Signaling RLD

MPLS Interim 2023-9-21

Agenda

- Definition
- Advertising Scope
- Advertising Protocols
- Related Works

Definition

- Readable Label Depth(RLD)

[draft-ietf-mpls-mna-fwk-04]: the number of LSEs, starting from the top of the stack, that a router can easily read in an incoming MPLS packet.

  - with no performance impact
  - line-rate processing
  - full forwarding rate
  - … …

Advertisng Scope

- **Per-link**
  - a modular node consisted of a number of different line card, which are based on different forwarding engines
  - virtual routing instances on the same device owning different virtual/sub ports
- **Per-node**
  - the smallest RLD on the node

Advertising Protocols

- IGP
  - Maximum SID Depth (MSD)： the maximum number of SIDs (SR)/ the maximum label depth (non-SR)
  - a new IGP-MSD Type: RLD MSD

- BGP-LS/YANG
  - In the centralized scenario, the controller needs to be aware of the RLD of each intermediate LSR
  - IGP-MSD sent via BGP-LS[RFC8814] or YANG[draft-ietf-mpls-msd-yang]

Related Works

- **ERLD: related with the router's ability to process ELs**
  - The router will perform load-balancing using the EL if the EL is placed within the first ERLD labels. A router capable of reading N labels but not using an EL located within those N labels MUST consider its ERLD to be 0.[RFC8662]
- **Other network action-specified RLDs similar to ERLD**
  - Flow-ID Readable Label Depth(FRLD) [draft-ietf-mpls-inband-pm-encapsulation]
  - Do these MSD need to be defined further ?
  - RLD+network action capability= ability to process the network action within the RLD
  - How to process when both RLD and network action-specified RLD are received ? Implementation specific

Thank you!