

RSVP Color in PCEP

22nd July 2021

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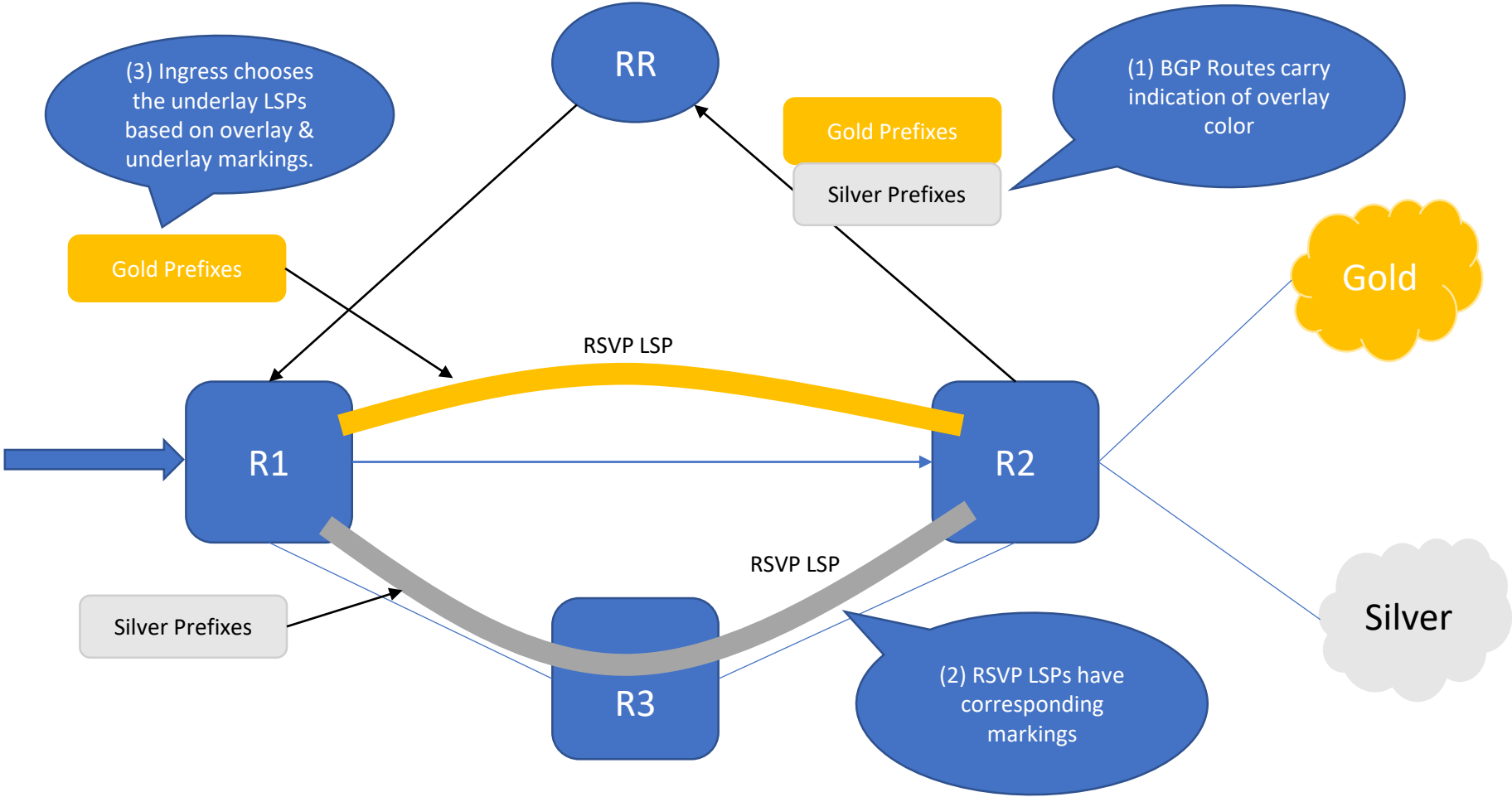
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PROBLEM STATEMENT

- Provide a convenient way to associate service prefixes with RSVP underlay tunnels
- Need has existed for some time. Existing solutions using ‘color’ marking for SR-TE:
 - <https://tools.ietf.org/html/draft-ietf-idr-segment-routing-te-policy-11> carries SR-TE color in BGP SR-TE NLRI
 - <https://tools.ietf.org/html/draft-barth-pce-segment-routing-policy-cp-06> carries SR-TE color in PCEP
- Carrying color markings across domain boundaries in BGP:
 - <https://tools.ietf.org/html/draft-kaliraj-idr-bgp-classful-transport-planes-06>
- Existing RSVP deployments have a similar need.

ENVISIONED USAGE



SOLUTION OVERVIEW: PCEP PROTOCOL

- LSP Object carries color marking in a new TLV
 - Can be used by PCE to create an LSP with the appropriate color
 - Can be used by PCC to report color
- ‘Color’ is a property of a tunnel, rather than individual LSP’s of the tunnel.
 - Attach with “primary” LSP

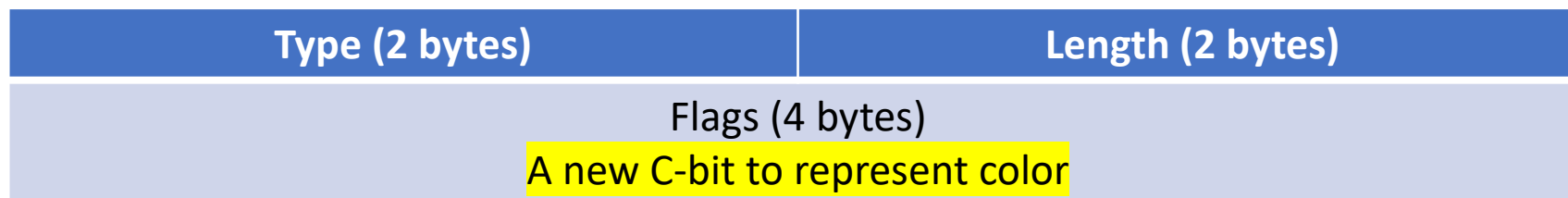


Note: Need to reconcile with <https://tools.ietf.org/html/draft-peng-pce-te-constraints-04>

MISMATCH HANDLING

| PCE | PCC | Implication |
|-----|-----|--|
| Y | N | LSP can't honor color. Server needs to know. |
| N | Y | The values reported by the PCC are ignored by server, which is benign. But, client can as well not insert color. |

STATEFUL-PCE-CAPABILITY TLV



Usage with BGP-CT

- While BGP-CT is not a pre-requisite for using the color specified in this draft, BGP-CT & RSVP PCEP color can inter-operate.
- In BGP-CT, overlay marking (mapping community) selects “resolution scheme”
 - Resolution scheme is associated with an ordered set of transport classes
 - The PCEP RSVP ‘color’ field can be used to associate LSP’s with transport classes

THANK YOU!