Background / Motivation

Background
• Multicast traffic monitoring is important
  • Reconstruct and visualize the multicast tree
  • Performance monitoring and trouble shooting
• Conventional OAM techniques are insufficient
• On-path telemetry techniques (IOAM, PBT, HTS) in IPPM WG.

Problem
• Currently on-path telemetry techniques have flaws for multicast.
  • IOAM: Every packet carries the entire data trace → data redundancy
  • PBT: No branch identifier → can’t correlate the postcards

Objective
• Modifications are proposed to allow the original multicast tree to be correctly reconstructed without unnecessary replication of telemetry information
Summary

• Two solutions
  • Per-hop Postcard – an enhancement to the original PBT scheme
  • Per-section Postcard – an enhancement to the original IOAM scheme
• Per-hop Postcard
  • A branch node is either the root or any node that replicates packets
  • Each branch node adds a branch identifier to the instruction header
    • For global uniqueness, can use the tuple {node ID, index}
Example

• Per-section Postcard
  • A section is the path between two adjacent branch node or between a branch node and its adjacent leaf node.
  • A postcard is send at each section’s end node
    • The postcard contains the data for the entire section
    • Postcards for one packet can be easily stitched together.
  • No need to modify IOAM header format, just need to refresh the header at each section head.
Request to the WG

• Looking for WG adoption in mboned
  • or perhaps opsawg but they don’t know mcast.

• May be best to have the protocol modifications done in pim