PCEP for SRv6

draft-negi-pce-segment-routing-ipv6-03
draft-dhody-pce-pcep-srv6-yang-00
Introduction & Motivation

• Segment Routing (SR) can be used to steer packets through an IPv6 or MPLS network using the source routing paradigm.
• Since SR can be applied to both MPLS and IPv6 data plane
  • A PCE be able to compute SR-Path for both MPLS and IPv6 forwarding plane
    • Segment identified by an IPv6 address
    • SID list as a list of IPv6 address (encoded in the SRH)
• PCEP Extension to support SRv6
  • Extended SR-ERO, SR-RRO sub-objects for SRv6
  • Capability advertisement for SRv6 in PCEP
  • A new path setup type for SRv6
### SRH & SRv6 SID

The “Function” can identify the L2VPN/L3VPN, and other services or APP.

<table>
<thead>
<tr>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>128 Bit</td>
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<tr>
<td>128 Bit</td>
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<tr>
<td>128 Bit</td>
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<tr>
<td>128 Bit</td>
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</tbody>
</table>

**IPV6 SRH HEADER**

- **Pload Length**: Next=43
- **Jump Limit**: Source Address
- **Destination Address**: Next Header
- **Hdr Ext Len**: Flags
- **Routing Type**: Tag
- **Segments Left**: Segment List[0]
- **Segment List[1]**
- **Segment List[2]**
- **Payload**

<table>
<thead>
<tr>
<th>Version</th>
<th>Traffic Class</th>
<th>Flow Label</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pload Length</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Next=43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hop Limit</td>
</tr>
</tbody>
</table>

**IP Header**
Update

- Update the SRv6 Capability handling
  - As per the PST and PCEP-SR
  - SRv6-PCE-CAPABILITY sub-TLV is defined

- Alignment with PCEP-SR
  - Use of NAI-Type (NT) instead of SID-Type (ST)
  - Error Handling
  - SR-ERO interpretation
  - SRv6NT = Node ~ LOC
SRv6 Yang

- Capability for SRv6
  - Max-SL

- A feature for SRv6

- A new PST for SRv6

- A SRv6 Path
  - List of SRv6 SID (IPv6 address)
Questions & Next Steps

• Support for SRv6 in PCEP is a reasonable requirement!

• Is this the right approach?
• Is this a good base for the WG to consider adoption?
  • draft-negi-pce-segment-routing-ipv6-03

• Refine the document!
Thank You!