

SR Policy Group

draft-jiang-spring-sr-policy-group-use-cases

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Requirements and proposal

- Application Scenarios:
 - ✓ One enterprise customer often have several different kinds of services with different QoS requirements
 - ✓ Those services should be forwarded through different SR policies, which can be treated as an SR policy group for the customer
- SR policy group: An “Special SR policy” contains a group of constituent SR Policies.
 - ✓ represents a composite candidate path defined in draft “ietf-spring-segment-routing-policy ”
 - ✓ Is identified by <color, endpoint> on the headend, same with an SR Policy
- Criteria
 - ✓ The endpoints of the constituent SR policies and its SR policy group MUST be identical.
 - ✓ The colors of each of the constituent SR policies and its SR policy group MUST be different.
- Benefits
 - ✓ Configure policy based on customer with services of different SLA
 - ✓ Improve the efficiency of SR network operation especially for the enterprise customers

How to use SR policy group?

- Steering traffic into an SR Policy group

- ✓ Per-flow Steering

- Step1: Steering flow to SR Policy Group**

- Matches the destination IP/IPv6 address in a packet with an SR policy group.
 - Searches for an SR policy group with color and endpoint address matching the color extended community attribute and next hop in a BGP route, and recurses the BGP route to the SR policy group.

- Step2: Select the constituent SR policy of the group**

- The Ingress node matches flow characteristics (upon any field such as Ethernet destination/source/VLAN/TOS or IP destination/source/DSCP or transport ports or application attribute etc.) , colors them, and selects the matching SR policy in the SR policy group according to the color.

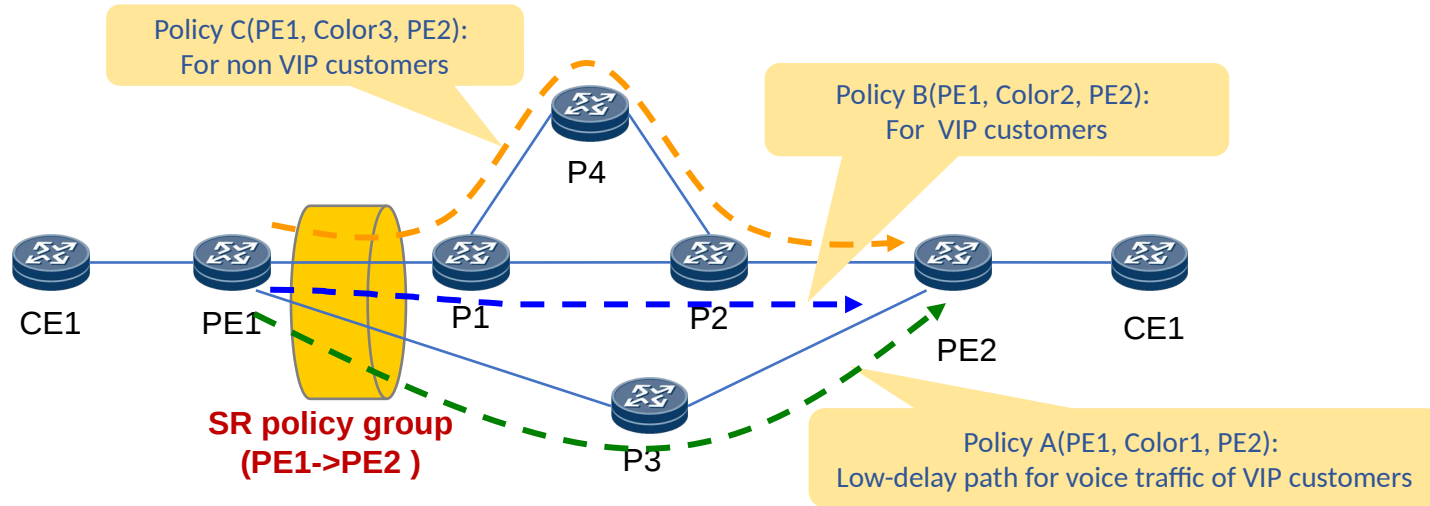
- ✓ Policy-based Steering

- Step1:** Incoming packets match a routing policy that directs them on an SR policy group.

- Step2:** Similar to per-flow steering

- SR policy group can be configured manually, distributed by centralized controller, or automatically created through ODN.

Use case: L3VPN over TE Application Scenarios



➤ DSCP mapping to color:

- DSCP1 -> Color1
- DSCP2 -> Color2
- Other DSCPs -> Color3

➤ SR policy group (PE1->PE2):

- Constituent SR policy A (Color1, PE2)
- Constituent SR policy B (Color2, PE2)
- Constituent SR policy C (Color3, PE2)

- Identify the customer's service through DSCP.
- Services with different forwarding class carry different DSCP values in the packet.
- When PE1 receives traffic, it first matches to the SR policy group according to the next hop and color of the route, and then finds the constituent SR policy in the corresponding group according to the DSCP carried in the IP/IPv6 packet header.
- The voice traffic of VIP customers is forwarded according to the path of low-delay Constituent SR policy A, other traffic of VIP customers is forwarded according to the path of Constituent SR policy B, and all businesses of non VIP customers are carried by Constituent SR policy C.

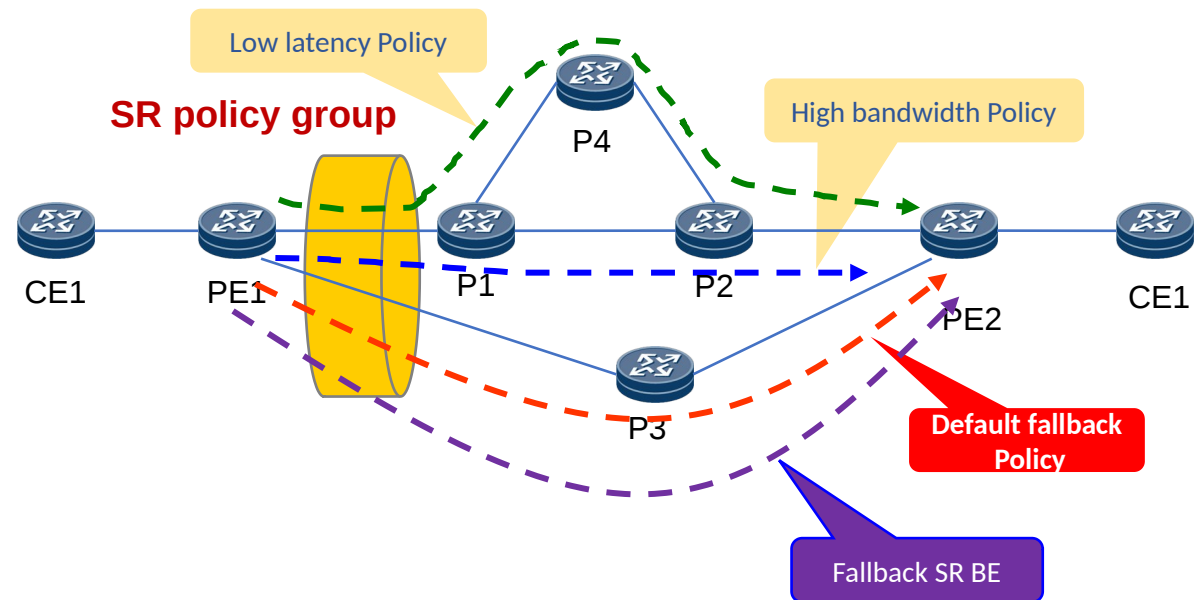
Use fallback path for SR Policy Group

SR Policy group fallback path can be

- ✓ Default fallback policy in SR policy group
- ✓ An SR BE path in SR policy group

When traffic is matched to an SR policy group based on the next hop and routing color or routing policy, but the following occurs, the traffic can be forwarded through the backup path

- ✓ There is no constituent SR policy in the SR policy group that matches the color corresponding to the flow characteristics, the flow can be forwarded through the fallback path.
- ✓ There is no other available constituent SR policy in the SR policy group except fallback path, the traffic can be forwarded through the fallback path.



Next Steps

- Any questions or comments are Welcomed
- Seeking for feedback