In-situ OAM (IOAM)

draft-ietf-ippm-ioam-data-01

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Updates between -00 and -01 version

- Overflow indication and max value for time data fields
  - “If the transit delay exceeds 2^31-1 nanoseconds then the top bit 'O' is set to indicate overflow and value set to 0x80000000”
- Follow IETF convention is that bit 0 is the most significant bit
  - Flags field – O-bit (Overflow bit)
  - Fixed examples in section 4.1.4. (Examples of IOAM node data)

See also: https://github.com/inband-oam/ietf/issues?q=is%3Aissue+is%3Aclosed

Discussion topics

- Node data length does not include opaque state snapshot length
  - Proposed by Mickey Spiegel: https://github.com/inband-oam/ietf/pull/60/commits/77725d2ff5d7ab7d0fd384c3d5a89faa77309202
  - This is a bug and we‘ll reflect it in the next rev

Discussion topics

- Timestamp format
  - Proposed by John Lemon: https://mailarchive.ietf.org/arch/msg/ippm/kg1hQTrnz_VL7oRp4ffZmpgZbJo
  - Extend the timestamp to allow it to support both PTP and NTP
    - The seconds portion would remain largely as is, although the seconds would obviously use different epochs, depending upon which type of timestamp is used within the in-situ OAM domain
    - The datatype currently named nanoseconds would be renamed to sub-seconds and would either carry nanoseconds or fractional seconds, for PTP or NTP, respectively
  - Change current timestamp related code points for IOAM-Trace-Type and add two new ones:
    - CHANGE: Bit 2 When set indicates presence of PTP timestamp seconds in the node data
    - CHANGE: Bit 3 When set indicates presence of PTP timestamp nanoseconds in the node data
    - NEW: Bit 12 When set indicates presence of NTP timestamp seconds in the node data
    - NEW: Bit 13 When set indicates presence of NTP timestamp fractional seconds in the node data

Discussion topics

- New Edge-to-Edge data types
  - Proposed by John Lemon: https://mailarchive.ietf.org/arch/msg/ippm/kg1hQTrnz_VL7oRp4ffZmpgZbJo
  - Add a few Edge-To-Edge data types
    - In addition to the currently defined 64-bit sequence number, add a sequence number taking up only 32 bits
    - Add same timestamp types as used by Hop-By-Hop to measure delay (and delay variation) across the entire path, without having to use the Hop-By-Hop timestamps to measure at every node in the path