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## **Flowspec Indirection-id Redirect for SRv6**

### **Abstract**

This document defines extensions to "FlowSpec Redirect to indirection-id Extended Community" for SRv6. This extended community can trigger advanced redirection capabilities to flowspec clients for SRv6. When activated, this flowspec extended community is used by a flowspec client to retrieve the corresponding next-hop and encoding information within a localised indirection-id mapping table.

The functionality detailed in this document allows a network controller to decouple the BGP flowspec redirection instruction from the operation of the available paths.

### **Requirements Language**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [2].

### **Status of This Memo**

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### 1. Introduction

"FlowSpec Redirect to indirection-id Extended Community" for IPv4 is defined in [ietf-idr-flowspec-path-redirect](#) [1]. This draft specifies extensions to this community for SRv6.

### 2. Redirect to indirection-id Community

This document defines a new sub-type value for SRv6 in "FlowSpec Redirect to indirection-id Extended Community". The format of this extended community with the new sub-type value is show below:

```
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
+-+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
| Type          |Sub-Type (TBD) | Flags(1 octet)|   ID-Type    |
+-+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|               |Generalized indirection_id (16 octets)|               |
~                                                       ~
+-+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
```

Where

Type: 1 octet, defined in [ietf-idr-flowspec-path-redirect](#) [1].

Sub-Type: 1 octet, its value (TBD) will be assigned by IANA.

Flags: Same as that defined in [ietf-idr-flowspec-path-redirect](#) [1].

ID-Type: 1 octet value. This draft defines following Context Types:

- \*0 - Localised ID (The flowspec client uses the received indirection-id to lookup forwarding information within the localised indirection-id table. The allocation and programming of the localised indirection-id table is outside scope of the document)
- \*1 - Node ID with SID/index in MPLS-based Segment Routing (This means the indirection-id is mapped to an MPLS label using the index as a global offset in the SID/label space)
- \*2 - Node ID with SID/label in MPLS-based Segment Routing (This means the indirection-id is mapped to an MPLS label using the indirection-id as global label)
- \*3 - Binding Segment ID with SID/index in MPLS-based Segment Routing (This means the indirection-id is mapped to an MPLS binding label using the indirection-id as index for global offset in the SID/label space).
- \*4 - Binding Segment ID with SID/label in MPLS-based Segment Routing (This means indirection-id is mapped to an MPLS binding label using the indirection-id as global label).
- \*5 - Tunnel ID (Tunnel ID is within a single administrative domain a globally unique tunnel identifier. The allocation and programming of the Tunnel ID within the localised indirection-id table is outside scope of the document)
- \*6 - Node ID with SID/index in SRv6 (This means the indirection-id is mapped to an SRv6 SID using the indirection-id as global SRv6 SID or index)
- \*7 - Binding Segment ID with SID/index in SRv6 (This means the indirection-id is mapped to an SRv6 binding SID using the indirection-id as index for global offset in the SID space).
- \*8 - Binding Segment ID with SID/index in SRv6 (This means indirection-id is mapped to an SRv6 binding SID using the indirection-id as global SRv6 SID).

Generalized indirection\_id: 128-bit identifier used as indirection\_id

### **3. Security Considerations**

A system using "Redirect to indirection-id" extended community can cause during the redirect mitigation of a DDoS attack overflow of traffic received by the mitigation infrastructure.

### **4. Acknowledgements**

This document received valuable comments and input from IDR working group including Adam Simpson, Mustapha Aissaoui, Jan Mertens, Robert Raszuk, Jeff Haas, Susan Hares and Lucy Yong.

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## 6. IANA Considerations

This document requests a new sub-type value under "FlowSpec Redirect to indirection-id Extended Community Sub-Type" registry.

Value	Code	Reference
0x01	Flowspec Redirect to 128-bit Path-id for SRv6	[RFC-To-Be]

## 7. References

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