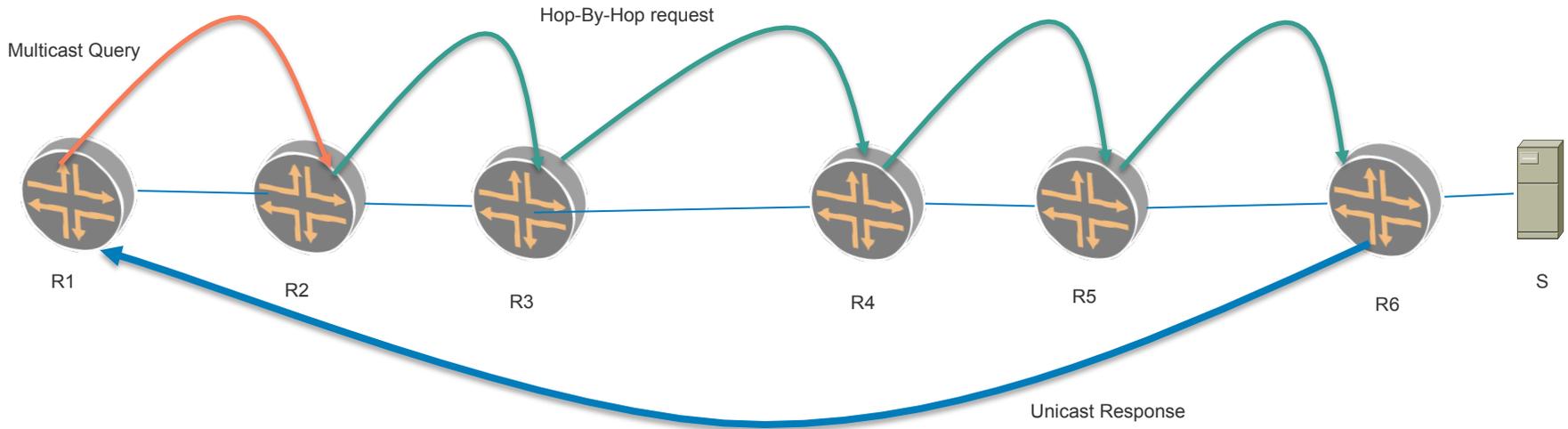# MULTICAST TRACEROUTE FOR MVPNS

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IETF 90 – TORONTO

MTRACE V2– THE CURRENT VERSION

Multicast Query

Hop-By-Hop request

R1   R2   R3   R4   R5   R6   S

Unicast Response

- Starts at the "Last-Hop" and travels to each upstream neighbor towards the source.
- Multicast problems interpreted based on the response block and error codes added
- Successful mtrace results in the Querier receiving the mtrace with Response Blocks populated
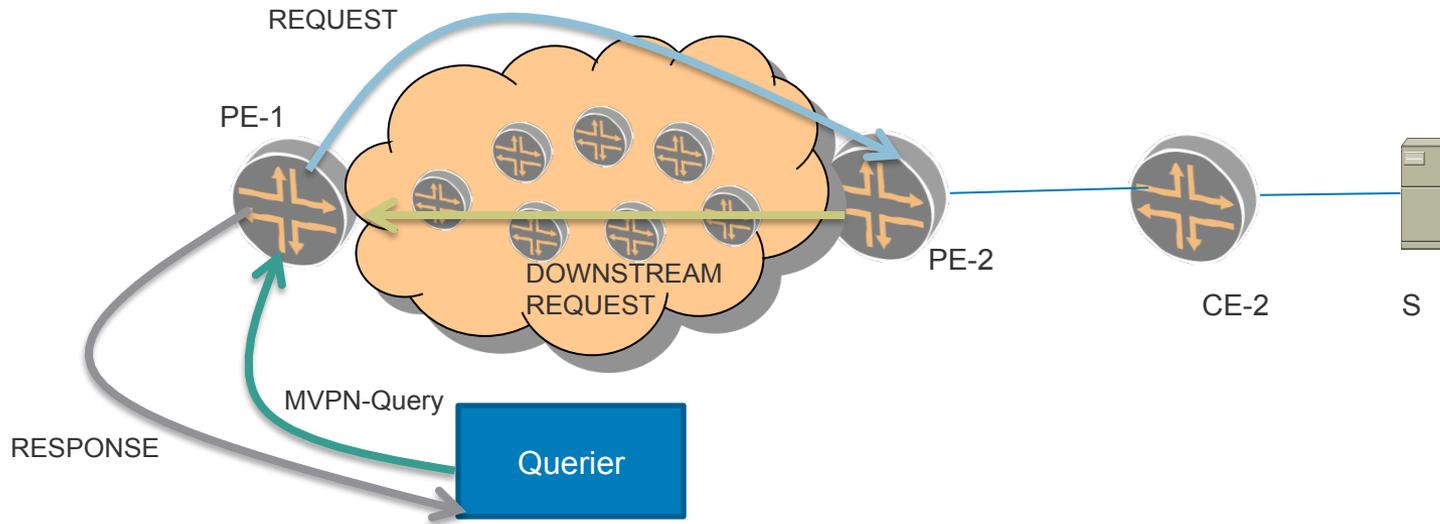
- Mtrace, as is, does not work in BGP-MPLS MVPN scenario
- PE routers are not PIM adjacencies
- No checking of MVPN state
- No BGP-MVPN specific error codes available.

MTRACE FOR MVPN– WHAT IS NEW?

REQUEST

PE-1

DOWNSTREAM
REQUEST

PE-2

CE-2   S

RESPONSE

MVPN-Query

Querier

- Initiated within provider space
- New 'MVPN Extended Query block' to identify MVPN specific Mtrace Query
- Downstream Request is sent on same provider tunnel that the traffic is sent on
- New Response Blocks to carry NLRI and PMSI tunnel Attributes which is used by PE's for control plane validations
- New MVPN specific error codes added to identify MVPN related issues
- Applied to various MVPN deployment scenarios

MTRACE FOR MVPN – ERROR CONDITIONS

REQUEST
With MVPN Augmented
Response

PE-1

PE-2

CE-2

S

MVPN-Query

Querier
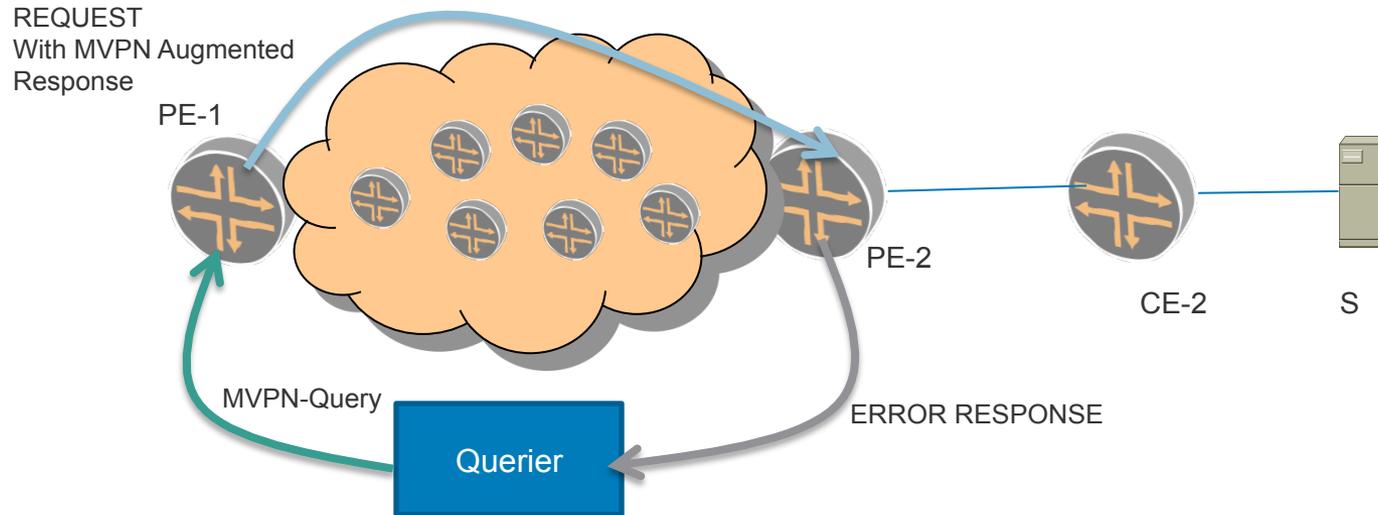
ERROR RESPONSE

- MVPN Mtrace handles MVPN specific error conditions.
- For example, consider situation where PE-1 sent a Leaf AD route in response to SPMSI AD advertised by PE-2
- Due to BGP related issues at RRs or PEs, PE-2 did not receive the LEAF-AD route from PE-1
- A Mtrace Query for this (C-S,C-G) from PE-1 would result in an appropriate MVPN error code. This is sent from PE-2 to the Querier

NEXT STEPS

- ## New version is expected shortly
  - ## Working through comments received by Eric Rosen
    - What is sent in Augmented Response Blocks
    - Downstream Request
    - Defining exact error codes
    - Other clarifications/feedback

- ## Request Review and Feedback.

- ## Looking for Working Group adoption after next rev

- http://www.ietf.org/id/draft-kebler-kurapati-l3vpn-mvpn-mtrace-01.txt