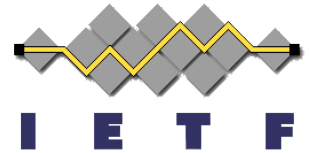


IS-IS Reverse Metric

IETF 99, Prague

Naiming Shen, Cisco
Shane Amante, Apple
Mikael Abrahamsson, T-Systems

July 17, 2017

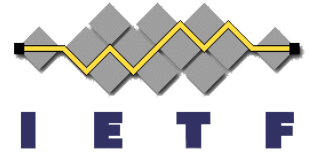


Draft History



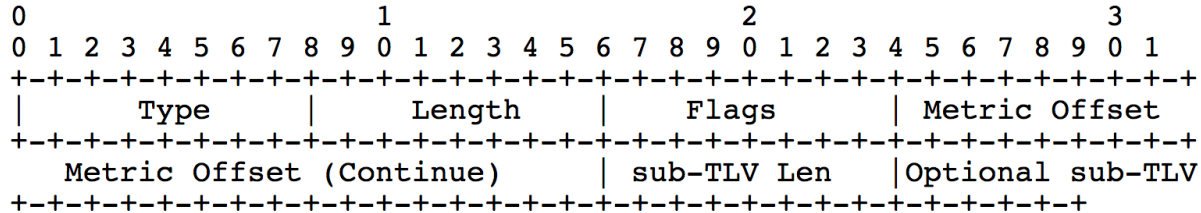
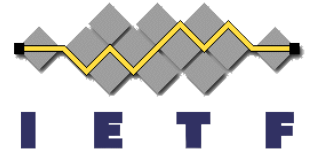
- draft-ietf-isis-reverse-metric-06
- Version 06 updated recently based on comments from IS-IS working group list. Added IGP/LDP Synchronization use case; Remove the 'S' bit from flag; Added a 'Link-overload' bit in 'link-attribute' sub-TLV; etc.
- First presented in IETF 79 in Beijing

Reverse Metric Use Cases

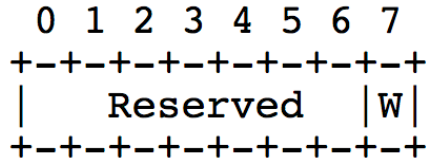


- Node and Link Isolation, to a single LAN for maintenance (this started this draft)
- Distributed Forwarding Plane, IS-IS converges faster than BGP downloading after slot reset
- Spine-Leaf extension for selective ECMP routing gateway
- A simpler and an alternative solution to RFC6138 for IGP/LDP synchronization
- Give IS-IS node the new ability to have influence on the inbound direction over a link

TLV in Hello PDU

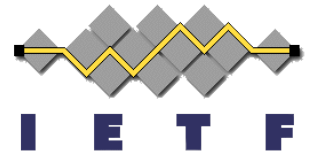


Reverse Metric TLV



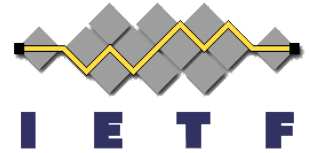
- Flags: W: 'Entire LAN Operation';
- Metric: 3 octets
- TE sub-TLV, when sub-TLV Len is non-zero
- *Link-Overload bit, in 'link-attribute' sub-TLV under TLV 22 of LSP PDU (e.g. for controller)*

Extension Operations



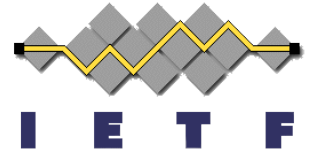
- Applies to all Multi-Topologies
- Local configuration can overwrite the I1H 'Reverse Metric' signal from neighbors
- Works on LAN and point-to-point
- Support TE metric in sub-TLV for CSPF calculation
- On LAN, DIS node act upon the signal and set the pseudo-node LSP metric towards the node with the metric advertised in 'Reverse Metric'
- On p2p, the neighbor add 'Reverse Metric' on top of the configured IS-IS metric on the interface

In Relation to OSPF drafts



- RFC 8042, OSPF Two-Part Metric, is very similar in mechanism to this draft IS-IS reverse-metric on the LAN side
- draft-ietf-ospf-link-overload, it uses RI LSA with Link-Overload sub-TLV, while the IS-IS reverse-metric draft uses IS-IS hello PDU to install the maximum metric at the inbound, it now can also include a 'link-overload' bit in 'link-attribute' sub-TLV to have a more explicit signal for applications such as forwarding path controller

Next Steps



- This draft after the recent update is quite stable
- Authors requesting IS-IS working group's LC
- Welcome more review and comments