

BGP Extensions of SR Policy for Headend Behavior

draft-lin-idr-sr-policy-headend-behavior-03

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Motivation

RFC 8986 defines four SRv6 Policy Headend behaviors:

H.Encaps	SR Headend with Encapsulation in an SR Policy
H.Encaps.Red	H.Encaps with Reduced Encapsulation
H.Encaps.L2	H.Encaps Applied to Received L2 Frames
H.Encaps.L2.Red	H.Encaps.Red Applied to Received L2 Frames

draft-filsfils-spring-srv6-net-pgm-insertion-09: H.Insert & H.Insert.Red

Using the BGP protocol is a very popular way to distribute SR policies from a controller to a headend [I-D.ietf-idr-sr-policy-safi]. The SRv6 Binding SID sub-TLV can be attached to advertise the BSID and its Behavior (End.B6.Encaps & End.B6.Encaps.Red), which determines the headend behavior for packets steered by that BSID.

However, a headend can steer a packet flow into an SR Policy in many other ways: per-destination steering, per-flow steering, policy-based steering, etc. The network operator has to use additional tools, like NETCONF, to signal the headend behavior.

This document defines extensions for BGP SR Policy to specify the headend behavior.

Extensions for BGP SR Policy

Two new Sub-TLVs are defined:

- Headend Behavior Sub-TLV (for L3 traffic)
- L2 Headend Behavior Sub-TLV (for L2 traffic)

Optional, and MUST NOT appear more than once in the SR Policy encoding.

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

```
Attributes:
```

```
Tunnel Encaps Attribute (23)
```

```
Tunnel Type: SR Policy
```

```
Binding SID
```

```
SRv6 Binding SID
```

```
Preference
```

```
Priority
```

```
Policy Name
```

```
Policy Candidate Path Name
```

```
Explicit NULL Label Policy (ENLP)
```

```
Headend Behavior
```

```
L2 Headend Behavior
```

```
Segment List
```

```
Weight
```

```
Segment
```

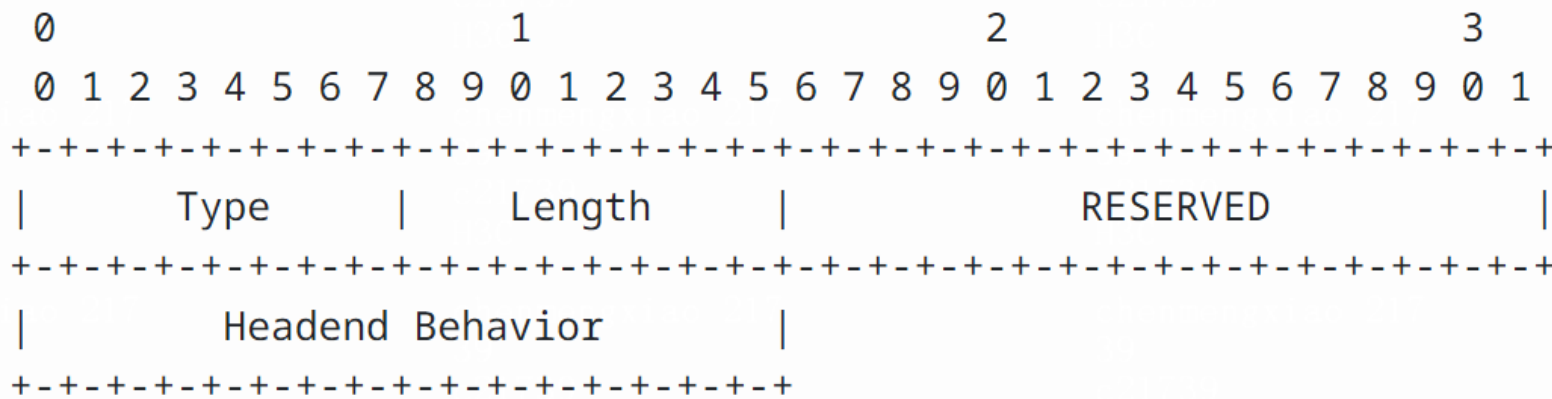
```
Segment
```

```
...
```

```
...
```

Headend Behavior Sub-TLV

The Headend Behavior sub-TLV encodes the default headend behavior for L3 traffic. In the case of BSID steering, the behavior defined by the BSID overrides the default headend behavior.

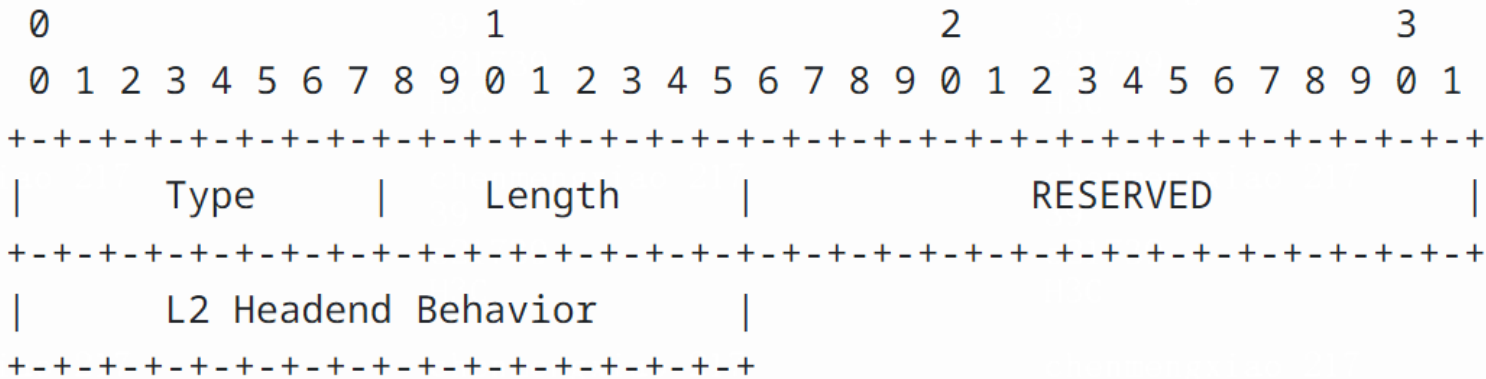


The following values of Headend Behavior field are defined:

- H.Encaps. A headend behavior defined in [RFC8986].
- H.Encaps.Red. A headend behavior defined in [RFC8986].
- H.Insert. A headend behavior defined in [I-D.filsfils-spring-srv6-net-pgm-insertion].
- H.Insert.Red. A headend behavior defined in [I-D.filsfils-spring-srv6-net-pgm-insertion].

L2 Headend Behavior Sub-TLV

The Headend Behavior sub-TLV encodes the default headend behavior for L2 traffic.



The following values of L2 Headend Behavior field are defined:

- H.Encaps.L2. A headend behavior defined in [RFC8986].
- H.Encaps.L2.Red. A headend behavior defined in [RFC8986].

Next Steps

- Add corresponding extensions for BGP-LS.
- Any questions or comments are Welcomed.

Thanks