

# IGP Extensions for Path MTU

[draft-hu-lsr-igp-path-mtu-00](#)

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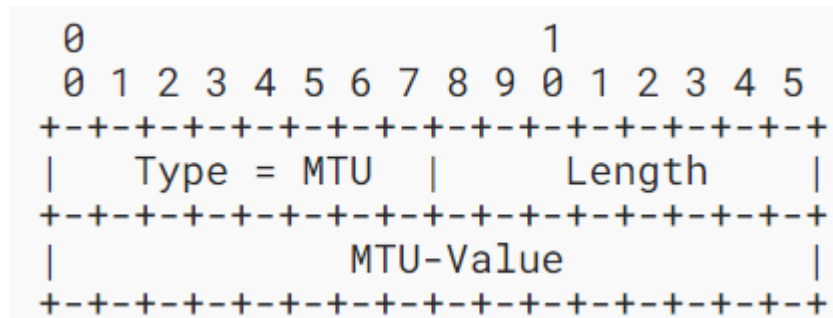
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# Motivation & Problem Statement

- Segment routing (SR) leverages the source routing mechanism and pushes MPLS labels or SRv6 SIDs in the packet header.
- The current mechanisms in SR do not have the specific path construction signaling so that the **Path MTU** (Maximum Transmission Unit) information cannot be obtained in advance. Therefore it cannot be ensured that the packet size is less than the Path MTU.
- This draft provides the necessary IS-IS and OSPF extensions for advertising the **Link MTU**, which is the minimum link MTU of all the links in a path between a source node and a destination node.
- Particularly, this draft defines new **Link MTU sub-TLVs** for both the IS-IS and OSPF protocols. With the IGP flooding process in the distributed scenario or the BGP transmission to the controller, the ingress node or the controller is able to compute the path MTU for the SR policy.

# IS-IS Extension Proposal

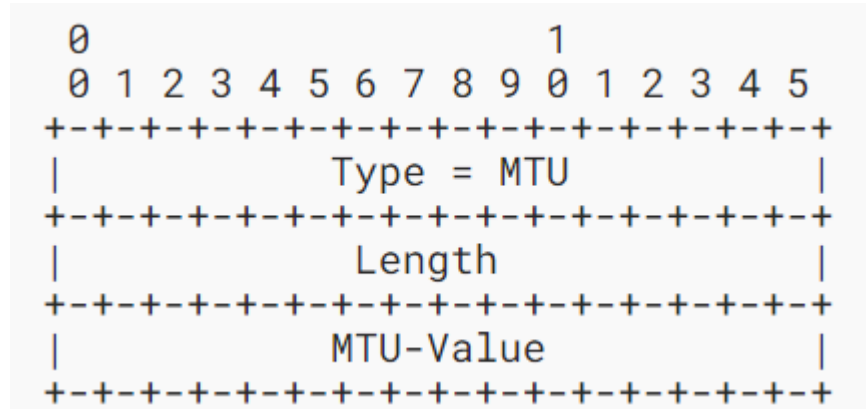
- Define the link MTU sub-TLV to carry the MTU of the interface associated with the link.
  - The Link MTU is advertised as an optional sub-TLV of TLVs 22, 23, 25, 141, 222, 223 in the Router Information LSP.



- Type: MTU, 1 byte, TBD.
- Length: # of octets in the value field, 1 byte.
- Value: The value is the MTU size of a link, 2 bytes.

# OSPF Extension Proposal

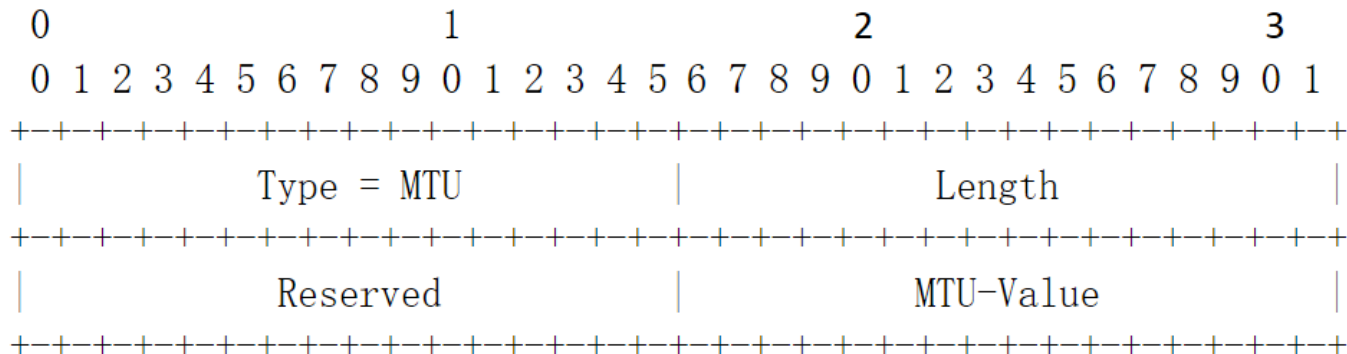
- Define the link MTU sub-TLV for OSPFv2 and OSPFv3 to carry the MTU of the interface associated with the link.
  - OSPFv2: The Link MTU is advertised as an optional sub-TLV of the **OSPFv2 Extended Link TLV** in the **OSPFv2 Extended Link Opaque LSA** as defined in [RFC7684].
  - OSPFv3: The Link MTU is advertised as an optional sub-TLV of the **Router-Link TLV** in the **OSPFv3 E-Router-LSA** as defined in [RFC8362].



- Type: MTU, 2 bytes, TBD (Type values for OSPFv2 and OSPFv3 can be different).
- Length: # of octets in the value field, 2 bytes.
- Value: The value is the MTU size of a link, 2 bytes.

# Feedback

- The title “IGP Extensions for Link MTU” may be more appropriate, and the name of the draft is modified accordingly to “draft-hu-lsr-igp-link-mtu”.
- The OSPF TLV (Link MTU sub-TLV for the OSPF extension) needs to be bounded to 4 bytes, and thus a two-byte reserved field is padded before the MTU-value field. As the following format.



# Further Plan

- Willing to get comments from mailing list

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