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Definition of P2MP PW TLV for LSP-Ping Mechanisms

(draft-jain-bess-p2mp-pw-lsp-ping-03.txt)

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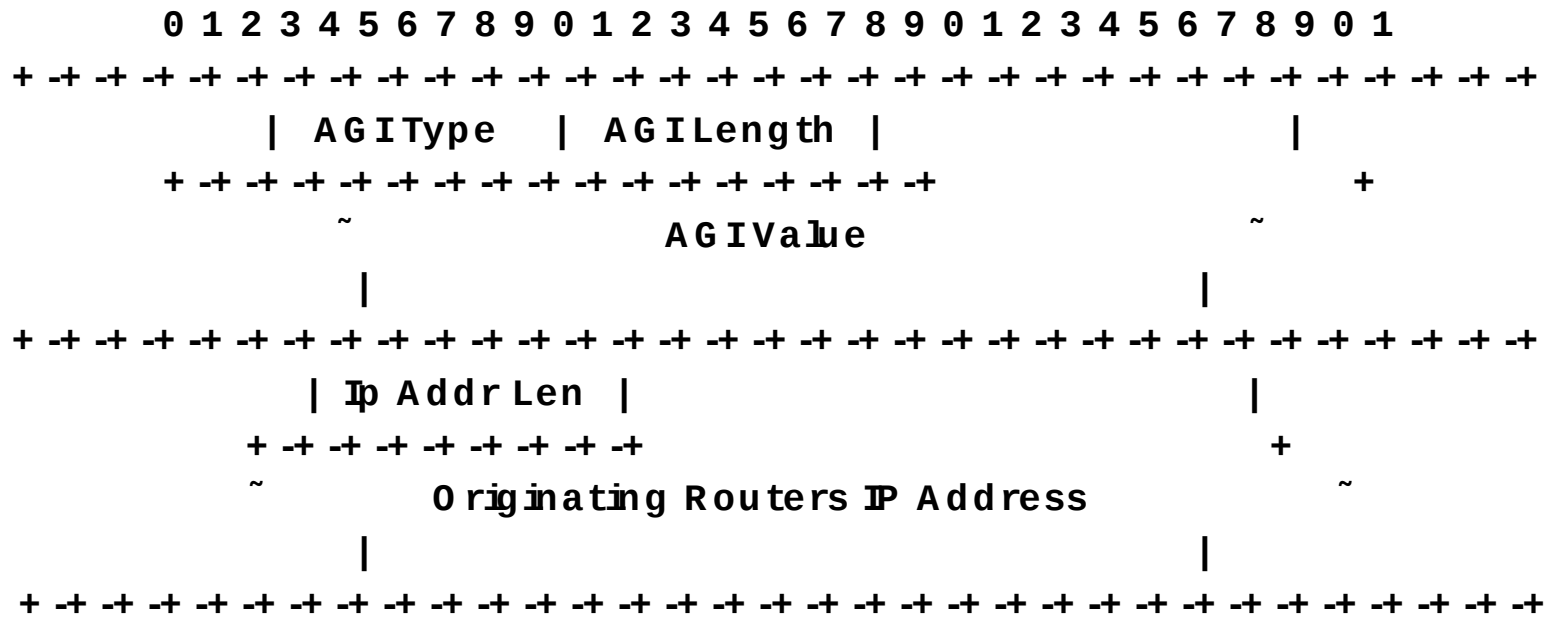
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LSP Ping Support for P2MP PW

- Define LSP Ping procedures for P2MP PW
- P2MP PWs can be signaled using LDP or BGP
- Supports Inclusive and Selective P2MP MPLS P-trees
- Supports MLDP and P2MP TE P2MP MPLS P-trees
- Define a new P2MP Pseudowire sub-TLV for Target FEC Stack to identify P2MP PW under test

P2MP Pseudowire Sub TLV Format



IANA is requested to assign a sub-TLV type value from the "Multiprotocol Label Switching (MPLS) Label Switched Paths (LSPs) Parameters - TLVs" registry, "TLVs and sub-TLVs" sub-registry.

Controlling Echo Responses

- Use Echo Jitter TLV defined in RFC6425 for preventing congestion of Echo Responses.
- Use Node Address P2MP Responder Identifier TLV defined in RFC6425 for limiting the Echo Reply to a single egress node.

Encapsulation of OAM Ping Packets

- Use GAL followed by ACH with PW channel type IPv4 for encapsulating LSP Ping Echo Request packets

Operations

- For Inclusive P2MP MPLS P-trees, the echo request is sent using the P2MP MPLS P-tree label.
- For Aggregate Inclusive P-trees, the echo request is sent using a label stack of <P2MP MPLS P-tree label, upstream assigned P2MP PW label>. The P2MP MPLS P-tree label is the top label and upstream assigned P2MP PW label is bottom label.
- P routers swap the P2MP MPLS P-tree label
- Bud/Tail PEs, performs the checks for the P2MP Pseudowire sub-TLV present in the Target FEC Stack TLV as described in Section 4.4 in [RFC4379] and respond according to [RFC4379] processing rules

Echo Reply using Downstream Assigned Label

- Root of a P2MP PW may send an optional downstream assigned P2P MPLS label in the LDP Label Mapping message for the P2MP PW signaling.
- If the root of a P2MP PW expects leaf to send echo reply using the downstream assigned label signaled in the Label Mapping message of the P2MP PW message, LSP Ping Reply Mode [RFC4379] in the LSP Ping echo request should be set to 4 “Reply via application level control channel”.

Next Steps

- Seeking Feedback
- Looking for WG adoption
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