In-band Edge-to-Edge Round Trip Time Measurement

draft-song-ippm-inband-e2e-rtt-measurement-00

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Requirements

• Use case
  • 5G edge service
    • Application-aware traffic engineering and load balancing

• Round Trip Time and other path measurements
  • In-network edge-to-edge
    • In band measurement

• Rule out host-based ICMP and other router-based active measurements like TWAMP
How about the other methods

• IOAM Trace Option + loopback
  • Too heavy

• IOAM E2E option
  • Only one way measurement

• Alternate Marking (RFC8321)
  • One way measurement, needs to set up measurements on both ends
  • High measurement latency
Proposed solution

• Modify IOAM E2E option to support information feedback
  • Similar to the concept in “In-situ OAM Flag” (draft-ietf-ippm-ioam-flags-04)
  • A flag ‘1’ tells the tail-edge to feedback the data to the head-edge
Measurement Architecture

- The head-edge sets the flag, and adds the timestamp or a packet identifier in the data fields.
- The tail-edge sets the feedback flag, and copies the timestamp or the packet identifier on a feedback packet to the head-edge.
Summary & Next Steps

• A simple enhancement with useful use cases
• Seek to merge into existing documents or develop an independent WG draft
• Welcome suggestions and contributions