UDP Options

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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)?