

BGP attribute for North-Bound Distribution of Traffic Engineering (TE) performance Metric draft-wu-idr-te-pm-bgp-03

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Recap.

- TE performance related information is required by some external components(e.g.,ALTO server,PCE server)
 - TE Performance information includes network delay, jitter, packet loss, bandwidths.
 - PCE Server can use network performance info as constraint for end to end path computation
 - ALTO server can gather and aggregate these dynamic network performance information and use these info to decide which endpoint to connect.
- TE performance can be hard to gather via ISIS or OSPF or need to gather using other means in some cases
 - Inter-AS PCE computation
 - Hierarchy of PCE
 - BGP
 - NMS/OSS
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- A new general mechanism is needed to collect and distribute TE performance information
 - draft-ietf-idr-ls-distribution describes a mechanism to distribute link state and TE information using BGP
 - This draft uses BGP to share additional TE performance related information to external components beyond linkstate and TE information contained in [I-D.ietf-idr-ls-distribution]

New BGP TLV attribute for TE performance info

- [I-D.ietf-idr-ls-distribution] defines new BGP path attribute (BGP-LS attribute) to carry link, node, prefix properties.
- This draft reuses existing BGP-LS attribute and defines 7 new TLVs that can be announced as BGP-LS attribute used with link NLRI.
- These BGP TLVs populate the following network performance information:
 - Unidirectional Link Delay
 - Min/Max Unidirectional Link Delay
 - Unidirectional Delay Variation
 - Unidirectional Packet Loss
 - Available bandwidth
 - Unidirectional Residual Bandwidth
 - Unidirectional Available Bandwidth
 - Unidirectional Utilized Bandwidth
- These network performance information carried in BGP TLV is same as one In IS-IS Extended Reachability TLV [**I.D-ietf-isis-te-metric-extensions-00**]
- The format and semantics of the 'value' fields in these BGP TLVs is same as one defined as sub TLV of IS-IS Extended Reachability TLV.

Update after IETF 87

- Complimentary to [I-D.ietf-idr-ls-distribution]
- Changes compared to (v-01)
 - Remove new metric 'channel throughput' from this draft based on discussion with ISIS-TE-extension draft authors
 - Move new metric 'link utilization' to [**I.D-ietf-isis-te-metric-extensions-01**] and define it as 'unidirectional utilized bandwidth' Sub TLV of IS-IS Extended Reachability TLV
 - Change metric name and add "Min/Max Unidirectional Link Delay " as a new metric to get inline with [I.D-ietf-isis-te-metric-extensions-00] .
 - Add 'unidirectional utilized bandwidth' as seventh metric carried in new BGP TLV.
 - Add ' Anomalous ' bit in the BGP TE performance TLV to indicate whether performance is in steady state.
- Thanks Hannes for arranging a offline discussion after Berlin meeting with ISIS-TE-extension authors on why two additional attributes should be added into IGP draft.
- New coauthors
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Next Step

- Any comments?
- Request WG adoption