

1588 over MPLS Update

draft-ietf-tictoc-1588overMPLS-05

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Shahram Davari (editor)

Scope

- Transport 1588 messages over MPLS network
- Support Master, Slave, Boundary Clock at LER
- Supports carrying Timing messages Transparently
 - Support Transparent Clock at LER and LSR
- Backward compatible with non-1588-Capable LSRs

Recap of the Solution

- Use standard Encapsulation
 - IP/MPLS or PW
- Use ***Dedicated*** LSPs to carry Timing messages
 - To detect Timing messages without DPI
- Timing LSP may be signaled
 - RSVP-TE extensions
- Routers advertise their 1588-capability
 - OSPF, IS-IS extensions

Highlights

- Is generic to support any Timing Protocol
 - PTP, NTP, Shim Timing, etc.
- Supports Time-stamping and Correction Field update
- Support various Timestamp field formats
- Support Signaling “offset” from BoS to Timing PDU
- Mandates CW to guarantee the proper parsing

Status

- Draf-00 published Jan 2011
- Draft-02 published Oct 2011
- Draft-03 published in Oct 2012
- Draft-04 published in Feb 013
- Draft-05 published in June 2013
- Last call July 2013

Last call Comments

- Why carry Timing over MPLS since it could be carried over Ethernet or IP?
 - Not all links are Ethernet and not all routers can do Ethernet switching. Also many MPLS-TP routers can't do IP forwarding
- Why is there a need to carry 1588 transparently over MPLS network?
 - This is required for carrier's carrier case, since each carrier may have it own Timing

Last call Comments

- Why not use a reserved label instead of dedicated LSP
 - Routers that don't understand the reserved label will drop or forward the packet to CPU
- Why support NTP and other Timing protocols
 - Area director asked us to do make the solution more generic