

Use of p2mp BFD in PIM-SM (over shared-media segment)

draft-mirsky-pim-bfd-p2mp-use-case

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Proposed solution

- BFD for Multipoint Networks (draft-ietf-bfd-multipoint) 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

Extend PIM Hello

PIM Ver	Type	Reserved	Checksum
OptionType1			OptionLength1
OptionValue1			
OptionType2		OptionLength2	
OptionValue2			

Type	Length
My Discriminator	

Update

- Upon detection of MultipointHead failure, the MultipointTail node removes the PIM-SM neighbor
- Expanded applicability of p2mp BFD to monitoring availability of a Backup DR on the shared-media segment
- Discussion on the WG mailing list, other use cases for p2mp BFD in PIM-SM

Next steps

- Comments are welcome
- WG adoption