LDP Extensions for MPLS-TP PW Proactive OAM Configuration

draft-zhang-mpls-tp-pw-oam-config-05

PWE3/MPLS WG, IETF 81th, Quebec

Fei Zhang Bo Wu
Elisa Bellagamba Attila takacs
Xuehui Dai Min Xiao

Update

- **Add two bits "C" "V" in the MPLS-TP PW OAM Capability TLV**

```
 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
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|1|0|               Type (TBD)     |      Length (= 4)             |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|1| Reserved      |                Capability Data        |F|D|L|V|C|
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

  - ✓ "C": CC supported [CC-CV-RDI]
  - ✓ "V": CV supported [CC-CV-RDI]

- **The MPLS-TP PW OAM capability negotiation is done by the Initialization message exchanges**
  - ✓ There are only two bits unused in the CV field of the VCCV parameter ID

```
 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
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      0x0c     |       0x04    |   CC Types    |   CV Types    |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

```
Bit 0 (0x01) - ICMP Ping
Bit 1 (0x02) - LSP Ping
```

[RFC5085]

```
Bit 2 (0x04)  BFD IP/UDP-encapsulated, for PW Fault Detection only
Bit 3 (0x08)  BFD IP/UDP-encapsulated, for PW Fault Detection and
              AC/PW Fault Status Signaling
Bit 4 (0x10)  BFD PW-ACH-encapsulated, for PW Fault Detection only
Bit 5 (0x20)  BFD PW-ACH-encapsulated, for PW Fault Detection and
              AC/PW Fault Status Signaling
```

[RFC5885]

Backward compatibility

- If both the two T-PEs can support the CC or CV function defined in [CC-CV-RDI], the BFD configuration procedure is adopted.
  - ✓ The C or V flag of MPLS-TP PW OAM Capability TLV MUST be set
  - ✓ The C or V flag of MPLS-TP PW OAM Configuration TLV MAY be set
  - ✓ The BFD Configuration sub-TLV MAY be carried
- If at least one of the two T-PEs do not support the CC or CV operation, [RFC5885] will be performed.
  - ✓ The C and V flags of MPLS-TP PW OAM Configuration TLV MUST NOT be set
  - ✓ The BFD Configuration sub-TLV MUST NOT be carried
- **The described behavior ensures full compatibility with the existing implementations.**
  - ✓ Thanks Greg、Matthew、Luca for the discussion
- The revised MPLS-TP PW OAM Configuration TLV
  - ✓ More compact [draft-ietf-mpls-lsp-ping-mpls-tp-oam-conf]

```
 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
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|0|0|       Type (TBD)           |            Length             |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|C|V|L|D|F|             OAM Function Flags                      |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
~                            sub-TLVs                           ~
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Next Steps

- Comments/Feedback?

- Keep in parallel with the related work done in MPLS-TP
  - draft-ietf-ccamp-rsvp-te-mpls-tp-oam-ext
  - draft-ietf-mpls-lsp-ping-mpls-tp-oam-conf

Adopted as a WG document?