Flow label for equal cost multipath routing in tunnels

draft-carpenter-flow-ecmp-02

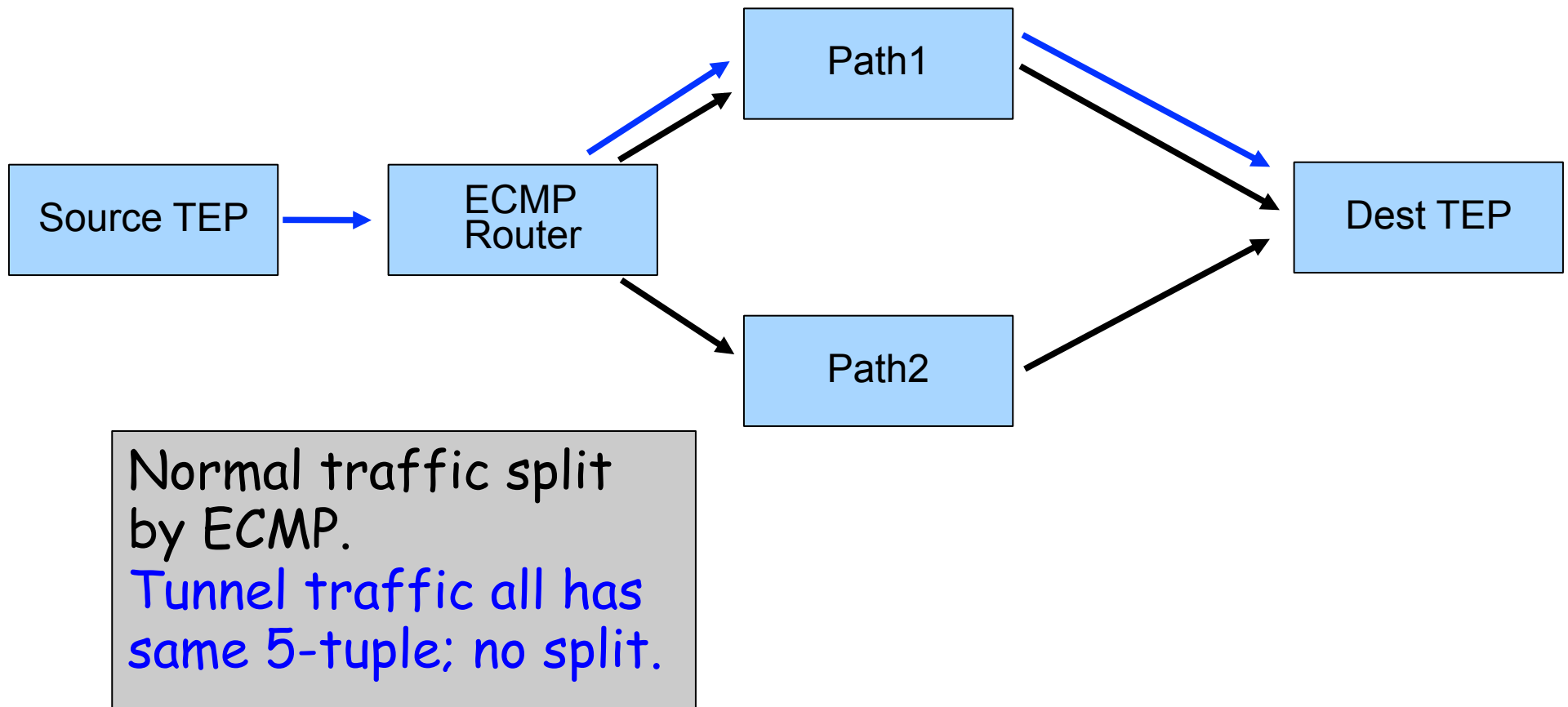**Brian Carpenter**
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The problem with tunnels

Normal traffic split by ECMP.
Tunnel traffic all has same 5-tuple; no split.

Proposed solution

- For foo-in-IPv6 tunnels, the <u>*source TEP*</u> sets a flow label per user flow in the <u>*outer packet*</u>

  - For IP-in-IPv6, the flow label is based on the 5-tuple of the <u>*inner packet*</u>

  - It should be well distributed (pseudo-random)

- Intermediate ECMP or LAG paths use hash based on 6-tuple, the normal 5-tuple plus the flow label

  - works the same as before for non-tunnel traffic (and even better if flow label is set)

  - also splits tunnel traffic

  - fully conformant with RFC 3697

- <u>*Caveat:*</u> would not work in Inter-AS scenarios if the IPv6 flow label is allowed to be 'mutable' …

Changes from -01 to -02

- Provided further background information
- Incorporated LAG (Link Aggregation)
- Changed to BCP language in Section 3, "Guidelines" to provide better guidance
- Added new co-author

Next Steps

- Adopt as WG draft?

Thank you!