

# Proxy LSP Ping

<draft-lim-proxy-lsp-ping-01.txt>

**IETF-86**

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# History

- First draft October 2006  
draft-swallow-mpls-remote-lsp-ping-00.txt
- Accepted as a WG document by April 2007  
draft-ietf-mpls-remote-lsp-ping-00.txt
- Intension was to go to last call after IETF-73  
November 2008 (rev -03)
- Three things occurred
  - Decided to complete p2mp ping first (RFC in Nov 2011)
  - Largest usecase is for mLDP which is currently being rolled out
  - Wanted implementation experience

# Proxy Ping Motivation

- Scalability for P2MP LSPs

  - Control

    - number of replies

    - network wide processing of MPLS Echo Requests

    - Reply scoping can limit the number of replies but still requires processing at the receiving node

- mLDP support

  - Trace from leaf to root

  - Previous Hop Information

# Proxy LSP Ping

- Proxy Echo Request

  - Out of band message to a to a “proxy” node

    - presumably a node on the path of the LSP of interest

  - Requests node to insert an inband MPLS Echo Request

  - Or asks for a Proxy Echo Reply for details on outgoing ports or upstream neighbor

- Proxy Echo Reply

  - Verifies that FEC was valid

  - Supplies PHOP information, downstream mapping, downstream neighbors

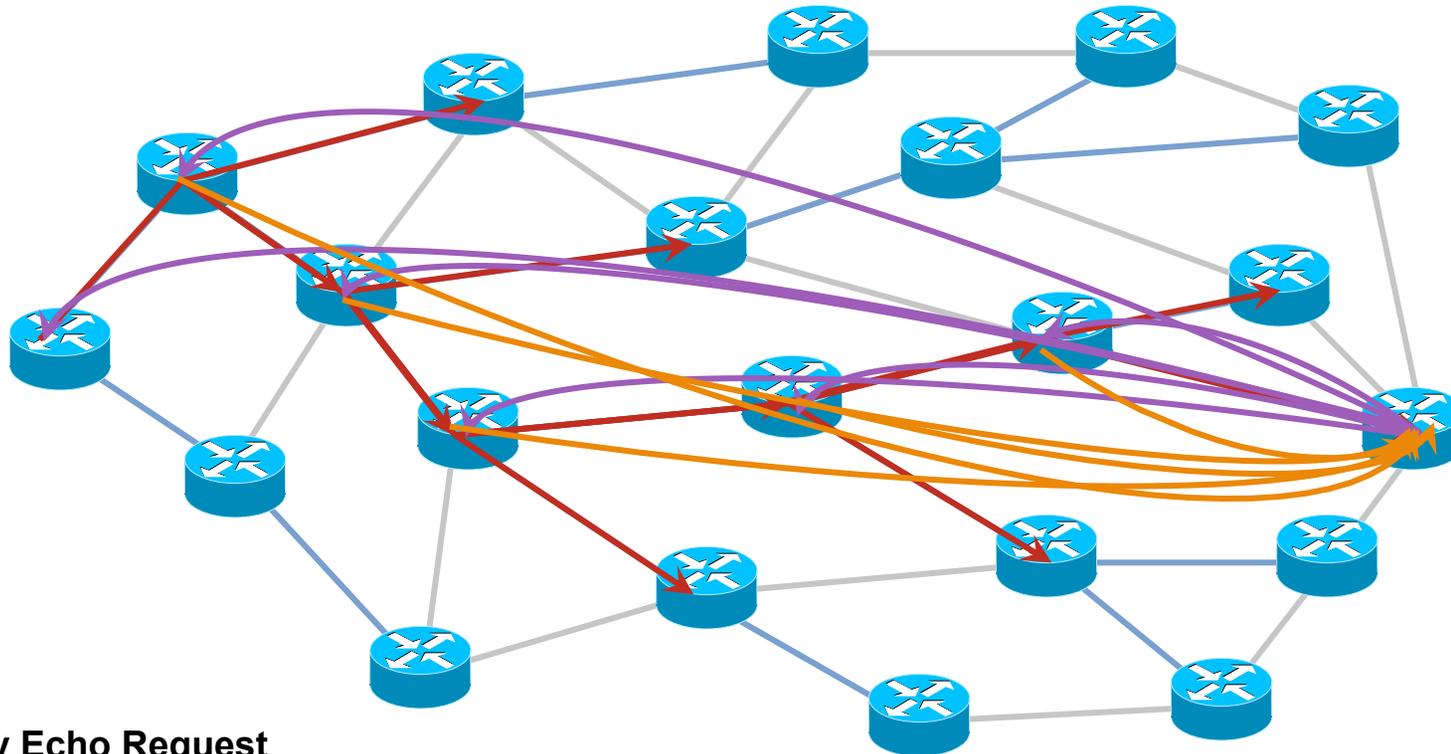
# Multicast LDP Tracing

- mLDP LSPs are initiated by the leaf nodes
- Root node may not know the tree topology
- Failure is most likely to be detected at leaf
- Leaf is a logical place to begin tracing

# Previous Hop Address Object

- Needed to communicate the address by which the upstream node knows this node
- Generally this would be the address used in the protocol by which the label for the bottom most FEC was exchanged
- This address would be used to specify the next hop when doing a reverse trace

# mLDP Traceroute



Proxy Echo Request

Proxy Echo Reply

Echo Request

Echo Reply

- Tree is traced from leaf to root
- PHOPs are learned as trace progresses

## Changes from previous draft-00

- Added Sam Aldrin as a co-author
- Added text about mLDP since that is the driving usecase
- Extensive edits
- Expanded some procedures where text was not sufficiently clear
- Added an acknowledgement for Nobo Akiya for his detailed review and comments

## Next Steps

- Not anticipating further functional changes  
Fairly stable (this is the 8<sup>th</sup> revision)
- Would like WG review
- Request (re-)adoption as a WG document