

Traffic Steering using BGP Flowspec with SRv6 Policy

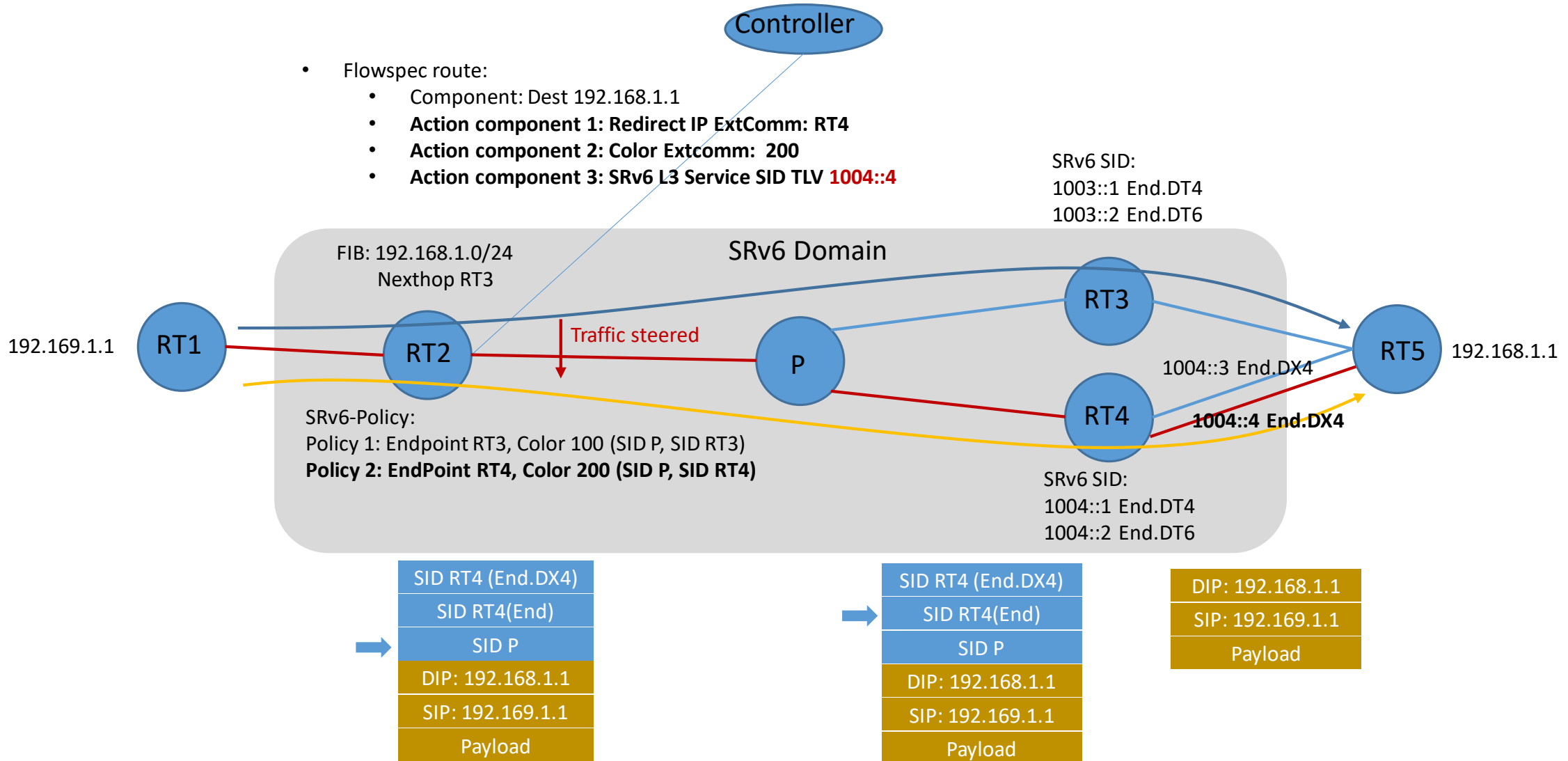
draft-jiang-idr-ts-flowspec-srv6-policy-01

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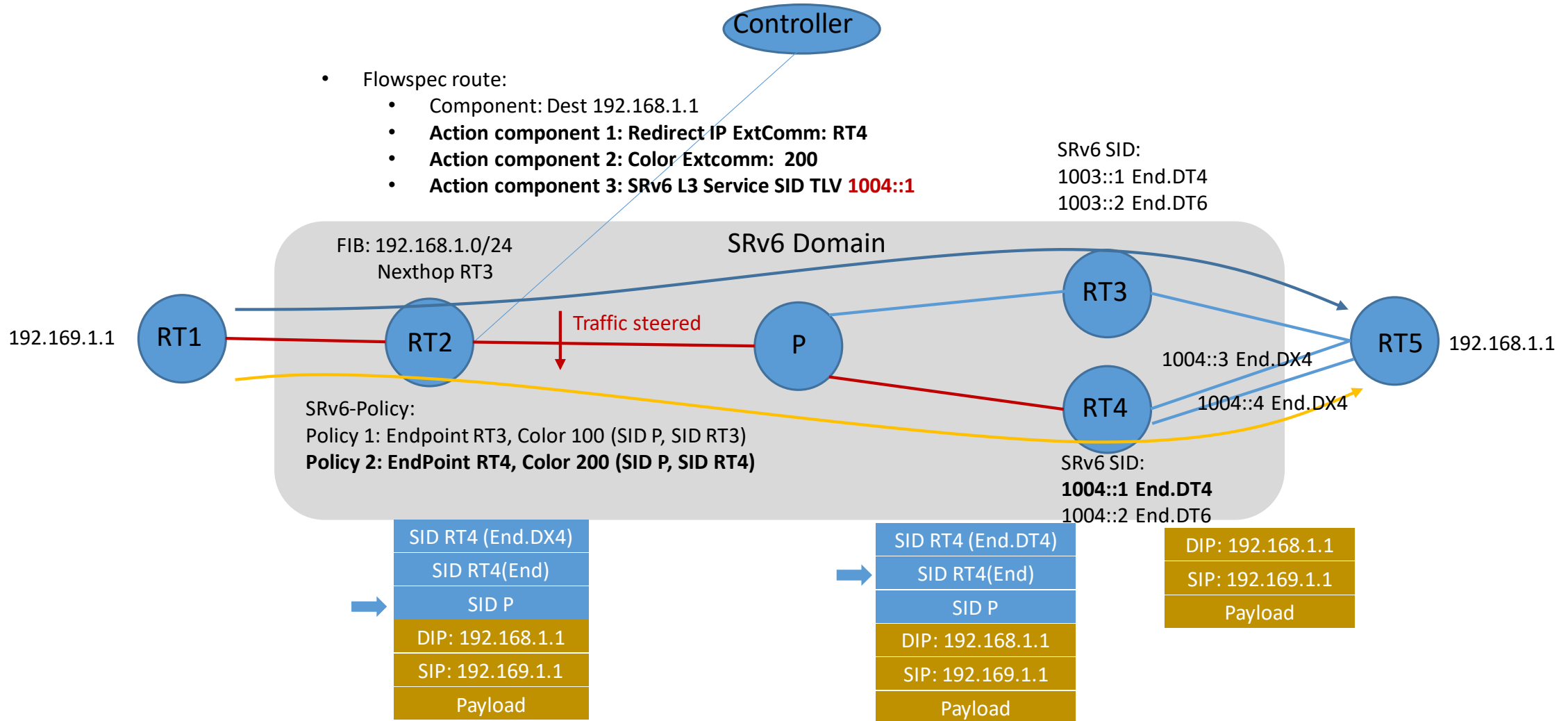
Application scenario 1



Flowspec route: Redirect IP Extended community + Color Extended community + service SID (mandatory)

Application scenario 2

- Flowspec route:
 - Component: Dest 192.168.1.1
 - Action component 1: Redirect IP ExtComm: RT4**
 - Action component 2: Color Extcomm: 200**
 - Action component 3: SRv6 L3 Service SID TLV 1004::1**



Flowspec route: Redirect IP Extended community + Color Extended community + service SID (conditionally optional)

- If END SID of RT4 is USD-flavored, then service SID is not needed
- If END SID of RT4 is PSP- or USP-flavored, then service SID(e.g., END.DT4) is needed

Recap

- Step 1: controller/BGP flowspec speaker sends a Flowspec route to an SRv6 headend
 - Flowspec route with: BGP Redirect IP Extcomm + BGP Color Extcomm
 - Flowspec route with (optional): SRv6 L3 service SID TLVs (carried in BGP Prefix-SID attribute)
- Step 2: SRv6 headend associates the Flowspec route with an SRv6 policy
 - The flowspec route, colored with an Extended color community 'C' and Redirect IP Extcomm 'N' (as the next hop), will be associated with the SRv6-Policy (C, N) (draft-ietf-bess-srv6-services)
- Step 3 (optional): Srv6 headend adds the Service SID to the header when forwarding packets
 - The SRv6 L3 service SID TLV is added into the packet header at the headend
- Step 4(optional): SRv6 endpoint takes further actions using the Service SID
 - SID behaviors defined by the SRv6 service TLVs: e.g., End.DT4, End.DT6, End.DX4, End.DX6 and etc
- No IANA allocation action needed

Change history

- Add specification of Handling of multiple communities (thanks to Jeff's comments)
 - We only support the usage of one Redirect IP extended community + one Color extended community, in combination with at most one service SID
- Add specification of Cross-domain traffic steering scenario (thanks to Kaliraj's comments)
 - "For the cases of intra-AS and inter-AS traffic steering using this method, the usages of Flowspec Color Extended Community with BGP prefix SID are the same for both scenarios. The difference lie between the local SRv6 policy configurations. For the inter-domain case, the operator can configure an inter-domain SRv6 policy/path at the Headend device. For the intra-domain case, the operator can configure an intra-domain SRv6 policy/path at the Headend device."

Thank you !