Encapsulation For MPLS Performance Measurement with Alternate Marking Method

draft-ietf-mpls-inband-pm-encapsulation-05

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Recap on this draft (1)

- This document defines the encapsulation for MPLS performance measurement with alternate marking, whose format is as below.

- Flow-ID Label is used as an MPLS flow identification.
- L(oss) bit is used for coloring the MPLS packets for loss measurement.
- D(elay) bit is used for coloring the MPLS packets for delay/jitter measurement.
- T(ype) bit is used to indicate the measurement type, edge-to-edge or hop-by-hop.
This document provides three examples on how to encapsulate the Flow-ID Label into the label stack.
This document describes two ways on how to allocate Flow-ID.

- In the case of manual trigger, the NMS/controller would generate one or two Flow-IDs based on the input from the network operator, and provision the ingress node with the characteristics of the measured flow and the corresponding allocated Flow-ID(s).

- In the case of automatic trigger, the NMS/controller would generate one or two Flow-IDs based on the characteristics exported from the ingress node, and provision the ingress node with the characteristics of the identified flow and the corresponding allocated Flow-ID(s).
Relationship with MNA

• This document employs an eSPL as the Flow-ID Label Indicator, while the MNA (draft-ietf-mpls-mna-hdr) employs a bSPL as the MNA Sub-Stack Indicator.

• The Flow-ID Label’s encoding defined in this document has been implemented and deployed for several years, running code is already there.

• The main authors realized that the Flow-based inband PM described in this document can be a potential applicable MNA usecase.

• A new draft (draft-cx-mpls-mna-inband-pm) has been posted before IETF 116 to address the potential MNA usecase.
Next step

• Ask for WGLC

Thank you!
MNA for Performance Measurement with Alternate Marking Method

draft-cx-mpls-mna-inband-pm-01

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Intention of this draft

• This document defines MNA encoding for MPLS performance measurement with alternate marking method, which performs flow-based packet loss, delay, and jitter measurements on MPLS live traffic
  – The MNA encoding is compliant with the MNA sub-stack solution specified in draft-ietf-mpls-mna-hdr
  – The MNA encoding reuses the data fields specified in draft-ietf-mpls-inband-pm-encapsulation
MNA for Alternate Marking

• In the revised -01 draft, LSE Format C defined in draft-ietf-mpls-mna-hdr is used for Alternate Marking.

```
0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7
+---------------------------------------------------------------+
| Opcode=PMANN | Flow-ID | S FID L D NAL=0 |
+---------------------------------------------------------------+
```

• In order to adapt the LSE Format C, the length of Flow-ID value is shorten from 20bits to 18bits.

• This draft requests the following allocation from IANA.

<table>
<thead>
<tr>
<th>MNA Opcode</th>
<th>Description</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBA1</td>
<td>PM with Alternate Marking Method</td>
<td>HBH, Select, or I2E</td>
</tr>
</tbody>
</table>
Dropped MNA format

- In the previous -00 draft, LSE Format B with Special Opcode 0x3 is used for Alternate Marking.

- The above MNA format was dropped in revision -01, because it’s assumed that most likely Opcode 0x3 with Flag + 30-bit data solution will be removed from draft-ietf-mpls-mna-hdr.
Next steps

• Ask for more review and comments
• Revise this draft to improve it
• WG adoption?

Thank you!