MPLS in UDP: The Adventure Continues

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draft-ietf-mpls-in-udp: A Brief History

- IETF Last Call (-04), Jan 2014: Problematic ✯
  - Concern #1: Congestion
  - Concern #2: UDP Zero Checksums with IPv6
- AD follow-ups @ London and Toronto IETFs
- TSV/RTG design team formed at Toronto IETF
  - Includes tsvwg GRE-in-UDP draft: Similar concerns
  - Key design team members: David Black, Ross Callon, Gorry Fairhurst, Xiaohu Xu, Lucy Yong
- Now: Concerns addressed in -07 (we hope)

MPLS in UDP: Congestion

- Congestion-controlled traffic: Not a problem
  - IP traffic assumed to be congestion controlled
- Otherwise (not congestion controlled, or not known to be congestion controlled):
  - Service provider or cooperating providers (MUST)
    - Careful provisioning by network operator(s) (MUST)
    - Prevent uncontrolled traffic from "escaping" (SHOULD)
  - No general/public Internet usage (MUST NOT)
    - Unless congestion controlled (see first bullet)

MPLS in UDP: UDP Zero Checksums with IPv6

- Reminder: No IPv6 header checksum
  - Relies on link and/or UDP checksums
  - Between links: UDP checksum only
- IPv6 UDP zero checksum usage requirements
  - Same as non-congestion controlled traffic
    - Service providers, not general Internet (MUST)
    - Including traffic "escape" prevention (SHOULD)
  - Additional header robustness (MUST)
    - Check everything that it makes sense to check
    - Mis-delivery less likely if 2+ corrupt fields needed

Next Steps

- MPLS in UDP: Needs a second IETF Last Call
  - Brief Q&A here (or come find us)
- GRE-in-UDP: Design team still working on text
  - GRE usage scope: Broader than MPLS
- Design Team did much more work than expected
  - Serious increase in size/length of drafts
  - Many thanks to the design team members
- IAB SEMI workshop position paper submitted:
  - UDP encapsulation: Important (e.g., for middleboxes)
  - This sort of UDP design work should be easier & faster