IS-IS TE attributes per application
draft-ietf-isis-te-app-02

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OSPFv2 Link Traffic Engineering (TE) Attribute Reuse
draft-ietf-ospf-te-link-attr-reuse-03

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Changes since IETF99

- **Adopted as WG document in August 2017**
- **Standard Applications List enhanced**
- **Relationship between attribute advertisement and application enablement explicitly defined**
- **List of supported link attributes revised**
- **Remote interface address/link id moved to ospf-link-overload draft (OSPF)**

Standard Applications

R-bit: RSVP-TE

S-bit: Segment Routing Traffic Engineering

F-bit: Loop Free Alternate

X-bit: Flex-Algo (draft-hegdeppsenak-isis-sr-flex-algo/ draft-ppsenak-ospf-sr-flex-algo)

Application Enablement

RSVP-TE: the advertisement of application specific link attributes implies that RSVP is enabled on that link.

Today, legacy implementations infer RSVP enablement based on the existence of legacy link attribute advertisements

This maintains that paradigm – but RSVP-TE use is now explicit

(Interoperability issue identified in draft-hegde-isis-advertising-te-protocols Figure 1 is resolved)

Application Enablement (2)

SRTE
> **"advertisement of application specific link attributes does NOT indicate enablement… SRTE is implicitly enabled on all links which are part of the Segment Routing enabled topology"**

LFA
> **"advertisement of application specific link attributes does NOT indicate enablement of LFA on that link. Enablement is controlled by local configuration."**

FLEX-ALGO
> **"advertisement of application specific link attributes does NOT indicate enablement"**

NEW STANDARD APPLICATIONS
> **"MUST define the relationship between application specific link attribute advertisements and enablement for that application."**

Supported Link Attributes

Administrative group (color)
Maximum link bandwidth
Maximum reservable link bandwidth
Unreserved bandwidth
Extended Administrative Group
Unidirectional Link Delay
Min/Max Unidirectional Link Delay
Unidirectional Delay Variation
Unidirectional Link Loss
Unidirectional Residual Bandwidth
Unidirectional Available Bandwidth
Unidirectional Utilized Bandwidth

Supported Link Attributes(2)

Maximum link bandwidth

is an application independent attribute of the link. When advertised using the Application Specific Link Attributes sub-TLV multiple values for the same link MUST NOT be advertised.

Maximum reservable link bandwidth

There are per application use cases. Tracking bandwidth usage/application can be onerous and may not often be used - but we should not prohibit it.

Unreserved bandwidth

an attribute specific to RSVP. When advertised using the Application Specific Link Attributes sub-TLV bits other than the RSVP-TE(R-bit) MUST NOT be set in the Application Bit Mask.

Next Steps

Continue discussion
Early allocation of code points