

draft-nitish-vrrp-bfd-02

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Problem Statement

- Real time Applications need faster failover detection of the order of ~150ms.
 - VRRP detects Master down in 3 sec in default configuration.
 - VRRP if implemented in Control plane, aggressive VRRP timers can affect scale.
- VRRP when interfaced with BFD can detect failures faster.
 - BFD requires both the participating peers ipv4 or ipv6 address to initiate the session.

Discussion at IETF 93

- draft-nitish-vrrp-bfd-01 was presented.
- draft-mirsky-bfd-p2mp-vrrp-use-case-00 was presented.
- Both the drafts were discussed in the mailing list and in RTGWWG meeting.
- Proposal to Merge the drafts in RTGWWG meeting.
- draft-nitish-vrrp-bfd-02 is the merge of the two drafts and all comments are addressed.

Changes from 01 to 02

- The draft discusses both viable solutions using point to point or point to multipoint BFD.
- Point to Point BFD:
 - VRRP peers Master or Backup form peer table.
 - VRRP peer can form BFD sessions with all the learnt peers.
 - Critical Backup can become master on Critical BFD session going down.
- Point to multipoint BFD:
 - A tail router creates new BFD session of MultipointTail type
 - The tail node de-multiplexes 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

Operational consideration

- Peer can be removed from the peer table if Advert not received in $3 * \text{Advert interval}$.
- VRRP router not supporting the feature should be configured with lowest priority.
- VRRP should be interfaced with BFD, only when BFD can support more aggressive timers.
- BFD session can be shared with other protocols tracking the same peer.
- Should consider impact of flooding of multicast packets in a VXLAN datacenter environment.

Next Steps

- Welcome comments.
- WG Adoption.

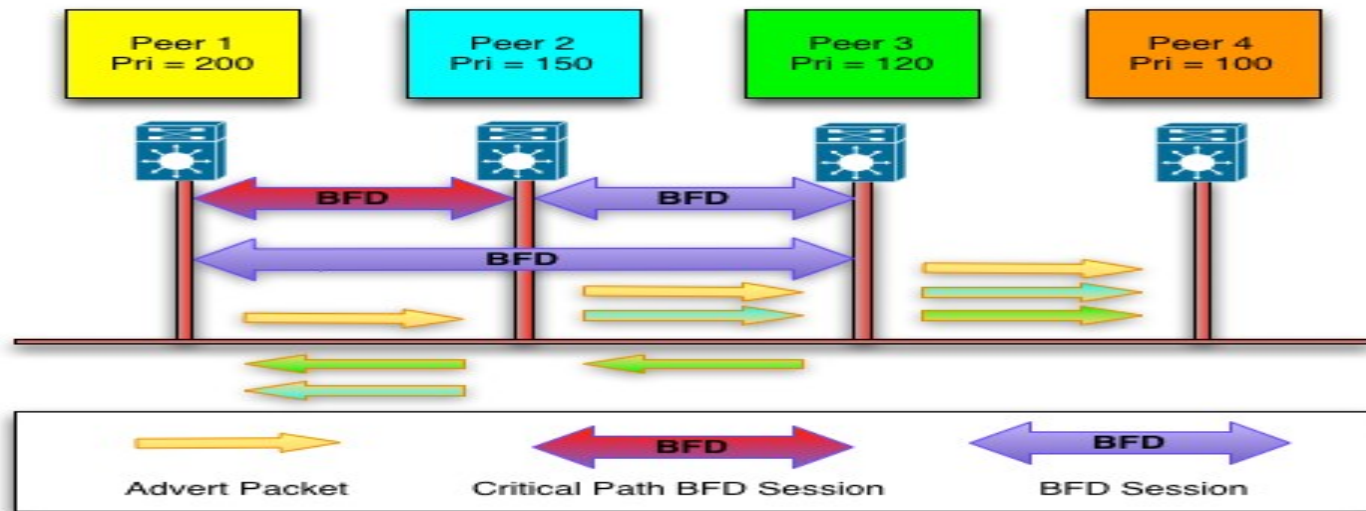
Thank You

- Backup Slides

VRRP Peer Learning Mode

- Define a new BACKUP ADVERTISEMENT Packet type.
- VRRP Master sends ADVERTISEMENT and Backup sends BACKUP ADVERTISEMENT at regular interval.
- VRRP peers Master or Backup form peer table.
- VRRP peer can form BFD sessions with all the learnt peers.
- Critical Backup can become master on Critical BFD session going down.

Peer Table



Example Peer Tables for each Peer in diagram (Peer 4 is non-BFD peer):

Peer 1 Table	Pri	TTL
Peer 2 (IP/IPv6)	150	2
Peer 3 (IP/IPv6)	120	3

Peer 2 Table	Pri	TTL
Peer 1 (IP/IPv6)	200	3
Peer 3 (IP/IPv6)	120	3

Peer 3 Table	Pri	TTL
Peer 1 (IP/IPv6)	200	3
Peer 2 (IP/IPv6)	150	2