Stateless SRv6 Point-to-Multipoint Path

draft-chen-pim-srv6-p2mp-path-02

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Overview

Thank people below for comments around adoption
• Acee Lindem,
• Jeffrey Zhang,
• ...

Addressed comments in updated version

Updates to Previous Version

➢ Changed status to Experimental
➢ Added “Stateless SRv6 P2MP Path for Ingress”
➢ Changed name “SRv6 P2MP” to “Stateless SRv6 P2MP”
   ▪ Added text about split sub-tree for segment list of limit size
   ▪ Added Example IPv6 Header using G-SRv6
Stateless SRv6 P2MP Path for Ingress

Create a stateless SRv6 P2MP path:
1. PCE gets a request from a user/app for a path
2. PCE computes a path, constructs segment list for path, sends list to Ingress
3. Ingress establishes path, sends PCE report on status of path
4. PCE gets report about path, records it

For node X
X-m: X’s multicast SID
name SRv6 P2MP to Stateless SRv6 P2MP

- **SRv6 P2MP** path/tree used
  in the other solutions with storing some states in core

- **Stateless SRv6 P2MP** path/tree used
  in the solution in this document without state in core
Text about Split sub-tree

Regarding to the finite size of the segment list, a sub-tree can be "split" into multiple sub-trees such that each of the sub-trees can be encoded in the segment list of the finite size.
Example IPv6 Header using G-SRv6

For the example path from R to L1, L2, L3 and L4, ingress R has DA and IPv6 header as follows.

IPv6 Header:

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |

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Next Header | Hdr Ext Len | Routing Type | Segments Left |
---|---|---|---|
---|---|---|---|

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Last Entry | Flags | Tag |
---|---|---|
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P4 ID | 2 | 2 |
---|---|---|
---|---|---|

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L3 ID | 0 | 0 |
---|---|---|
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L4 ID | 0 | 0 |
---|---|---|
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Padding |
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P2 ID | 2 | 2 |
---|---|---|
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P3 ID | 1 | 3 |
---|---|---|
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L1 ID | 0 | 0 |
---|---|---|
---|---|---|

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L2 ID | 0 | 0 |
---|---|---|
---|---|---|

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Destination Address (DA):

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 |

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2001:db9:0:0 (Common Prefix)

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P1 ID | 2 | 7 |
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