Support of IEEE-1588 time stamp format in TWAMP

draft-mirsky-ippm-time-format-01

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Problem Statement

• OWAMP and TWAMP allow only use of 64 bit-long NTP time stamp format
• IEEE-1588v2 has gained wide support and now is supported by many fast forwarding engines
• Provide ability to use other than NTP time stamp format in backward compatible manner
• This proposal defines OWAMP and TWAMP extensions to enable use of 1588v2 truncated format (64 bit-long)
Updates to Control Protocols

- Use Modes field to advertise and negotiate time stamp format between Server and Control-Client
- Define ONE new flags:
  - PTP Timestamp Capability
- MUST be capable to INTERPRET NTP and PTPv2 time stamp formats
- Timestamp Capability advertisement and negotiation procedures for OWAMP and TWAMP Control protocols defined:
  - Open TCP Connection
  - Server Greeting Message
  - Set-Up-Response
TWAMP Use Case

Control-Client
Session-Sender

Open TCP Connection

Server
Session-Reflector

PTPv2 flag is set in SGM

Yes

Sender can Interpret PTPv2

Yes

Set PTPv2 flag in Set-Up-Response message

No

Clear PTPv2 flag in Set-Up-Response message

No

Server Greeting message

Set PTPv2 flag in Set-Up-Response message
TWAMP Use Case (cont.)

- Control-Client Session-Sender
- Server Session-Reflector
  - PTPv2 flag is set in Set-Up-Response
    - Yes
    - No
  - Reflector can set NTP format
    - Yes
    - No
  - Reflector will use NTP format
  - Reflector will use PTPv2 format

- Request-Sessions
- Start-Sessions
- Test packets
- Server-Start
  - Accept-Sessions
  - Start-Ack
Update to Test Protocols

• Use Z field in Error Estimate to indicate time stamp format used by the network element:
  – 0 – NTP 64 bit-long format
  – 1 – 1588v2 truncated 64 bit-long format
TWAMP Light Consideration

• Session-Sender and Session-Reflector MAY be informed, e.g. through configuration, of time stamp format to be used, according to their capabilities and rules used to negotiate time stamp format between Server and Control-Client
Next steps

• Welcome comments from the WG
• Asking WG to consider draft adoption