draft-song-multicast-telemetry-06

IETF109

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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

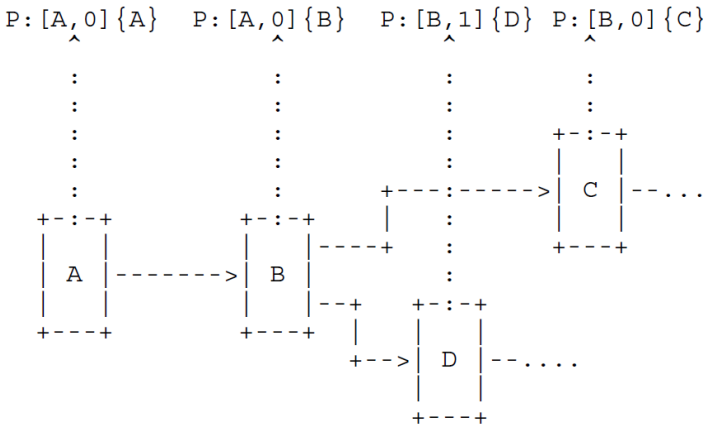
- Currently on-path telemetry techniques have flaws for multicast.
  - IOAM: Every packet carries the entire data trace → data redundancy
  - PBT: No branch identifier → can't correlate the postcards

Objective

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

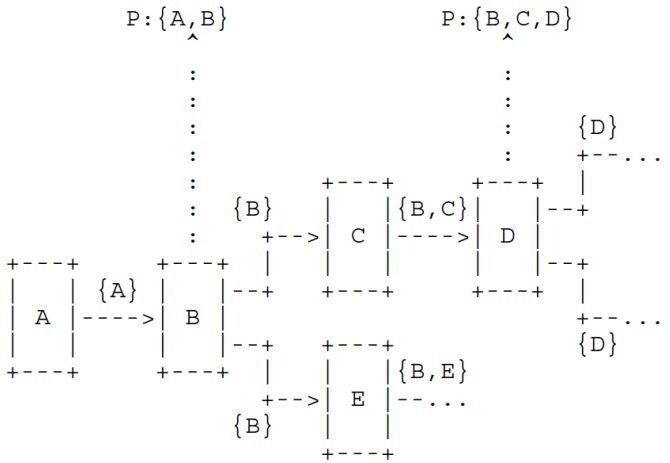
Summary

- 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