draft-villamizar-mpls-forwarding-00

MPLS Forwarding Compliance and Performance Requirements

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Note: Slides from IETF-84 (Vancouver) are at:

http://www.ietf.org/proceedings/84/slides/slides-84-mpls-15.pptx

MPLS Forwarding - First Draft Highlights

- Same general focus. Same target audience.

    1. Chip vendors
        - consolidated summary of requirements
        - does not supersede any existing RFCs
    2. Systems vendors
        - know what to look when designing product
        - know what providers will be looking for
    3. Providers or other deployment
        - help ask the right questions of vendors
        - help validate vendor claims through testing

- Scope of document expanded from "deep stack" to "MPLS forwarding".

- Focus is on forwarding issues, with references to provide basic forwarding requirements.

MPLS Forwarding - Overview

- Review a few apparent misconceptions.

- Review forwarding issues.

- Questions for Suppliers

- Forwarding Compliance and Performance Testing

MPLS Forwarding - Misconceptions

Misconceptions existing surrounding the following topics.

- Label stack depth

  1. Assumptions about shallow stacks
  2. Loss of forwarding rate with deep stacks
  3. Multipath and deep stacks
  4. UHP (Ultimate Hop Popping)

- Required forwarding rates

- Bursts of short packets

- Multipath support

  1. PW Control Word
  2. Flow Label
  3. Entropy Label

MPLS Forwarding - Issues

- Forwarding Basics

  1. References to base documents.
  2. Update RFCs: TTL processing, Explicit NULL, Diffserv & EXP rename to TC, ECN, G-ACh and GAL
  3. Uses: LDP, RSVP-TE, FRR, PW, VPN
  4. Link Bundling & Hierarchy

- Packet Rates

  1. Full rate with small packets is nice ...
  2. Otherwise bursts of small packets need to be considered.
  3. Rates should not be diminished under most circumstances.

- MPLS Multipath Techniques

  1. Basics: Label Stack & IP Header
     - which fields may be used and which must not be used.
  2. Pseudowire Control Word
  3. Pseudowire Flow Label
  4. MPLS Entropy Label

- MPLS-TP and UHP

  1. Multiple POPs possible - counters needed for each POP

MPLS Forwarding - Moving Forward

- Please **Read the draft and comment on it on the MPLS WG mailing list**

- If chips or systems don't get it right, it can limit deployments and/or require rejection or premature retirement of equipment.

- WG chairs and ADs are supportive of this work, but review and expression of interest from the WG is needed.