

# BGP-LS Extensions for SR Network Resource Partition SIDs

draft-chen-idr-bgp-ls-transport-slice-05

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# Introduction

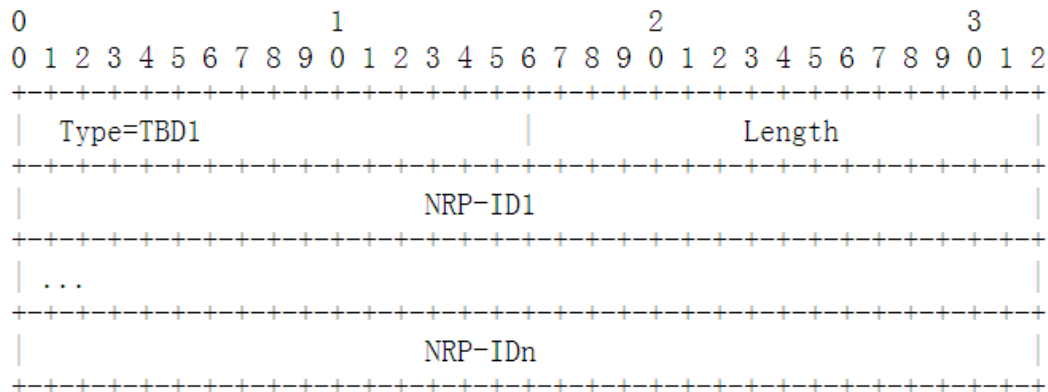
- Framework and definition of IETF network slice is provided in draft-ietf-teas-ietf-network-slice. It also defines the term Network Resource Partition (NRP), which is a collection of resources identified in the underlay network.
- The solution to realize network slicing in IP/MPLS networks is described in draft-ietf-teas-ns-ip-mpls.
- The IGP extension for SR Network Resource Partition SIDs is defined in draft-bestbar-lsr-spring-nrp.
- This document specifies extensions to the BGP-LS in order to advertise the information of Network Resource Partition SIDs.

# Extensions

- SR-MPLS
  - Advertising NRP-ID TLV to indicate the list of NRPs that a node belongs to
    - Defines the NRP-ID TLV associated with the node NLRI .
  - Advertising NRP-ID list Sub-TLV to indicate the list of NRPs that a link belongs to
    - Defines the NRP-ID list TLV associated with the link NLRI .
  - Advertising NRP-ID for L2 Bundle Member:
    - Defines a new L2 Bundle Member NRP-ID sub-TLV of TLV-25 to advertise NRP-ID for L2 Bundle Member associated with a parent L3 adjacency .
  - Advertising NRP SIDs
    - Advertising NRP Adjacency-SID
    - Advertising NRP LAN-Adj-SID TLV
    - Advertising NRP Prefix-SID
- SRv6
  - Advertising Locators and SRv6 End SIDs that are associated with NRP-IDs
  - Advertising NRP SRv6 End.X SIDs
  - Advertising NRP SRv6 LAN End.X SIDs

# Advertising NRP-ID TLV

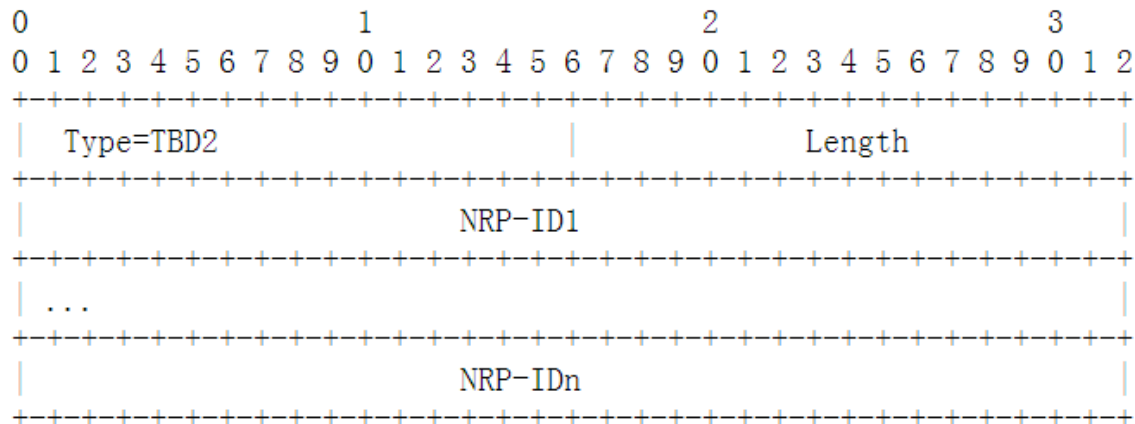
- The NRP-ID TLV associated with the node NLRI .
  - Advertising NRP-ID TLV to indicate the list of NRPs that a node belongs to



- NRP-ID: Network Resource Partition ID is used to indicate the resources on specific node(s) that will be traversed by a slice-aggregate.

# Advertising NRP-ID list Sub-TLV

- The NRP-ID list TLV associated with the link NLRI .
  - Advertising NRP-ID TLV to indicate the list of NRPs that a link belongs to



- NRP-ID: Network Resource Partition ID is used to indication the resources on specific link(s) that will be traversed by a slice-aggregate.

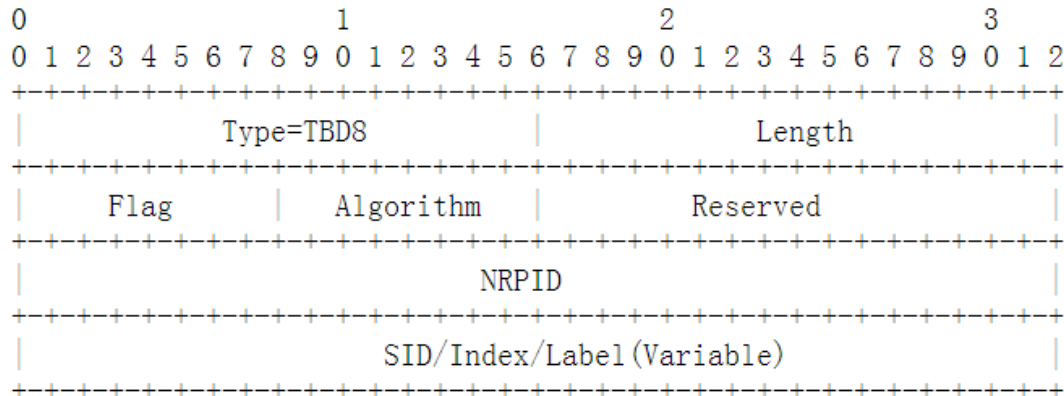
# Advertising NRP-ID for L2 Bundle Member

- A new L2 Bundle Member NRP-ID of TLV-25 (L2 Bundle Member Attributes) [RFC8668].
  - Advertising NRP-ID for L2 Bundle Member associated with a parent L3 adjacency which is Point-to-Point.

# Advertising NRP SIDs

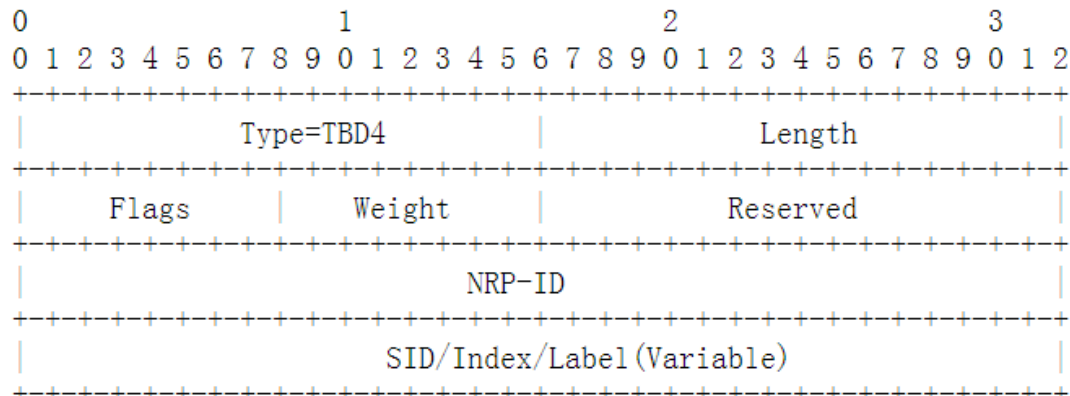
- Advertising NRP Prefix-SID

- A new NRP Prefix-SID TLV is added to the BGP-LS Attribute associated with the Prefix NLRI



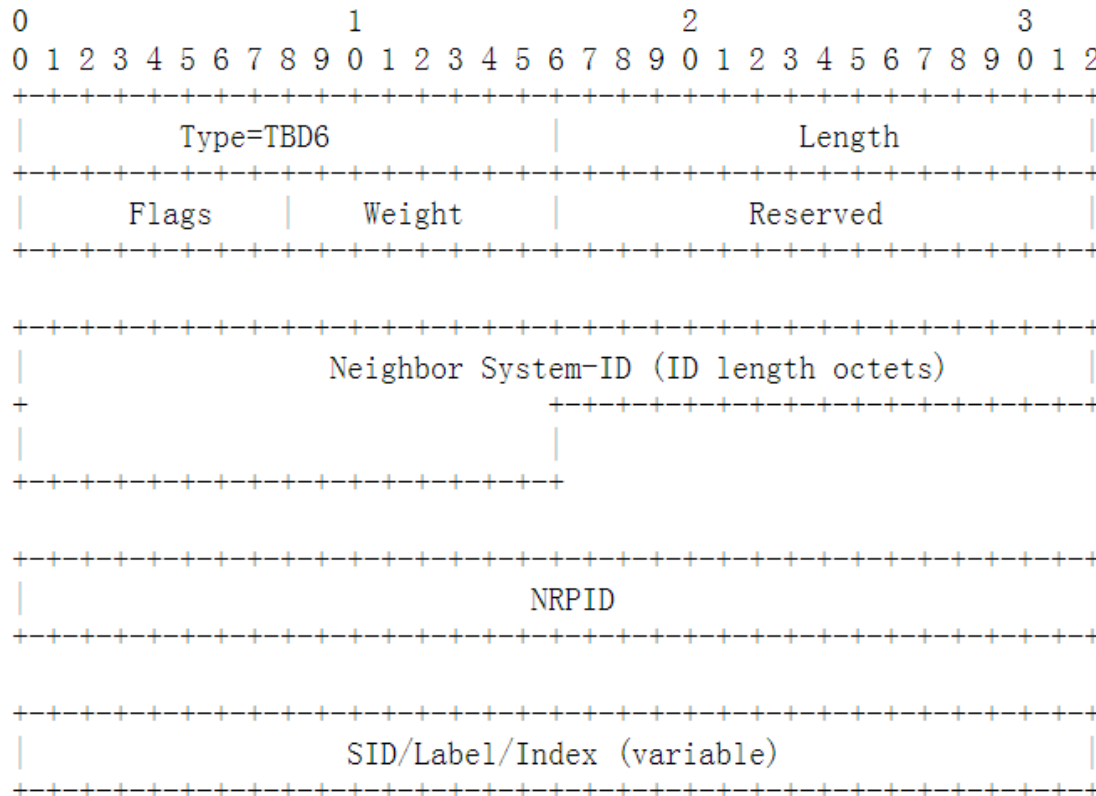
- Advertising NRP Adjacency-SID

- A new NRP Adjacency-SID TLV is added to the BGP-LS Attribute associated with Link NLRI



# Advertising NRP SIDs (cont.)

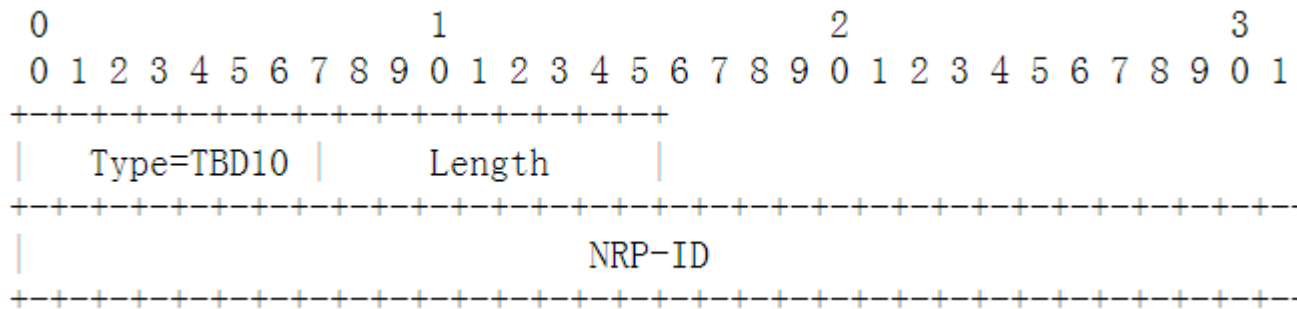
- Advertising NRP LAN-Adj-SID
  - A new NRP LAN-Adj-SID TLV is added to the BGP-LS Attribute associated with Link NLRI





# Advertising NRP SRv6 SIDs

- Advertising SRv6 NRP SID sub-TLV under the SRv6 Locator TLV
- The SRv6 NRP SID sub-TLV



- NRPID: Identifies the NRPID information corresponding to an Locator.
- The new NRPID SID sub-TLV is an optional Sub-TLV of:
  - SRv6 End.X SID TLV (Section 4.1 of draft-ietf-idr-bgpls-srv6-ext.
  - SRv6 LAN End.X SID TLV (Section 4.2 of draft-ietf-idr-bgpls-srv6-ext.

# Next Step

- Welcome comments.
- Welcome to fulfill this work together

Thank you!