

Circuit-style Segment Routing Policies

<https://datatracker.ietf.org/doc/html/draft-schmutzer-pce-cs-sr-policy>

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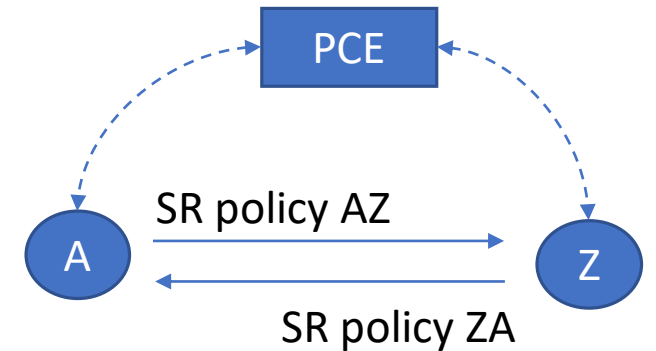
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Motivation

- Allow a single network to carry both
 - L2/IP/VPN connection-less services
 - Connection-oriented p2p transport services (aka private lines)
- Address the following requirements
 - Persistent traffic engineered paths
 - Strict bandwidth commitment
 - End2end path protection (incl. <50msec) and restoration
 - Path OAM

Circuit-style SR Policy Characteristics

- Bandwidth requested and reserved
- Bi-directional, co-routed paths by associating the SR policy from A to Z and Z to A
- Segment lists have strict hops of unprotected adj-SIDs
- No path reoptimization unless manually requested
- Multiple candidate paths for path protection and restoration
- STAMP loopback mode liveness and performance measurement



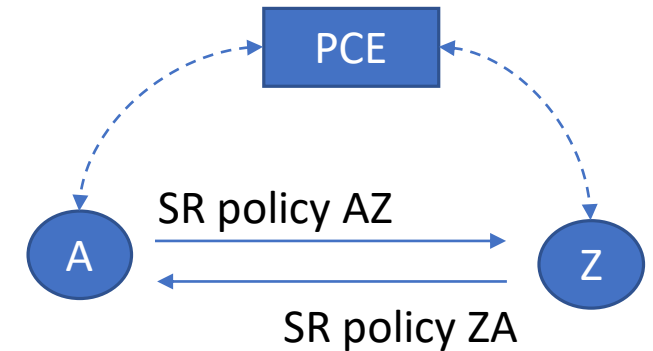
Circuit-style SR Policy Creation

- Network Topology

- Unprotected adj-SIDs allocated persistently
 - IGP and BGP-LS extensions for topology info distribution
- Bandwidth available for CS-SR per link

- PCC delegates SR policy candidate path computation to PCE

- BANDWIDTH object (operational & requested bandwidth)
- LSPA object (enforce no local protection via L=0 E=1)
- Bidirectional association (co-routing via C=1) ¹⁾
- SR policy association in case of multiple candidate paths ²⁾
- Disjointness association for 1:1 protection ³⁾
- Request strict hops and no-reoptimization ⁴⁾



1) draft-ietf-pce-sr-bidir-path

2) draft-pce-segment-routing-policy-cp

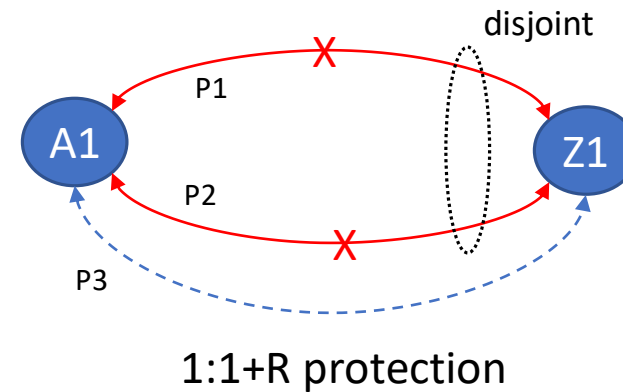
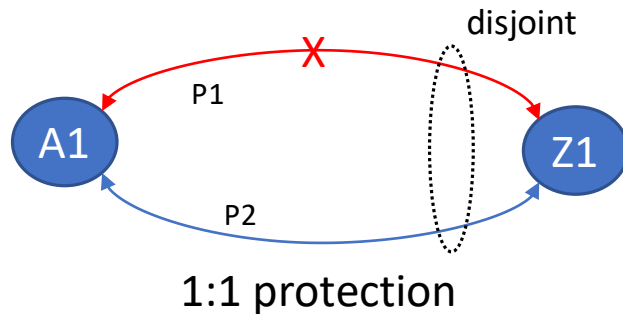
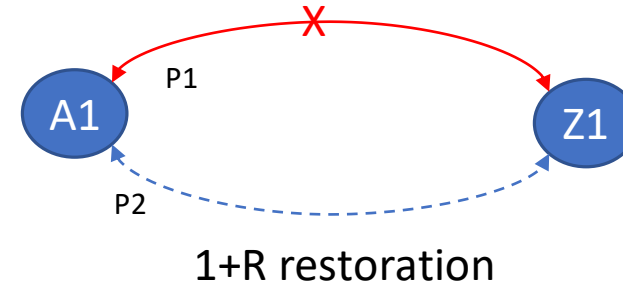
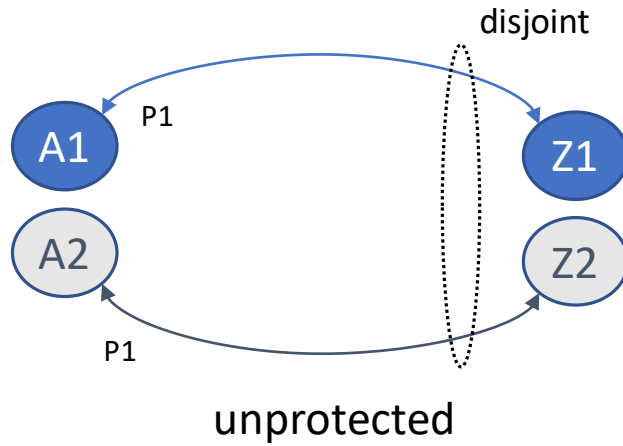
3) RFC8800

4) draft-sidor-pce-circuit-style-pcep-extensions⁴

Recovery Schemes

Candidate-path preferences:
P1 > P2 > P3

established
 established, failed
 on-demand



Candidate-path state indication via O flag in LSP object
O=2 active, O=1 up, O=0 down

Next Steps

- Appreciate your comments and discussion