

Signaling Root-Initiated Point-to-Multipoint Pseudowire using LDP

draft-ietf-pwe3-p2mp-pw-03.txt

Background

- Specifies a mechanism to signal Point-to-Multipoint (P2MP) Pseudowires (PW) tree using LDP.
- Supports unidirectional P2MP traffic from Root-PE to Leaf-PE(s) as well as OPTIONAL P2P traffic from any Leaf-PE to Root-PE.
- Supports RSVP-TE or mLDP signaled transport LSPs.
- Introduces new FECs, TLVs, and LDP capability.

Label Mapping Message for Upstream-Assigned Label

- A mandatory message sent by a Root-PE to all Leaf-PE(s).
- Contains:
 - A P2MP Upstream PW FEC element
 - Interface Parameters TLV
 - Group ID TLV
 - Transport LSP sub-TLV (**changed to be a sub-TLV**)
 - A label TLV for the upstream-assigned label used by a Root-PE to forward traffic to Leaf-PE(s).

Label Mapping Message for Downstream-Assigned Label

- An optional message sent by a Root-PE to a given Leaf-PE.
- Contains:
 - A P2P Downstream PW FEC element
 - A label TLV for the downstream-assigned label used by a given Leaf-PE to forward traffic to a Root-PE.

Selective Tree Interface Parameter Sub-TLV

To support selective multicast traffic, a new Interface Parameter sub-TLV is defined according to the format described in [RFC4447]:

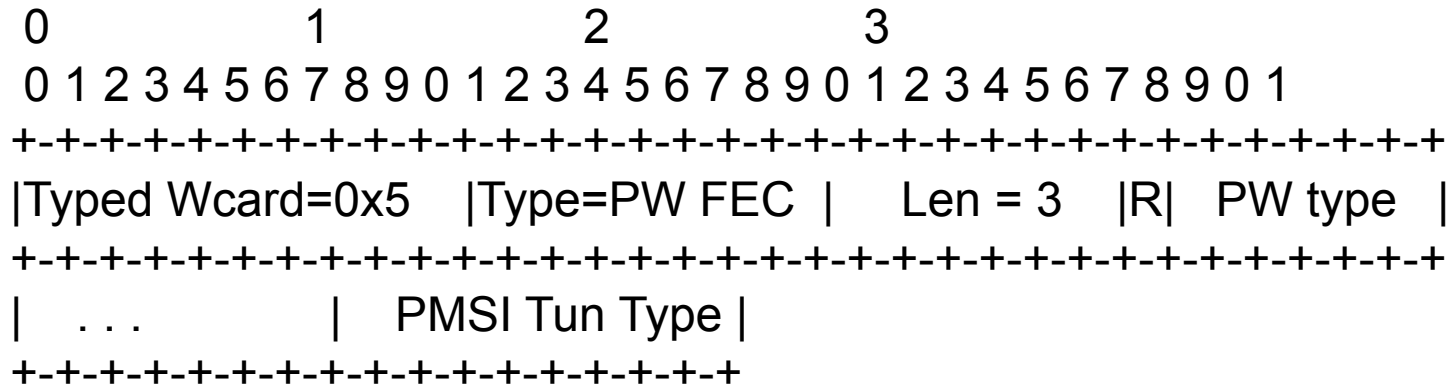
```
+-----+
| Multicast Source Length (1 Octet) |
+-----+
| Multicast Source (variable length) |
+-----+
| Multicast Group Length (1 Octet) |
+-----+
| Multicast Group (variable length) |
+-----+
```

P2MP PW LDP Capability

An LSR having P2MP PW capability **MUST** recognize **both** P2MP Upstream FEC Element and P2P Downstream FEC Element in LDP Label Binding Message.

Typed Wildcard FEC Format

[RFC5918] defines the general notion



draft-ietf-pwe3-pw-types-wc-fec-03 specifies that "Type" field can be either "PWid" (0x80) or "Generalized PWid" (0x81) FEC element type.

We extend the definition of "Type" field to include "P2MP PW Upstream" and "P2P PW Downstream" FEC element types, as well as add an additional field "PMSI Tun Type".

PMSI tunnel Type (only applies to Typed wildcard P2MP PW Upstream FEC)
PMSI tunnel Type = 0xFF means "wildcard" transport tunnel.

IANA Allocations

- FEC type name space:
 - P2MP PW Upstream FEC Element
 - P2P PW Downstream FEC Element
- LDP TLV type name space:
 - P2MP PW Capability TLV
- LDP MP Opaque Value Element type name space:
 - L2VPN-MCAST application TLV
- Pseudowire Interface Parameters Sub-TLV name space:
 - Selective Tree Interface Parameter sub-TLV.

Thank You !