Populate to FIB Action for FlowSpec
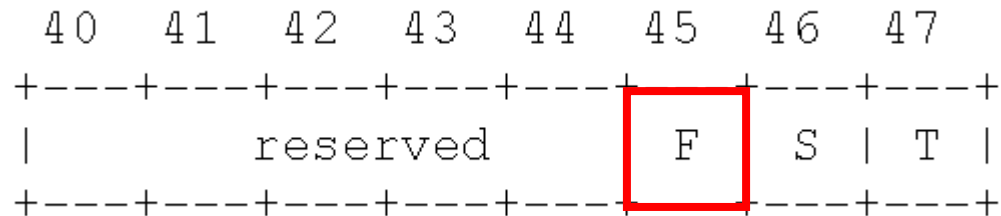
draft-li-idr-flowspec-populate-to-fib-00.txt

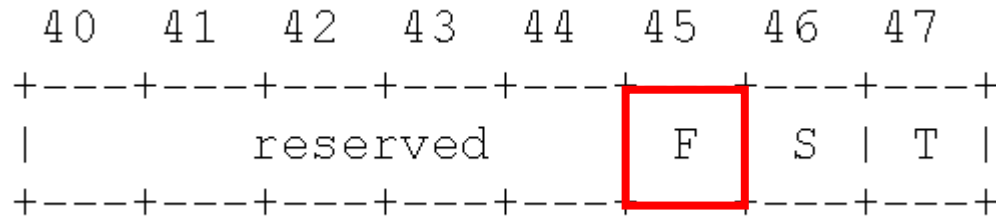Zhenqiang Li

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Main content

- A bit, F bit, is defined in traffic action extended community, which can be used by FlowSpec to indicate the associated specifications be installed directly in FIB (Forwarding Information Base)

```
 40   41   42   43   44   45   46   47
+---+---+---+---+---+---+---+---+
|           reserved          | F | S | T |
+---+---+---+---+---+---+---+---+
```

Why?

- In routers, traffic flow specifications distributed by BGP FlowSpec are stored in distinct set of RIBs (Routing Information Base) according to their (AFI, SAFI) pairs.

- These RIBs are then populated to the dedicated hardware usually shared with ACLs (Access Control List).

- The dedicated hardware is much more expensive and space limited when compared with the FIB (Forwarding Information Base).

- However, the number of both ACL rules and FlowSpec specifications is large, especially when   FlowSpec is used for dynamic traffic flow steering.

- So, to save the limited and expensive space of the dedicated hardware, it is better to populate some FlowSpec specifications directly to FIB if possible.

- The destination prefix based FlowSpec specifications are suitable to be directly populated to FIB.

- **We have no method to do this at present.**

How?

```
  40   41   42   43   44   45   46   47
 +---+---+---+---+---+---+---+---+
 |        reserved        | F | S | T |
 +---+---+---+---+---+---+---+---+
```

- A new bit F is defined in traffic action extended community to indicate the associated FlowSpec specifications are suitable to be populated to FIB.

- If F bit is set and the associated FlowSpec specifications can not be populated to FIB, the associated FlowSpec specifications MUST be ignored.

- The new bit F is solicited to be assigned by IANA.

Next steps

- Read the draft

- Comment in the mail list

- Modify the draft according to the comments to make it stable to be accepted by the working group

Thanks