

ISIS TE Metric Extensions

draft-previdi-isis-te-metric-extensions-03

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History & Discussion

- Draft got active discussion last IETF and on-list (thanks!)
- Same concerns applied to companion OSPF draft
- Updated drafts before IETF
- Discussion among those concerned happened this IETF and an update is planned after IETF.

Level Set

- To address concerns about stability and load, drafts **already** included:
 - Suppression
 - Inter-update throttling
 - Various configurable thresholds
- We have added to those

Additions Section 1

- Avoiding queue induced loss and delay

“While this document does not specify how the performance information should be obtained, the measurement of delay SHOULD NOT vary significantly based upon the offered traffic load. Thus, queuing delays and/or loss SHOULD NOT be included in any dynamic delay measurement.”

- Avoiding FA tunnel attributed buffer delay measurement

“For links, such as Forwarding Adjacencies, care must be taken that measurement of the associated delay avoids significant queuing delay; that could be accomplished in a variety of ways, including either by measuring with a traffic class that experiences minimal queuing or by summing the measured link delays of the components of the link's path.”

Additions Section 3/4

- Added new sub-TLV (Low/High Unidirectional Link Delay)
 - For LAG, composite links, or other uses
 - Provides a low and high delay value, measured in the same units as existing delay sub-TLV; *not* min/max to allow removal of outliers
 - Accounts for scenarios such as LAG bundles, and other SLA strategies where averaging is not applicable
 - As before, measured over a configurable interval
 - Governed by same thresholds as before
 - Optional ability to insert MANUALLY configured offset value to each measured value (to communicate operator specific delay constraints)
- Removed provisions for unmeasured metrics (instead of zeroing, the sub-TLV would just not be sent)
- Adding manual override to sub-TLVs that are dependant on underlying measurements (use case is migrations)

Additions Section 7

- Additional guidance on queue induced delay and loss:

“Furthermore, it is RECOMMENDED that any underlying performance measurement mechanisms used not account for buffer delay and loss and/or that the thresholds described in this document be tuned accordingly and conservatively).”

- Added default inter update timer- 120 seconds
- Noted that measurement interval MUST expire before updated sent
- Noted that low/high delay MUST be the low and high delay OVER a measurement period- not instantaneous

New Section (8)

“Enabling sub-TLVs

Implementations MUST make it possible to individually enable or disable each sub-TLV based on configuration.”

Final Considerations

- Issues had been brought up in both OSPF and ISIS
 - Those issues have been discussed and resolved
 - These last changes will be reflected in the next rev of draft-previdi-isis-te-metric-extensions

We'd like to request WG Adoption