

BGP SR Policy Extensions for Network Resource Partition (NRP)

draft-dong-idr-sr-policy-nrp-01

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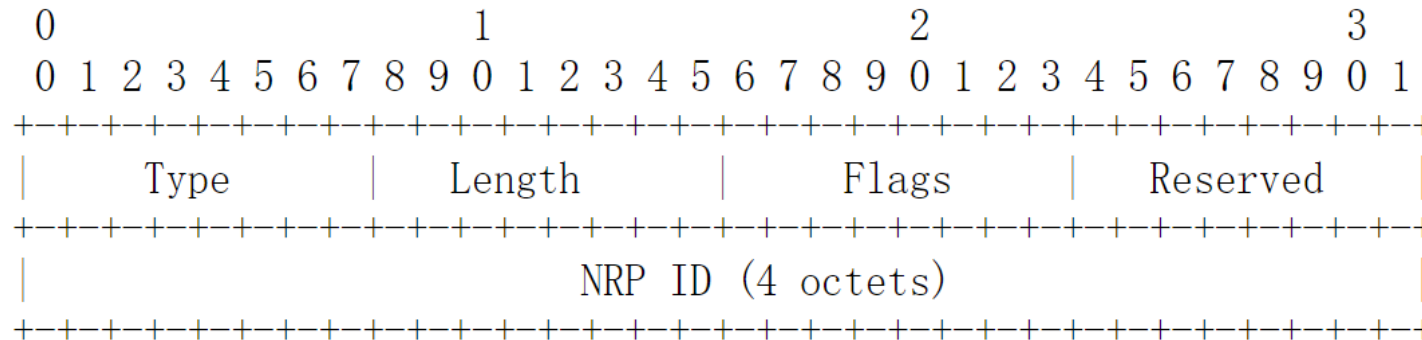
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Background

- SR Policy is a set of candidate paths, each consisting of one or more segment lists and the associated information
 - Packet steered to an SR policy is augmented with a Segment List in the packet header
- Network Resource Partition (NRP) is a collection of network resources allocated in the network
 - IETF network slice services can be mapped to an NRP to obtain the required service performance
- An SR Policy may be associated with a particular NRP in the network
 - The association between the SR policy and NRP needs to be specified
 - Packet steered to the SR policy can be augmented with both the segment list and the NRP identifier
- This document defines extensions to BGP SR policy to indicate the NRP which the SR Policy is associated with

BGP SR Policy Extensions for NRP

- A new sub-TLV called “NRP sub-TLV” is defined in the BGP Tunnel Encapsulation Attribute
 - Can be carried in the BGP Tunnel Encapsulation Attribute with the tunnel type set to SR Policy



- Type: 123 (assigned by IANA)
- Length: 6
- Flags: None is defined. SHOULD be set to 0 on transmission and MUST be ignored on receipt
- Reserved: SHOULD be set to zero on transmission and MUST be ignored on receipt
- NRP-ID: A 32-bit domain significant identifier which is used to identify a NRP. Value 0 and 0xFFFFFFFF are reserved.

Updated BGP SR Policy Encoding

- The encoding of BGP SR Policy with NRP sub-TLV is as below:

SR Policy SAFI NLRI: <Distinguisher, Policy-Color, Endpoint>

Attributes:

Tunnel Encaps Attribute

Tunnel Type: SR Policy

Binding SID

Preference

Priority

Policy Name

Explicit NULL Label Policy (ENLP)

NRP

Segment List

Weight

Segment

Segment

...

...

Procedures

- The originating node of SR Policy SHOULD include the NRP sub-TLV in the BGP Tunnel Encapsulation Attribute of the BGP SR Policy to specify the associated NRP
 - The setting of other fields and attributes in BGP SR Policy are not changed
- When the SR Policy ingress node receives an SR Policy candidate path which is acceptable and usable, it SHOULD encapsulate the NRP ID into the header of packets which are steered to the SR Policy
 - The NRP encapsulation for SRv6 Policy is based on draft-ietf-6man-enhanced-vpn-vtn-id
 - The NRP encapsulation for SR-MPLS Policy is based on draft-li-mpls-enhanced-vpn-vtn-id

Operational Considerations

- Although the proposed mechanism allows different candidate paths in one SR policy to be associated with different NRPs, in normal scenarios it is considered that the association between an SR Policy and NRP is consistent
- Thus in normal cases all the candidate paths of the same SR policy SHOULD be associated with the same NRP

Next Steps

- The mechanism is straightforward and the document is short
- Solicit comments and feedbacks
- WG adoption?

Thank You