SR Policies Extensions for NRP in BGP-LS

draft-chen-idr-bgp-ls-sr-policy-nrp-02

Presenter:  Ran Chen (ZTE)
Co-author:  Ran Chen (ZTE)
            Detao Zhao (ZTE)
            Liyan Gong (China Mobile)
            Yongqing Zhu (China Telecom)

IDR WG interim Meeting, April 2023
Introduction

• Segment Routing Policy [RFC9256] is an ordered list of segments (i.e. instructions) that represent a source-routed policy.

• [draft-ietf-teas-ietf-network-slices] introduces the concept Network Resource Partition (NRP), which is a subset of the resources and associated policies in the underlay network.

• [draft-dong-idr-sr-policy-nrp] defines the extensions to BGP SR policy to specify the NRP which the SR Policy candidate path is associated with.

• [draft-ietf-idr-bgp-ls-sr-policy] describes a mechanism to distribute SR policy information to external components using BGP-LS.

• This document defines a new TLV which enable the headed to report the configuration and the states the NRP which the SR Policy candidate path is associated with.
BGP-LS SR Policy Extensions for NRP

• A new SR Policy state TLV called “NRP TLV” to carry the NRP which the SR Policy candidate path is associated with.

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|       Type       |     Length     |    Flags    | RESERVED     |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                              NRP ID (4 octets)                           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

• Type: TBD1.
• Length: 6 octets.
• Flags: 1 octet of flags. None are defined at this stage. SHOULD be set to zero on transmission and MUST be ignored on receipt.
• RESERVED: 1 octet of reserved bits. SHOULD be set to zero on transmission and MUST be ignored on receipt.
• NRP: 4 octet global identifier of Network Resource Partition.
Procedures

• An SR Policy candidate path (CP) may be instantiated with a specific NRP on the headend node via a local configuration, PCEP, or BGP SR Policy signaling.

• Then the state and attributes of the NRP the candidate path of SR policy is associated with is encoded in the BGP-LS Attribute field as SR Policy State TLVs.
  – The SR policy State TLVs defined in [draft-ietf-idr-bgp-ls-sr-policy] are not changed to report the SR Policy Candidate Path's state and attributes
  – The NRP TLV is included to report the state of NRP.
Next Step

• Comments welcome.

Thank you!