PTP Enterprise Profile

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IETF 87 Berlin, August 2013

Purpose

- PTP Profile for Enterprise IT Networks

- Existing PTP Profiles and those under development are tailored toward specialized applications distinct from enterprise networks

  - ITU G8265, G8275: Frequency and Time transfer in telecommunication networks, especially wireless back haul

  - IEEE C37.238: Power grid substation timing

  - IEEE 802.1AS, 802.1ASbt: Specialized audio-visual networks, industrial automation, automotive networks

Major Profile Properties

- Layer 3 mapping
    - IPv4 or IPv6
- End to end delay measurement method
    - Allows for the use of switches and routers lacking on path support
- Mixed unicast and multicast operation
    - Multicast Sync and Announce messages
        - Allows for auto configuration and fault tolerance via standard BMCA
    - Unicast Delay Requests and Delay Responses in default mode
        - Reduce traffic in network and on 1588 multicast addresses

Major Profile Properties (cont)

- Uncast Discovery and Unicast Negotiation forbidden
  - Simplify device configuration
  - Rely on best effort by Master Clocks
- Modes of operation for delay measurement
  - Unicast mode: Delay Requests and Responses MUST be unicast
  - Multicast mode: Delay Requests and Responses MUST be multicast
  - Hybrid mode: Delay Requests and Responses can be either
    - Master clocks respond in kind
    - Default mode for this profile

Key Changes Since Last Draft

- Many clarifications and corrections

    - thanks to reviewers

- IPv4 and IPv6 can coexist in same network

    - Only one IP version on the same communication path

- Management messages may be multicast

    - But not if they are relevant to only one specific device

- Both Unicast Discovery and Unicast Negotiation are prohibited

Key Changes (cont)

- Modes renamed to emphasize that they refer only to the treatment of Delay Request and Delay Response messages
  - Multicast Mode is now Multicast Delay Measurement Mode
  - Unicast Mode is now Unicast Delay Measurement Mode
  - Hybid Mode is now Hybrid Delay Measurement Mode
- Requirements for Transparent Clocks added
  - TCs SHALL NOT change delay measurement mode
  - TCs SHALL NOT alter the Enterprise Profile TLV

Status

- Draft-ietf-tictoc-ptp-enterprise-profile-00 submitted to TICTOC July, 2013

- Enterprise Profile Comments 063013 posted to TICTOC email reflector July, 2013

  - PDF file containing responses to 74 comments made about a earlier version of the profile document which was posted on Posted on the TICTOC email reflector in March, 2013

- Reviewers needed!

Ackowledgements

Thanks for numerous comments, criticisms, and questions, to:

Tal Mizrahi

John Fletcher

John Eidson

Laurent Martini

Steffano Ruffini

Silvana Rodrigues

And other members of the TICTOC WG