Traffic Steering using BGP Flowspec with SRv6 Policy

draft-jiang-idr-ts-flowspec-srv6-policy-00

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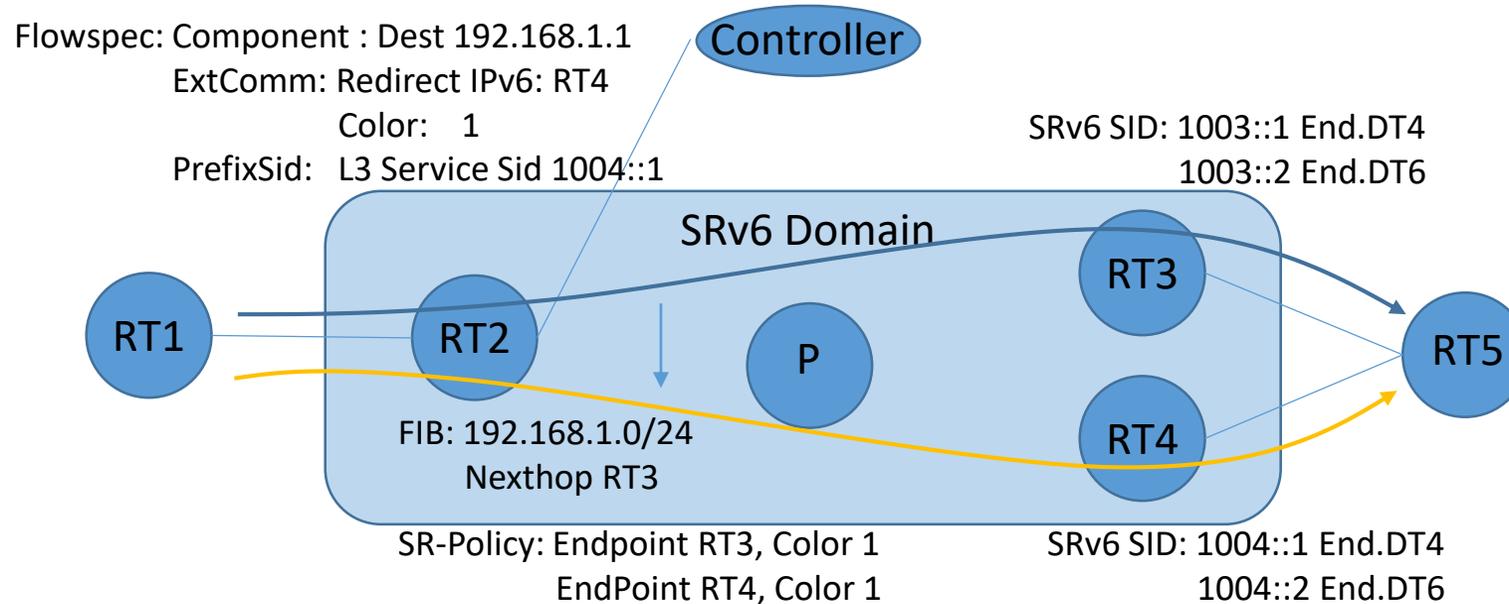
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Motivation

- Use Flowspec for traffic steering now is used more and more
- This draft purpose to introduces the usage of BGP FlowSpec to steer packets into an SRv6 Policy

Use Flowspec to steering traffic

Flowspec: Component : Dest 192.168.1.1
ExtComm: Redirect IPv6: RT4
Color: 1
PrefixSid: L3 Service Sid 1004::1

Controller

SRv6 SID: 1003::1 End.DT4
1003::2 End.DT6

SRv6 Domain

RT1   RT2   P   RT3   RT5   RT4

FIB: 192.168.1.0/24
Nexthop RT3

SR-Policy: Endpoint RT3, Color 1
EndPoint RT4, Color 1

SRv6 SID: 1004::1 End.DT4
1004::2 End.DT6

- The origin traffic from RT1 to RT5, through the RT3 to access
- Now we want to adjust some traffic such as 192.168.1.1 through RT4 to access RT5
- So the controller may advertise a flowspec route to RT2, notify it to do the traffic steering

Reuse Flowspec Redirect ExtComm and SR-Policy's Color Extcomm

- draft-ietf-bess-srv6-services
  - when the received route is colored with an extended color community 'C' and Next-Hop 'N', the route will associated with the SR-Policy (C, N)

- For Flowspec
  - we use the redirect extended community as the nexthop, and also reuse the color extended community
  - Then the flowspec will associate with the SR-Policy (C,N)

Reuse BGP Prefix-SID attribute with SRv6 Services TLVs

- draft-ietf-bess-srv6-services
  - defines the layer 3 service sid
- Flowspec may also reuse it
  - This sid specify the behavior when the traffic arrived at the Egress Router
  - The sid's behavior can be End.DT4, End.DT6, End.DX4, End.DX6 and etc

Reuse Flowspec components

- The attributes can be used for IPv4 or IPv6 Flowspec's all components

Next steps

- Questions and Comments?

Thank you !