MoFRR based on TILFA

draft-ietf-pim-mofrr-tilfa-01

Yisong Liu (China Mobile)(Presenter)
  Mike McBride(Futurewei)
  Zheng Zhang(ZTE)
  Jingrong Xie(Huawei)
  Changwang Lin(New H3C Technologies)

IETF116
Quick Overview

- PIM MoFRR as a protection mechanism is very important for multicast deployments, but currently can only use LFA in RFC7431 and only cover part of the network topologies
- TILFA can help unicast FRR to achieve almost 100% network topology coverage
- Provide a new mechanism by using TILFA for PIM MoFRR with no additional extension of PIM protocol
PIM TILFA MoFRR Mechanism

- No additional extension of PIM protocol and using the existing definitions in RFC5496 and RFC7891

- R4 is used as the normal **RPF vector attribute (Type 0)** defined in RFC5496 since R4 is the NodeSID in the SR repair list. PIM looks up the unicast routing to R4, selects RPF incoming interface and upstream, and joins hop-by-hop to establish the backup PIM multicast tree until R4. Vector R4 is removed in R4.

- R3 is used as the **explicit RPF vector attribute (Type 4)** defined in RFC7891 since R4->R3 is the AdjSID in the SR repair list. R3 is looked as the upstream PIM neighbor. The R4->R3 local interface, corresponding to neighbor R3, is looked as the RPF incoming interface. R4 sends the PIM join packet to R3. Vector R3 is removed in R3.

- After the PIM joins the node R3, PIM can look up the unicast route of the multicast source directly to select the RPF incoming interface and upstream, and so joins hop-by-hop to establish the backup PIM multicast tree.
IPv4 Data Plane (MPLS-SR)

- RPF to S: R1
- RPF to S: R2

IPv6 Data Plane (SRv6)

- RPF to S: R1
- RPF to S: R2

Unicast TI-LFA: SR Repair list [16004, 24002]
PIM MoFRR: RPF Vector [4.4.4.4, 14.0.0.1]
Next Step

- Welcome questions and comments
- Ask for WGLC