Use of p2mp BFD in PIM-SM
(over shared-media segment)
draft-mirsky-pim-bfd-p2mp-use-case

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Proposed solution

- RFC 8562 BFD for Multipoint Networks extends BFD for use in multipoint and multicast networks
- PIM DR advertises its BFD My Discriminator in PIM Hello packet (extension to RFC 7761) to bootstrap p2mp BFD session
- Non-DR creates a MultipointTail session and uses My Discriminator value from PIM Hello packet and DR’s IP address to demultiplex BFD control packets
- Thus the p2mp BFD session has PIM DR router as the MultipointHead and non-DR routers as MultipointTail. The DR uses the same IP address it uses in PIM Hello as the source IP address for p2mp BFD control packets
- In p2mp BFD there’s no P-F sequence with interval negotiation and Your Discriminator must always be zero
- Detection time is the product of the value in the Desired Min Tx Interval and the value in the Detect Mult. Field of the last received valid BFD control packet
## Extend PIM Hello

### Table

<table>
<thead>
<tr>
<th>PIM Ver</th>
<th>Type</th>
<th>Reserved</th>
<th>Checksum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OptionType1</td>
<td></td>
<td>OptionLength1</td>
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<tr>
<td></td>
<td>OptionValue1</td>
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<tr>
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<tr>
<td></td>
<td>OptionValue2</td>
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</tr>
</tbody>
</table>

### Diagram

```
Type        | Length
            |
My Discriminator
```
Procedures with draft-ietf-pim-dr-improvement

- DR MUST include BFD TLV in its PIM-Hello message. BFD TLV MUST be included after DR Address TLV
- BDR is RECOMMENDED to include BFD TLV in its PIM-Hello message. BFD TLV MUST be included after BDR Address TLV
Next steps

• Comments are welcome
• WG LC?

Thank you!