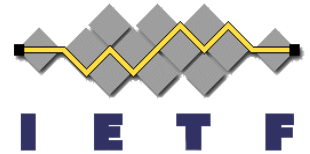
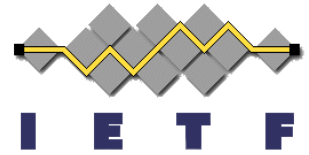


ISIS CRH Extensions

IETF 105

Ron Bonica, Juniper Networks
Rajesh Shetty, Juniper Networks
Parag Kaneria, Juniper Networks
Shraddha Hegde, Juniper Networks





Agenda

- Background
- ISIS Extensions
- Next Steps

Background

- SRv6+ path consists of topological SIDs and per-segment as well as per-path service instructions.
- The topological SIDs are advertised by IGP and used by ingress node to construct a path through the network
- There are two kinds of topological SIDs
 - Loose SID
 - Strict SID

Advertising CRH Capability

- The Router capability TLV 242 contains the CRH capability sub-TLV

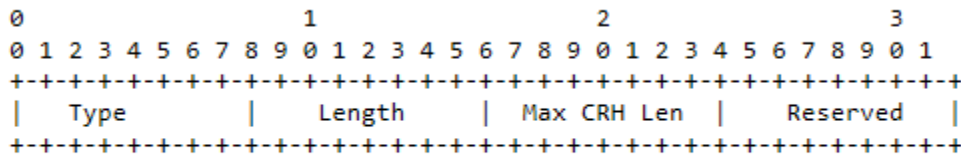


Figure 1: CRH Sub-TLV

- o Type: 8 bits. CRH (value TBD by IANA)
- o Length: 8 bits. Length of TLV data excluding the TLV header. MUST be equal to 2 plus the length of sub-sub-TLVs (if any).
- o Max CRH Len: 8 bits. Maximum CRH length supported by the advertising node, measured in 8-octet units, not including the first 8 octets. See Note 1.
- o Reserved: 8 bits. SHOULD be set to zero by sender. MUST be ignored by receiver.

Loosely Routed SID

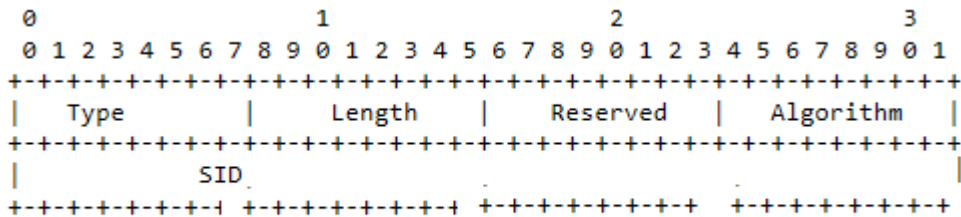


Figure 2: Loosely Routed SID sub-TLV

o TLV-236 (IPv6 IP Reachability) [[RFC5308](#)].

o TLV-237 (Multitopology IPv6 IP Reachability) [[RFC5120](#)].

- o Type: 8 bits. Loosely Routed SID sub-TLV (Value TBD by IANA)
- o Length: 8 bits. Length of TLV data excluding the TLV header, measured in bytes.
- o Reserved: SHOULD be set to zero by the sender. MUST be ignored by the receiver.
- o Algorithm : 8 bits. The router may use various algorithms when calculating reachability to other nodes. Algorithms identifiers are defined in Section 3.2 of [[I-D.ietf-isis-segment-routing-extensions](#)].
- o SID - Variable length. Segment Identifier.

Strictly Routed SID

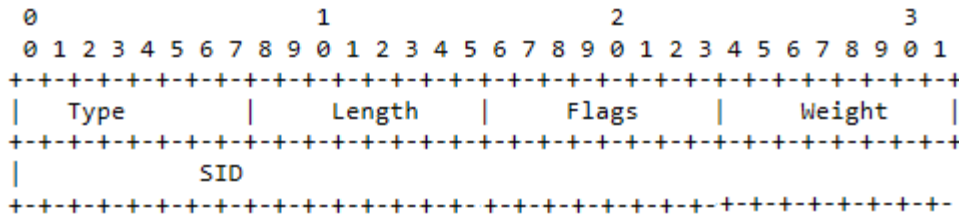
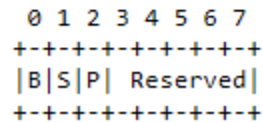
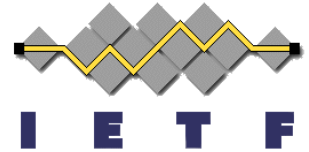


Figure 3: Strictly Routed SID Sub-TLV

- o Type: 8 bits. Strictly Routed SID sub-TLV (Value TBD by IANA)
- o Length: 8 bits. Length of TLV data excluding the TLV header, measured in bytes.
- o Flags: 8 bits. See below.
- o Weight: 8 bits. The value represents the SID weight for the purpose of load balancing. The use of the weight is defined in [\[RFC8402\]](#).
- o SID - Variable length. Segment Identifier.



- o TLV-22 (Extended IS reachability) [[RFC5305](#)]
- o TLV-222 (Multitopology IS) [[RFC5120](#)]
- o TLV-23 (IS Neighbor Attribute) [[RFC5311](#)]
- o TLV-223 (Multitopology IS Neighbor Attribute) [[RFC5311](#)]
- o TLV-141 (inter-AS reachability information) [[RFC5316](#)]



LAN Strictly Routed SID

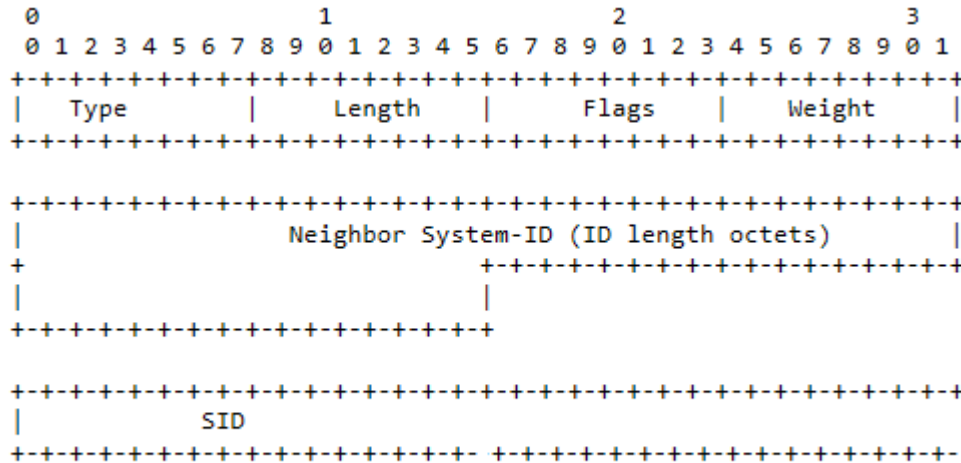


Figure 5: LAN Strictly Routed SID Sub-TLV

- o Type: 8 bits. Strictly Routed SID sub-TLV (Value TBD by IANA)
- o Length: 8 bits. Length of TLV data excluding the TLV header, measured in bytes.
- o Flags: 8 bits. See below.
- o Weight: 8 bits. The value represents the SID weight for the purpose of load balancing. The use of the weight is defined in [\[RFC8402\]](#).
- o Neighbor System-ID: 6 bytes. IS-IS System-ID of length "ID Length" as defined in [\[ISO10589\]](#).

- o TLV-22 (Extended IS reachability) [\[RFC5305\]](#)
- o TLV-222 (Multitopology IS) [\[RFC5120\]](#)
- o TLV-23 (IS Neighbor Attribute) [\[RFC5311\]](#)
- o TLV-223 (Multitopology IS Neighbor Attribute) [\[RFC5311\]](#)
- o TLV-141 (inter-AS reachability information) [\[RFC5316\]](#)

- o SID - Variable length. Segment Identifier.

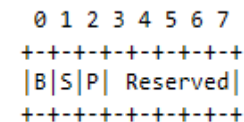
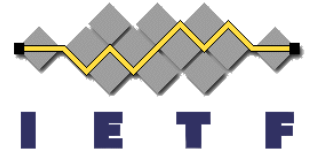
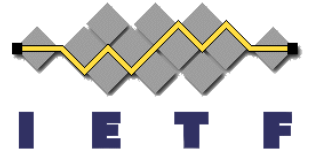


Figure 6: Strictly Routed SID Sub-TLV Flags



Summary & Next steps

- Request review and comments



Thank you