UDP Options

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Joe Touch
strayalpha.com

Items updated

- ACS calculation clarified
  - Payload on only, zero has no special meaning
- FRAG clarified
  - Update UDP checksums based on datagram and pseudoheader upon fragmentation and reassembly
- LITE clarified
  - Supports use when lite area is < 4 bytes
  - Corrected description of UDPlite
- Augmented list of required options
  - Reordered, now includes all of the first 7
  - LITE needs to be there; MSS is used for PLPMTUD and FRAG would be critical for DNSSEC, so those are included too
  - (can’t include time because time may not be available)

Other proposals

- TLV vs. fixed header + TLV extensions
  - Fixed header doesn't avoid the need to parse the TLVs
    - To confirm support before processing
    - To reorder if using LITE
- Making OCS mandatory and first
  - Saves 1B(kind) when used
  - Consumes 1-2B when not needed (will it always be needed?)
  - Would be more work to move for LITE/FRAG+LITE
- EOL vs option length field
  - Length doesn't avoid parsing; LITE could require reordering before computation
  - Length costs 2B more (EOL would often not be used at all)
- OCS size
  - 8 vs 16; is the strength of 16 needed?
  - Note it's the same alg. and hardware-assistable regardless

To do

- Timestamp detail
  - Adapted from RFC 7323
  - Monotonic, non-decreasing
  - Typical tick time
  - Request defined as “reply=0”;
    reply defined as both fields nonzero
  - ?do we ever need req and reply in the same segment?
    - If so, should we sacrifice a bit that says “reply even when both fields are nonzero?”
    - Or can we simply set our Tsval =0 to indicate “do not respond”?
  - Always respond with the highest Tsval rec’d (not the most recent one)
- OCS checksum size
  - Currently 1 byte; should it be 2?
  - What are we checking for (in-transit errors or misuse)?