ISIS TE Metric Extensions

draft-previdi-isis-te-metric-extensions-02

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- This draft proposes the same extensions proposed in draft-ietf-ospf-te-metric-extensions
- ISIS to carry topology performance information
  - Currently, the only “cost” is the one statically assigned to a link
- Difficult to capture latency, loss and bandwidth in single static metric
- I need to know the current values at path/topology compute time

Overview

- ISIS TE Metric Extensions automatically distribute performance data
  - Allows control plane manipulation
  - E.g.: To permit MPLS tunnel setup failover, fallback based on network performance
  - E.g.: Compute ALTO topologies based on current network resources
  - Intentionally independent from measurement protocols
  - Also, intentionally independent from applications
    - MPLS-TE
    - Routing
    - ALTO-Like ranking services
    - Multi-Layer topology advertisement
    - Weighted ECMP
    - …
  - Modular and extensible

New SubTLVs

- Two Main Types of information
  - Nominal (Routine)
  - Anomalous (Significant) information
- Nominal TLVs used to calculate steady state
- Five New Sub-TLVs (Currently):
  - Unidirectional Link Delay
  - Unidirectional Delay Variation
  - Unidirectional Packet Loss
  - Unidirectional Residual Bandwidth
  - Unidirectional Available Bandwidth
- Upon SLA violation, Anomalous (“A”) bit raised.

New SubTLVs

- Changes in -02
  - “A” bit defined for all SubTLVs
  - Mandate use of Interface and Neighbor Addresses SubTLVs for both IPv4 and/or IPv6

Thank You