Flow label for equal cost multipath routing in tunnels

draft-carpenter-flow-ecmp-02

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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 **source TEP** sets a flow label per user flow in the **outer packet**
  - For IP-in-IPv6, the flow label is based on the 5-tuple of the **inner packet**
  - 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

- **Caveat:** 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!