

# 87th IETF – Berlin

**draft-wijnands-mpls-mldp-in-band-wildcard-encoding-00**

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# Introduction

- mLDP in-band signaling has been defined for Source trees (SSM and Sparse-Mode) in the global and VRF context.
  - **draft-ietf-l3vpn-mldp-vrf-in-band-signaling-01**
  - **RFC6826**
- Source discovery has been omitted (deliberately) from the specification to avoid additional (overlay) signaling.
- It is considered to be a good multicast practice to move source discovery outside of the network.
- One of the main goals of in-band signaling is simplicity.
- **New use cases have been identified for in-band signaling.**

# 1. PIM free network

- MPLS is being extended more and more towards the edge.
- Its possible the Multicast Source and Receivers are directly connected to the MPLS network.
- IGMP/MLD Proxying (RFC4605) can be extended over the MPLS network using mLDP.
- IGMP/MLD Group membership is relayed to a proxy node, which will be the Root of the mLDP tree.

## 2. PIM-SM shared tree only forwarding

- Many financial networks have deployed PIM-SM shared tree only forwarding, also known as PIM with threshold infinity.
- In these deployments its typical that the RP (Rendezvous Point) is between the Source and the receivers.
- No Source tree is created.
  - it would overlap with the shared tree anyway.
  - it would only create more state.
- This is a very good use-case for (\*,G) in-band signaling.
- Reachability to the RP address is used to determine the mLDP root, like how the Source is used for (S,G) in-band signaling.

# Group membership

- Both solutions rely on signaling Group membership from the egress to the ingress node, like IGMP/MLD proxy.
- The egress node determines the who the ingress node is, by using the RP address or proxy node.
- When the ingress node received a group membership request, its up to the ingress node to determine how to pull traffic down the tree.

# Wildcard source encoding

- The in-band signaling procedures for group only mode overlap significantly with the procedures defined in draft-ietf-l3vpn-mldp-vrf-in-band-signaling-01 and RFC6826.
- We define the Source address field (of the existing in-band Opaque encodings) of all zero's to mean Wildcard source.
- Wildcard means, any source for a given group can be forwarded down this tree.
- Source address opaque field of all zero's is unspecified, so there is no risk in backwards compatibility or redefining existing behavior.
- There is no need to allocate new opaque types from IANA.
- Allows source aggregation.

# Wildcard group encoding

- Since we are defining Wildcard encoding, lets also define it for the group.
- A wildcard group means any group for a given source.

# Going forward

- We like to get feedback from the working group
- We're open to co-authoring

Questions?