

Multi-point BFD in VRRP use case

draft-mirsky-bfd-p2mp-vrrp-use-case

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Motivation

- RFC 5798 supports 10 msec Advertisement_Interval thus enabling Master_Down_Interval to be at 33 msec
- Backup router monitors Master
- Master is not aware of identity of Backup router(s)
- Monitoring availability of the Master is another incarnation of Continuity Check OAM
- RFC 5880 defined BFD
- Asynchronous mode can be used by a Backup to monitor availability of the Master
- Concerns with use of Async RFC 5880:
 - Master doesn't know identities of Backup routers in the given VRID on the same LAN segment
 - Master is not really interested in Backup state change. That can be mitigated by Master setting its bfd.RequiredMinRxInterval to 0

Proposed solution

- BFD for Multipoint Networks (draft-ietf-bfd-multipoint) extends BFD for use in multipoint and multicast networks
- According to the updated procedure, to demultiplex BFD control packets at tail a Backup router would use source IP address and My Discriminator. If the lookup fails it creates new MultipointTail session
- Thus the p2mp BFD session per VRID has Master router as root and Backup routers as tails. The Master uses one of IP addresses associated with the VRID as 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 zeroed

How is suppose to work?

- Master router
 - creates BFD session of MultipointHead type
 - allocates My Discriminator and begins transmitting p2mp BFD control packets using
 - Virtual Router MAC address, as specified in RFC 5798, as source MAC address
 - one of Virtual router IPv4/IPv6 addresses as source IP address
- a tail router creates new BFD session of MultipointTail type
- the tail node demultiplexes BFD control packets to particular VRID based on source IP address and My Discriminator
- when a tail detect that MultipointTail is in down state, i.e. the Master router is not Up, it informs the Backup router which may elect itself as new Master router

Next steps

- Comments are welcome
- Will be asking BFD WG to consider draft adoption