PCEP Extensions for Receiving SRLG Information.

draft-dhody-pce-srlg-collection-00

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Motivation

- Extend PCEP to support collection of SRLG information during path computation and encoding this information in the reply message in multi-layer, multi-domain environment.

[ietf-ccamp-rsvp-te-srlg-collect] specifies a similar extension to RSVP-TE.

| When PCEs are used for path-computation, easier to learn SRLG at the time of computation itself. | Can trigger backup SRLG disjoint path computation without waiting for signaling. | Only PCC/PCE upgrade v/s at the very least boundary node upgrade. | Easier for PCEs to consolidate SRLG information for end to end path. | Ease in management of Macro SRLG. |
PCEP Requirements

SRLG Collection Indication:

• Capability to indicate whether the SRLG information should be collected during the path computation procedure.

SRLG Collection:

• If requested, the SRLG information should be collected during the path computation and encoded in the PCRep message.
PCEP Extension

• **New flag in RP Object ‘S’ (SRLG - 1 bit):** when set, in a PCReq message, this indicates that the SRLG information should be collected. In a PCRep message, when the S bit is set this indicates that the returned path in ERO also carry the SRLG information.

• **SRLG Subobject in ERO:** The SRLG of a path is the union of the SRLGs of the links in the LSP. The SRLG subobject is defined in [ietf-ccamp-rsvp-te-srlg-collect]:

![Diagram of SRLG subobject in ERO]
Next Steps!

- Feedback from the WG.
- In scope for WG adoption?
Questions & Comments?
Thanks!
Macro SRLG [farrel-interconnected-te-info-exchange] can be generated by IP-PCE. The co-operating PCEs could easily convert Macro SRLG in IP to normal SRLG values in optical layer.
Why collect SRLG for multi-domain?

- In case of multi-domain path, you can carry the full path in XRO (each hop) and use ‘attribute’ field.

```
<table>
<thead>
<tr>
<th>X</th>
<th>Type = 1</th>
<th>Length</th>
<th>IPv4 address (4 bytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IPv4 address (continued)</td>
<td>Prefix Length</td>
<td>Attribute</td>
</tr>
</tbody>
</table>
```

- The Attribute field indicates how the exclusion subobject is to be interpreted. 2- SRLG.

- When you have path-key, you cannot carry the full path and the PKS subobject does not have this attribute.

- So one has to collect the SRLG information before hand and use it along with PKS subobject.