BFD Encapsulated in Large Packets

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Problem Statement

• In environments where applications running across multiple hops requires a consistent MTU, blackholing may occur if the path unexpectedly changes and some link does not support that MTU.

• BFD PDUs are not large enough to provide this Path-MTU based continuity check.
  • The BFD Length field is one octet!
Proposed Solution

• BFD intentionally does not require that the encapsulating transport protocol (e.g. IP+UDP) have a length that is minimal to contain the BFD packet.
  • The original BFD authors have been here before in IGP-land.

• Solution: Make the underlying packet big and BFD packet is at the beginning of it. Zero pad the rest.
Discussion

• Why zero-pad? Why not one of the usual bit-pattern tests?
  • Do you really want your line card verifying a 9kbyte pattern at BFD line rates?
  • Also leaves room to place other things at end of packet. We’ve avoided this for extensions... so far.

• Do we need to negotiate this on both sides?
  • I don’t think so. Do you have a different opinion?