

TICTOC WG

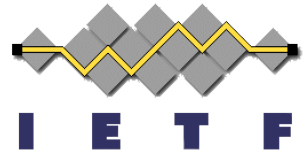
Transporting PTP Messages (1588)
over MPLS Networks

draft-ietf-tictoc-1588overmpls

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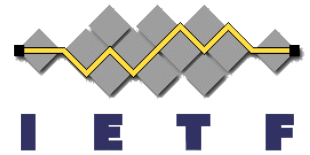
Introduction (1/2)

- LSRs must identify PTP messages so that it can perform TC processing
- No change required for Boundary Clocks
- Use dedicated LSPs for carrying PTP event messages
- Event Messages **MUST** use co-routed LSPs
- PTP LSPs and PWs **MUST** not be subjected to ECMP

Introduction (2/2)

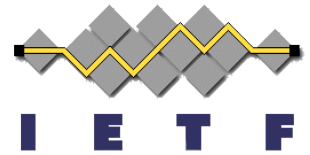
- PTP messages are time critical and must be treated with highest priority
- Ethernet FCS must be calculated at every LSR that does TC processing
 - Recommend incremental FCS update
 - FCS retention **MUST** not be used
- UDP checksum is optional when used with IPv4 and mandatory with IPv6

Signaling Extensions for 1588aware LSRs



- IS-IS and OSPF extensions specified to advertise 1588 aware capabilities so that the head-end 1588 node can construct a path considering all such nodes
- New RSVP object defined that **MUST** be used when signaling PTP LSPs
- Optionally gives the exact offset to locate the start of the PTP header in the payload

Open Issues



- Support 1588 over P2MP LSP
 - Requires co-routed return PTP LSP
 - There are drafts proposed for LDP and RSVP-TE
- Encapsulation Types
 - Ethernet and UDP/IP Encapsulations defined
 - Does the group need PTP PDU directly over MPLS?
- FRR may not be usable since it is not bidirectional
 - Recommend 1:1 or 1+1 protection or redundant master
- Is PHP support required?
 - If yes then BGP and Targeted LDP need extensions