PIM MTU Hello Option
for PIM Message Encapsulation

draft-lts-pim-hello-mtu
Problem Statement

• PIM message segmentation is common since the number of group states are often large

• PIM router only uses its own outbound sending link MTU to calculate message length

• If sending (e.g. downstream) MTU is smaller compared to receiving (e.g. upstream) MTU, PIM message will be discarded, resulting in unsuccessful channel setup by field report
Solution

• Enable PIM to know MTU information of its neighbor(s) by exchanging Hello messages

• Take neighbor link’s MTU into account when segmenting a PIM message

• Procedures:
  • Define a new MTU option for Hello message
  • Introduce ‘Sending MTU State’ recording the minimum value of my outbound MTU and my neighbors’ inbound MTUs on the same link
  • Refer to Sending MTU State during the encapsulation
MTU option

- Carried in Hello message by MTU-capable router
- Accepted when having a valid value (e.g. not too small) and from a legal neighbor
- Ignored by MTU-incapable router
Scope

- All variants of PIM protocols, including PIM-­‐SM,-­‐SSM, -­‐BIDIR, and -­‐DM

- Applied to per-hop multicast PIM message

- Not applied to unicast Register-like messages, whose MTU issue has already been considered