Label Information for BGP FlowSpec

draft-liang-idr-bgp-flowspec-label-00
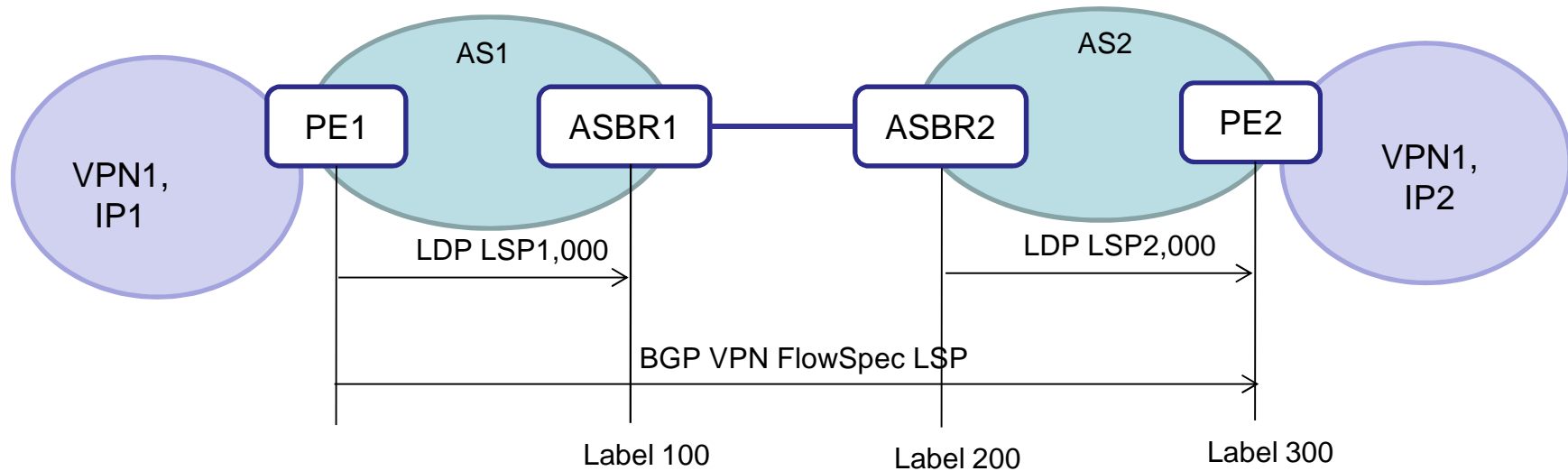
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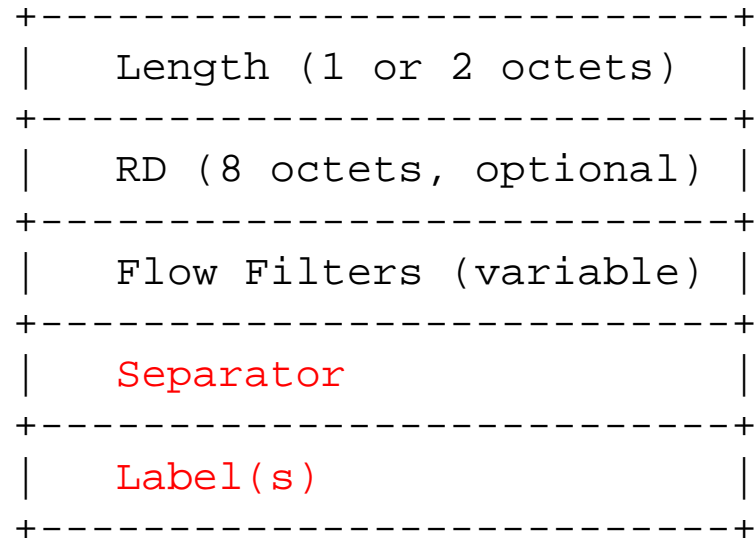
IETF93 Prague

Motivation

- Improve routing efficiency

  ❑ FlowSpec rule mapped to a label

- Require traffic statistics per FlowSpec rule

  ❑ Traffic statistics granularity should be improved based on FlowSpec rule rather than the destination prefix
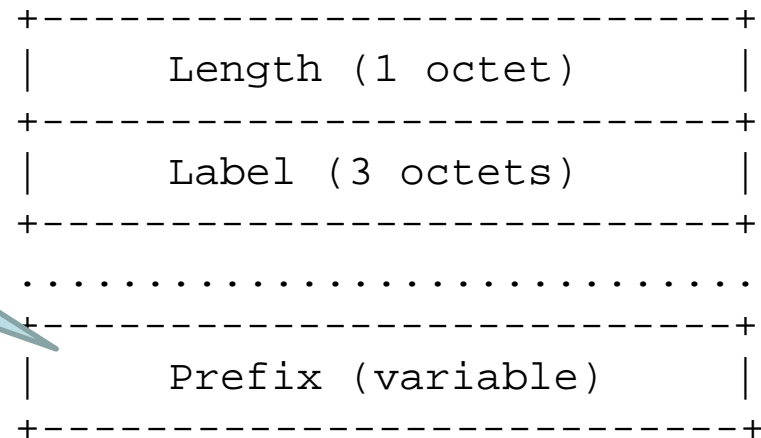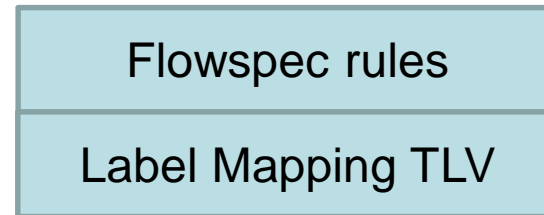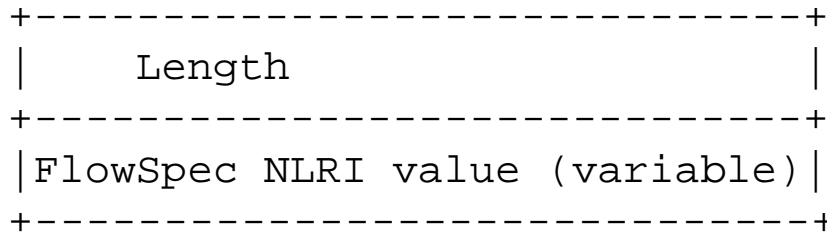
Scenario

- FlowSpec Rule 1 (injected in PE2)
  - Filters: Destination IP prefix:IP2/32; Source IP prefix:IP1/32
  - Actions: traffic-marking: 1 (DSCP value)
- Forwarding Process on PE1 when receiving traffic from IP1 to IP2
  - PE1: Push 1,000 and 100
  - ASBR1: Pop 1,000, and then swap 100 to 200
  - ASBR2: swap 200 to 300, and then push 2,000
  - PE2: Pop all labels

Solution 1: New Flow-spec label(s) route

```
+----------------------------+
|   Length (1 or 2 octets)   |
+----------------------------+
|   RD (8 octets, optional)  |
+----------------------------+
|   Flow Filters (variable)  |
+----------------------------+
|   Separator                |
+----------------------------+
|   Label(s)                 |
+----------------------------+
```

- **Separator**: indicates the separation between the flow filters field and lable(s) field. This value should not be used by flow filters.

- **Label(s):** This field carries zero or more labels (that corresponds to the stack of labels [RFC3032]).

Solution 2: Using RFC3107 to carry FlowSpec label(s)

```
+-----------------------------+
|        Length               |
+-----------------------------+
|FlowSpec NLRI value (variable)|
+-----------------------------+
```

Flowspec rules

Label Mapping TLV

Using dummy prefix 0.0.0.0/32

```
+-----------------------------+
|      Length (1 octet)       |
+-----------------------------+
|      Label (3 octets)       |
+-----------------------------+
.................................
+-----------------------------+
|      Prefix (variable)      |
+-----------------------------+
```

Label Mapping TLV

Next Step

- Solicit comments and suggestions on the mailing list

Thank You!