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

Greg Mirsky gregimirsky@gmail.com
Ji Xiaoli ji.xiaoli@zte.com.cn

IETF-106, November 2019, Singapore
**Proposed solution**

- draft-ietf-pim-drlb defines the mechanism of load balancing multicast flows among eligible PIM-SM routers
- RFC 8562 BFD for Multipoint Networks extends BFD for use in multipoint and multicast networks
- draft-ietf-pim-drlb defined DRLB-Cap and DRLB-List Hello Options
- This draft already defined BFD Discriminator PIM Hello Option
How It Works: Advertisement

• PIM router that includes DRLB-Cap Hello Option MAY include BFD Discriminator PIM Hello Option
  – The router MUST create a BFD session and set itself as MultipointHead per RFC 8562
  – The router MUST set bfd.SessionState in the MultipointHead session to Down

• If a PIM router that along with DRLB-Cap Hello Option includes BFD Discriminator Option finds its address in DRLB-List PIM Hello Option as Group Designated Router (GDR) Candidate for the first time, the router MUST set bfd.SessionState to Up and start periodically transmit BFD control messages
  – Note, PIM DR and BDR that support using BFD Discriminator PIM Hello Option for faster PIM DR/BDR convergence MAY use the same My Discriminator value to advertise along with DRLB-Cap Hello Option
How It Works: GDR Candidate

- If the PIM router that was GDR Candidate doesn't find its address in the most recent DRLB-List Option, the router MUST set bfd.SessionState to Down and cease transmitting BFD control messages.
- For each GDR Candidate that includes BFD Discriminator Option in its PIM Hello, PIM DR creates a MultipointTail session per RFC 8562.
  - Note, PIM DR is GDR Candidate and does not create the p2mp BFD session to monitor itself.
- PIM DR demultiplexes BFD sessions based on the value in My Discriminator field and the source IP address.
- If PIM DR detects a failure of one of the sessions, it MUST remove that router from the GDR Candidate list and immediately transmit a new DRLB-List Option.
Next steps

• Comments are welcome
• WG LC?

Thank you!