OPTION_NSH_SFP           |           option-len          |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
.                                                               .
.                          SFP Info                             .
.                      (variable length)                        .
.                                                               .
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Current status of NSH

- https://tools.ietf.org/html/draft-ietf-sfc-nsh-12
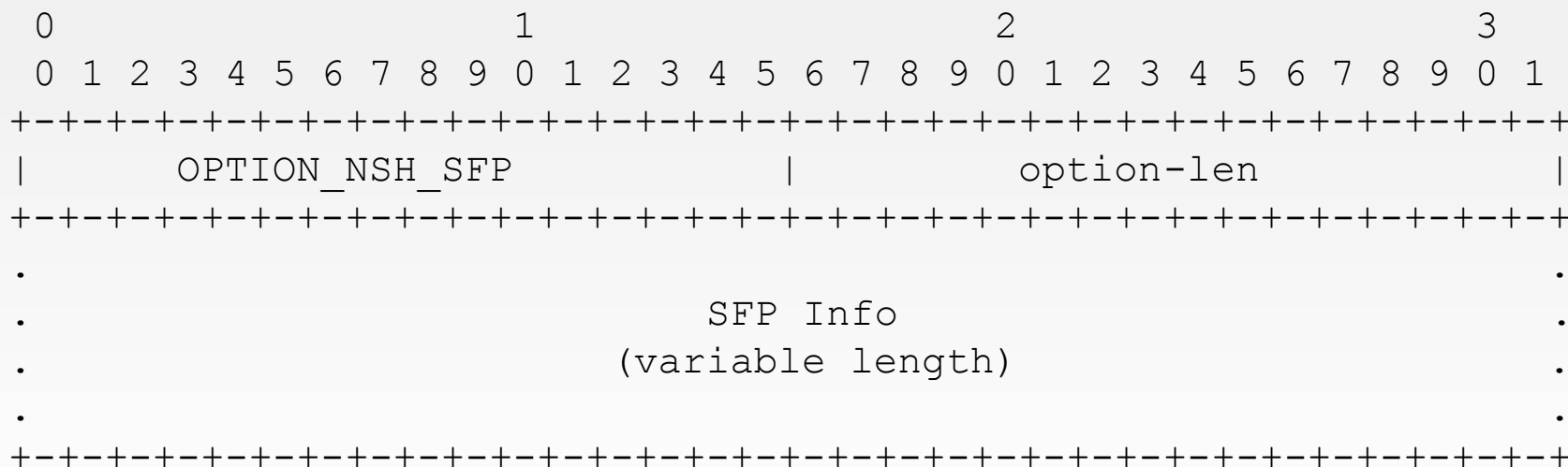
Still work is progress and not yet standadised

This is prerequisite for the progress of the current draft

What next

- NSH to become standard

- Other comments/Questions

- More discussions/DHC adoption call