BGP Flowspec Redirects to SR Policy

draft-li-idr-flowspec-sr-policy-01

Presenter : Zhenqiang Li (China Mobile)
Song Liu (China Mobile)

IETF-123, July 2025

Why another document on the same topic?

- BGP Flowspec Redirects to SR Policy is being defined by ietf-idr-ts-flowspec-srv6-policy
  - *It is informational. No new standard action is introduced in it.*
  - *It illustrates a potential use case using the existing filtering rules and actions defined for BGP Flowspec version 1.*
- This document extends BGP Flowspec version 2 by introducing two new standard traffic filtering actions.

Traffic filtering actions introduced

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      SubTLV Type (2 octets)   |       Length (2 octets)       |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|            Value (variable)   |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Figure 1: Format of Action-SubTLV in the BGP Community Container Attribute

- Two new subTLV types are requested to be assigned by IANA: one for Redirect to SR Policy Action, the other for SRv6 SID Action.

Redirect to SR Policy Action

```
+--------------------------------+
|         Flags (1 octet)        |
+--------------------------------+
|    Policy Color (4 octets)     |
+--------------------------------+
|    Endpoint (4 or 16 octets)   |
+--------------------------------+
```

Figure 2: Format of Value Field in Redirect to SR policy Action

```
 0 1 2 3 4 5 6 7
+-+-+-+-+-+-+-+-+
| Reserved  |S|F|
+-+-+-+-+-+-+-+-+
```

Figure 3: Format of Flags Field

- As defined in RFC9256 (Segment Routing Policy Architecture), the endpoint of a SR Policy can be an IPv4 address or an IPv6 address. We use a flag field to indicate this.

SRv6 SID Action

```
+------------------------------------+
|         Action (1 octet)           |
+------------------------------------+
|        SRv6 SID (16 octets)        |
+------------------------------------+
```

Figure 4: Format of Value Field in SRv6 SID Action

- Only one action-encapsulate-is defined in this document.
- When the last SID of the SR policy path is not USD-flavored, the headend node shall encapsulate an additional SRv6 SID to instruct the endpoint to decapsulate the outer packet header.
- This SID is used in conjunction with Redirect to SR Policy Action when necessary.

Next Steps

- Further reviews and comments are welcome and appreciated.

Thanks!