

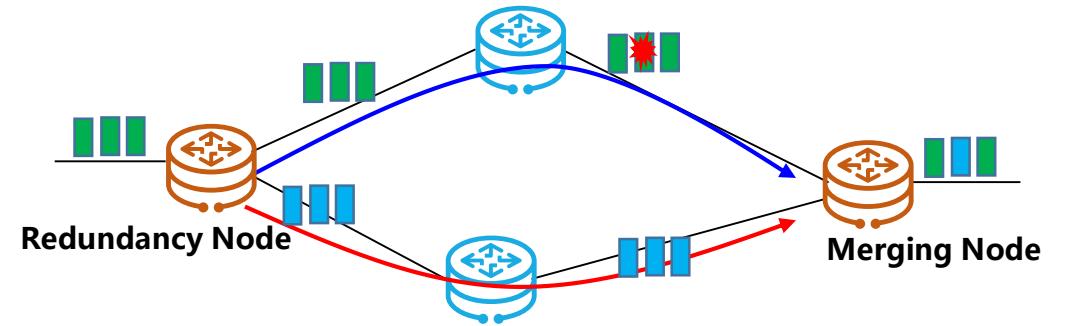
Redundancy Policy for Redundancy Protection

draft-geng-spring-redundancy-policy-04

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Background



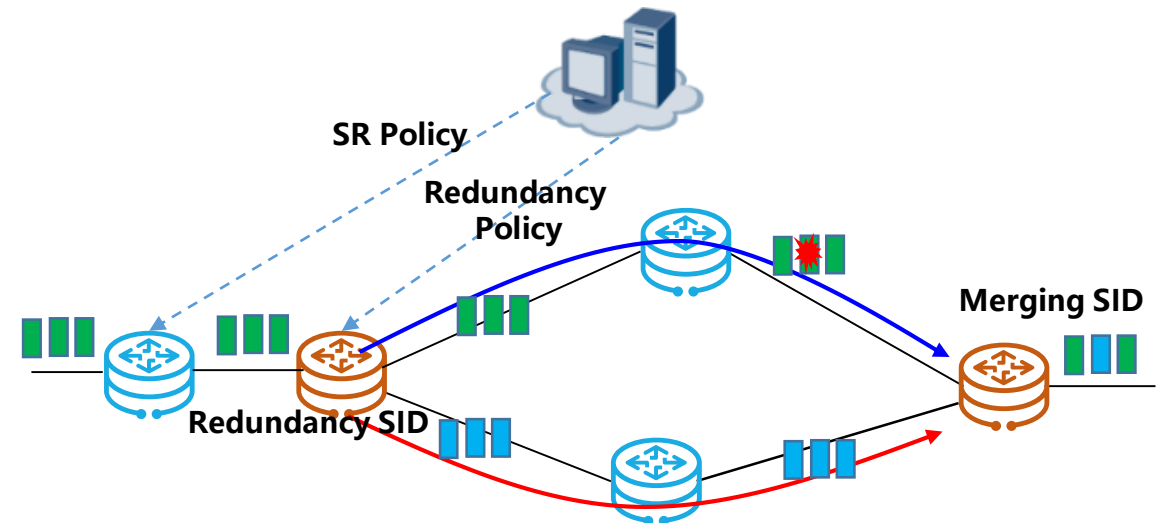
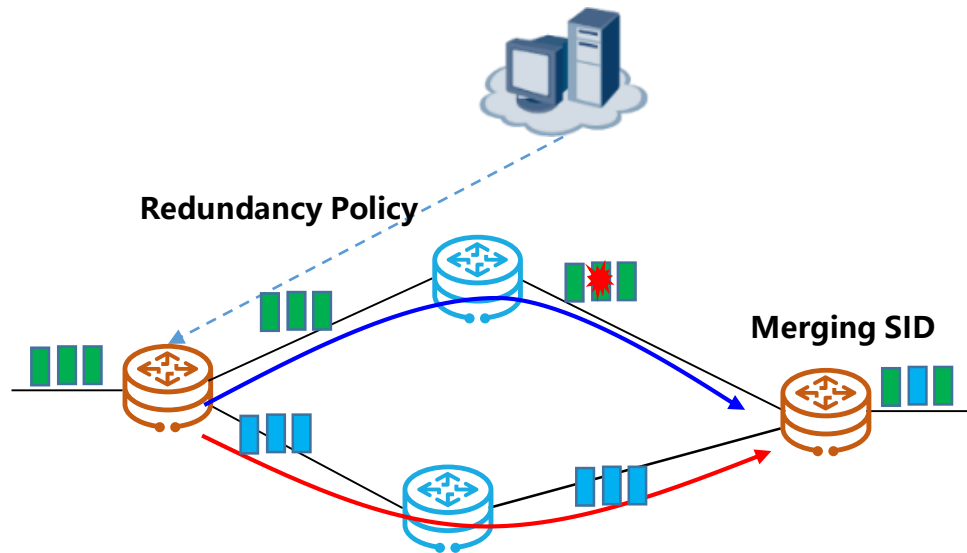
Redundancy protection is a generalized protection mechanism by

- replicating the service packets on redundancy node
- transmitting copies of flow packets over multiple different and disjoint paths
- eliminating the redundant packets at merging node

- *draft-ietf-spring-redundancy-protection-01* introduces **Redundancy SID (R SID)** and **Merging SID (M SID)** to execute replication and elimination behavior
- *This I-D* introduces **Redundancy Policy** to instruct multiple redundant forwarding paths

What is Redundancy Policy?

- is a **variant of SR Policy** with minimum changes
- Works in **two scenarios**, to instruct the replication of service packets and assign more than one redundancy forwarding paths
- **applies to both SR-MPLS and SRv6**



Structure and behavior of Redundancy Policy

- Information model structure

Redundancy policy POL1 <R Node= R, Color = 1, M Node = M>

Candidate-path CP1 <protocol-origin = 20, originator = 100:1.1.1.1, discriminator = 1>

Flag Redundancy

Preference 200

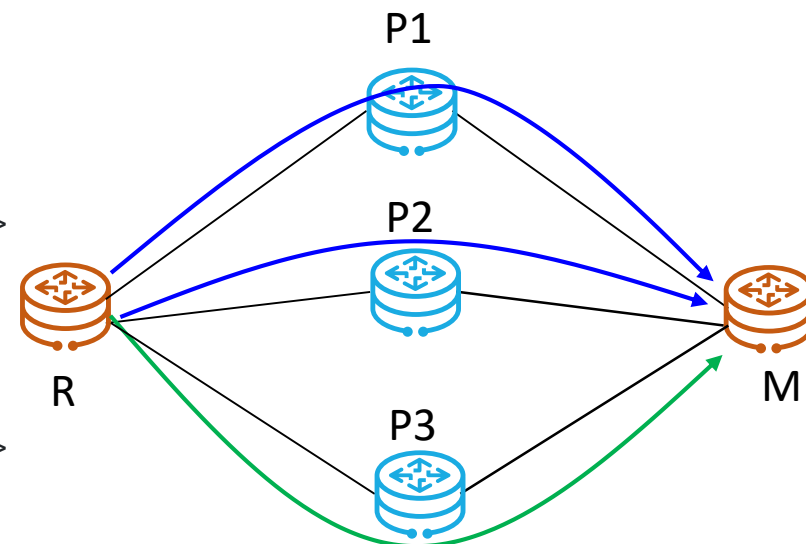
SID-List1 <R, P1, M>

SID-List2 <R, P2, M>

Candidate-path CP2 <protocol-origin = 20, originator = 100:2.2.2.2, discriminator = 2>

Preference 100

Weight W3, SID-List3 <R, P3, M>



- Flag is an optional attribute of a CP, 8-bit bitmap
- Redundancy Flag indicates the type of CP for redundancy forwarding
- When the valid CP is with a redundancy flag, all the SID-Lists are used for redundancy forwarding, weight of SID-List is not applicable
- When CP with redundancy flag fails, new best CP is computed

Bitmap	Flag	Description
0	R	Redundancy paths
1-7	U	Reserved

BSID and Redundancy Policy

- Redundancy policy can be **optionally** associated with a Binding Segment
- Redundancy SID is the BSID of redundancy policy to trigger the instantiation of redundancy policy in the forwarding plane

Redundancy Protection Protocol Extensions

- Data Plane:
 - **Redundancy SID (R SID), Merging SID (M SID):** draft-ietf-spring-redundancy-protection
- Control Plane:
 - **Redundancy Policy:** draft-geng-spring-redundancy-policy-03
 - **IGP advertisement of R SID and M SID:** IANA allocation
 - **BGP for Redundancy Policy:** draft-yang-idr-bgp-redundancy-policy-00
 - **PCEP for Redundancy Policy:** draft-yang-pce-pcep-redundancy-policy-00

Next step

1. Discussion on mailing list to refine the solution and keep align with SR Policy if necessary
2. Further discussion of alternative solutions, multiple candidate paths vs multiple Segment-Lists?

As always, comments and suggestions are greatly welcome!
Thank you for listening!