IETF119

Scalable Approaches on Supporting IOAM in IPv6

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Motivation

- IOAM Trace needs per-hop processing → IPv6 HbH EH
- [RFC8200] IPv6 HbH EH must be the first EH
- [RFC9486] IOAM Pre-allocated Trace in HbH EH
  - Potential large data trace makes accessing subsequent EHs (e.g., SRH) costly or even impossible
- AS SRv6 becomes prevalent, we need to mitigate the problem

Possible Solutions

- Separate and postpose IOAM Trace Data after RH
  - Instruction part (fixed size) is in HbH EH, but data part (variable size) is after RH → RH location is fixed and reachable.
  - Using incremental data trace → fixed data insertion location
  - Possible trace data location
    - TLV option in a new EH or in the RH
- Segment IOAM Export
  - Fix or limit the IOAM overhead in HbH EH
  - Two sub-approaches
    - Fixed overhead and Independent of SRv6 → [I-D.song-ippm-segment-ioam] → need update [RFC9197]
    - Limited overhead in SRv6 → Data exported at each segment endpoint → overhead could still be too large
- IOAM Direct Export [RFC9326][RFC9486]

Comments, suggestion, and collaboration welcome!