
draft-dolganow-l3vpn-mvpn-expl-track

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Why the draft?

- ❖ Explicit tracking for wildcard C-multicast routes
 - ❖ Use cases exist when it is desired to track a wildcard C-multicast routes to decide whether to originate wildcard S-PMSI or not:
 - ❖ Should I switching from I-PMSI to (C-*, C-*) SPMSI?
 - ❖ Should I originate a wildcard S-PMSI (based on Receiver PE count for C-flows that would map to that wildcard S-PMSI)?
 - ❖ No explicit text for wildcard C-multicast route tracking
 - ❖ Mapping procedures assume no S-PMSI tracking (do not exclude S-PMSI routes encode for explicit tracking)

Why the draft?

- ❖ Explicit tracking for PEs joining same C-multicast tree for MVPN when BGP is used to exchange C-multicast routes
 - ❖ RFC6513 (section 5.3.2) - Uses S-PMSI A-D tracking request and Leaf A-D response
 - ❖ RFC6514 (Section 5) - S-PMSI A-D encoding: Set Leaf Information Required to 1, Tunnel Type set to “No tunnel Info”
 - ❖ RFC6514 (Section 4.4) - Leaf A-D encoding (Receiver PE IP) and reply to S-PMSI A-D as per procedures in 12.3
- ❖ But
 - ❖ Following 12.3 in order of text and through various cross-references requires clarification for the explicit tracking as outlined in the draft

Draft overview - encoding

- ❖ Single Place for tracking encoding procedures
 - ❖ Tracking (C-S, C-G) when no S-PMSI encoding (C-S, C-G) exists — no change
- ❖ Encoding modifications:
 - ❖ Tracking (C-S, C-G) when S-PMSI encoding the tracked stream and with tunnel info exists – (re-)issue S-PMSI with Leaf Information Required set to 1
 - ❖ Tracking wildcard streams (as per RFC 6625) - follow the above (C-S, C-G) encoding

Draft overview - Sender PE

- ❖ Single place for all tracking procedures
- ❖ 6514 / 6625 procedures clarifications / modifications:
 - ❖ Use S-PMSI A-D route with Leaf Information Required Flag set to 1 and tunnel info present when tracking is to continue after binding a tracked (C-S, C-G) or wildcard stream to S-PMSI
 - ❖ Specify order of issuing routes when explicitly tracked stream is collapsed back onto I-PMSI from S-PMSI
 - ❖ Extend Wildcard S-PMSI procedures for explicit tracking (today excluded)
 - ❖ Allow explicit tracking encoding
 - ❖ Exclude wildcard S-PMSI with no-tunnel attribute from finding a match for data transmission section 3.1 of RFC6625

Draft overview - Receiver PE

- ❖ Single place for all tracking procedures
- ❖ 6514/6625 Procedures clarifications/modifications:
 - ❖ Explicitly exclude existing procedures from setting-up forwarding path when route has “No tunnel information” present
 - ❖ Define what constitutes ACK response to wildcard explicit tracking
 - ❖ Respond with Leaf A-D if at least once (C-S, C-G) would match wildcard S-PMSI tunnel as per RFC6625 procedures
 - ❖ Exclude wildcard S-PMSI with no-tunnel attribute from finding a match for data reception - section 3.2 of RFC6625 (accounted for in the next revision of the draft)

Next-steps

- ❖ Reissue as a bess draft
- ❖ Gather feedback, please check implementations
 - ❖ Address Eric's comment (add / withdraw more specific A-D route that changes wildcard mapping)
- ❖ Interop issues with existing implementations (wildcard tracking)
- ❖ Inter-AS – anyone has a use case?