BGP-LS Extensions for Advertising Path MTU

draft-zhu-idr-bgp-ls-path-mtu-00

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BackGround

Currently, MTU is not included in SegmentRouting

● SR may contain more MPLS labels or SRv6 SIDs in the forwarding packet header, and the packet size is larger than the traditional packets.

● Without the MTU information, path-calculation (Especially for Controller) cannot assure the packet size is less than the path MTU.

● This may lead to ineffective packet fragmentation.

● RFC 6326 (Transparent Interconnection of Lots of Links (TRILL) Use of IS-IS)   has defined a Sub-TLV to advertise the MTU of a Link
    ● Type : 28 (MTU)
    ● Length: 3
    ● Reserve Byte
    ● MTU   : MTU Value

● Solution: This new draft extends a new TLV to advertise the MTU(Defined in RFC6323) through BGP-LS

Solution

BGP_LS Extensions for Path MTU(ISIS)

[RFC7752] defines the TLVs that map link-state information to BGP-LS NLRI and the BGP-LS attribute. Therefore, according to this document, a new sub TLV is added to the Link Attribute TLV.

The format of the sub-TLV is as shown below.
- x   TYPE   - TBD
- x   LENGTH - Total length of the value field, it should be 3
- X Reserve Byte
- x   VALUE - 2-byte MTU value of the link

```
                    No. of Octets
          +-----------------+
          |   MTU value     |    2
          +-----------------+
```
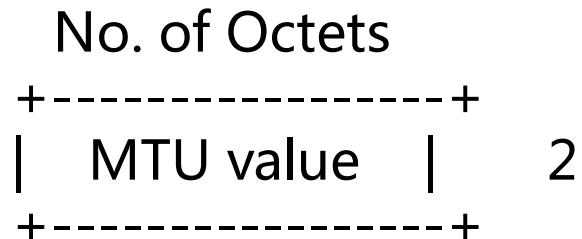
Whenever there is a change in MTU value represented by Link Attribute TLV, BGP-LS should re-originate the respective TLV with the new MTU value.
Then, the controller can calculate the Path MTU.

NextStep

1. Any comments welcome.

2. Co-authors welcome

3. The Extension of OSPF

Any Questions?