Multicast On-path Telemetry using IOAM

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Revision updates

• Reference documents updated
  • IOAM Data has been published as RFC9197
  • IOAM DEX has been submitted to IESG for publication

• The schemes in this document are updated to comply with the IOAM trace option specified in RFC9197 and IOAM DEX (to be published)
Problem Statement and Method Recap

• On-path telemetry is useful for multicast traffic monitoring
• IOAM trace option introduces considerable data redundancy
• Two Solutions
  • Based on IOAM Trace option
  • Based on IOAM DEX
IOAM Trace Option-based Solution (1)

• IOAM Trace: telemetry data are accumulated in user packet as a trace
• In multicast, the previous data are copied to each branch, introducing redundancy
• Solution: combine IOAM trace and the postcard-based telemetry
• Configure each branching node to export the data trace collected so far and clear the trace in user packets
• No update to RFC9197, only need control plane configuration
IOAM Trace Option-based Solution (2)

- For multicast tree reconstruction
  - Node ID data is mandatory
  - Each section’s trace needs to include the branching node
IOAM DEX-based solution (1)

- IOAM-DEX: telemetry data sent as independent postcards based on an instruction header at each hop.
- In multicast, branch identifier is needed to reconstruct the multicast tree.
- Solution: instruction contains a global unique branch identifier as specified in RFC9197 up to 256 local branches.
IOAM DEX-based solution (2)

Update to IOAM DEX Header

Application Example
Next Step

- Request for WGLC