Upstream LSR Redundancy for Multi-point LDP Tunnels

draft-pdutta-mpls-mldp-up-redundancy-00.txt

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Goals

- Minimize the service disruption due to node/link failures when mLDP is deployed
- The draft proposes a set of procedures that minimize packet loss when an upstream LSR node or link fails.
- This document does not change any specifications of mLDP, no interoperability issues.

Topology

- Scenario 1: ECMP

- Scenario 2: non-ECMP
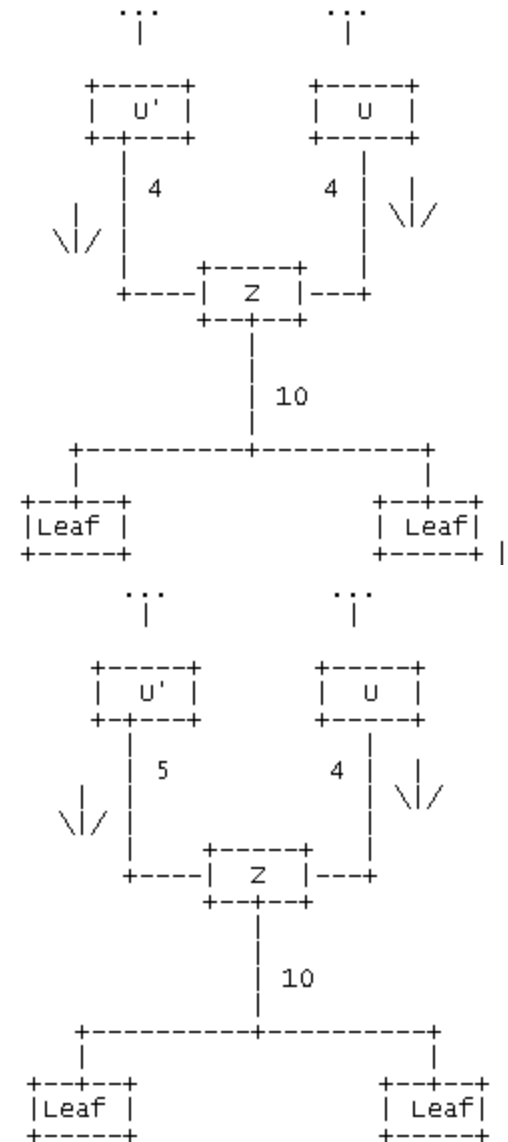
Procedures (1)

- Upstream LSR failure protection can be provided by taking advantage of redundant topologies in service provider networks.

- A local LSR Z selects two upstream LSRs

  – One primary LSR U and at least one backup LSR U'.

  – Label mappings L sent to U and L' sent to U' shares the same downstream next-hop label forwarding entries at Z

Procedures (2)

- Data packets are received by Z from both U and U' simultaneously. Redundant packets received from U' are discarded by Z.

- When Z detects a reachability failure to U then it switches its upstream to the backup LSR U' and packets are immediately available to forward out of each downstream next-hops.

Procedures (3)

- Selection of backup upstream LSR
    - ECMP case
        - Hash based selection of the candidate upstream LSR(s)
    - Non ECMP
        - LFA based selection of the candidate upstream LSR(s)

Next Steps

- Adding more text on failure detection/ triggers

- Propose to adopt this as WG document?

Questions/Comments?