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

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

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Requirements

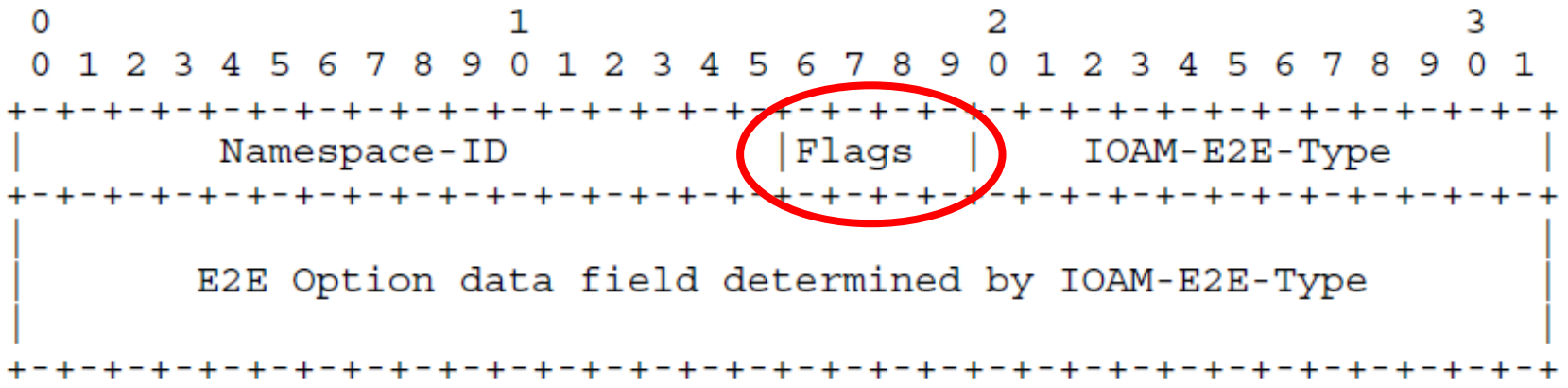
- Use case
  - 5G edge service
    - Application-aware traffic engineering and load balancing
- Round Trip Time and other path measurements
  - In-network edge-to-edge
    - In band measurement
- Rule out host-based ICMP and other router-based active measurements like TWAMP

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

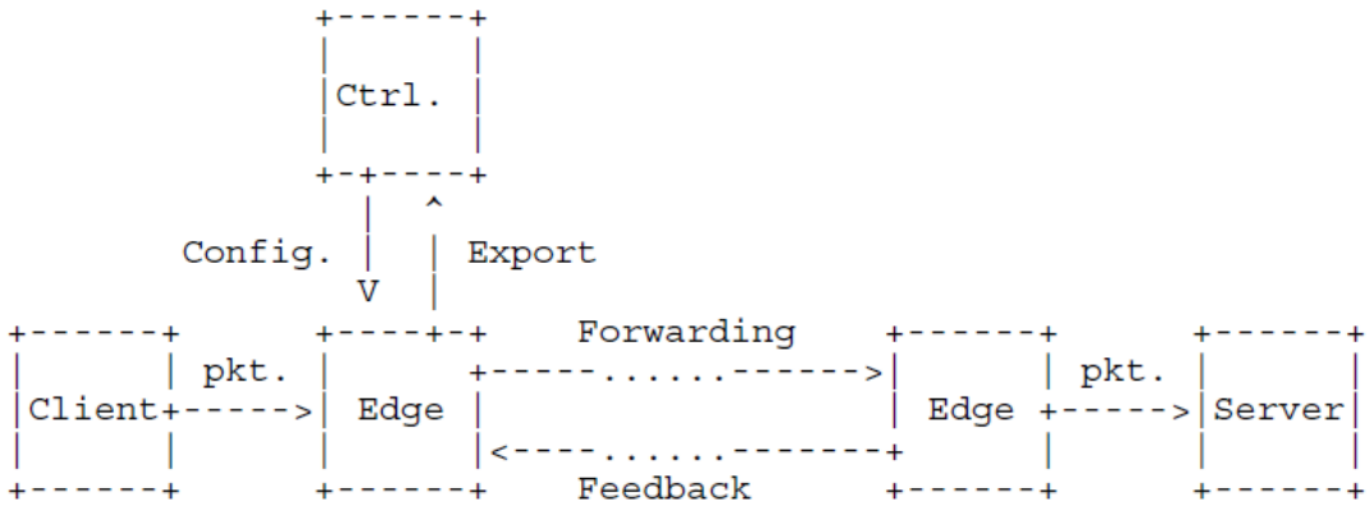
Proposed solution

- 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