

UDP Options

IETF 111 – July 2021

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-13 updates

- Changes since -09 (IETF 110)
- Added:
 - MRSS: max reassembled segment size (per IETF 110)
- Changed:
 - Split AE and move ENCR to UNSAFE set
 - Redesigned FRAG to support efficient frag/reassy offload
- Clarified:
 - MSS is only a hint, not a guarantee (as TCP)
 - ROHC interaction (no longer updates)
 - UCB (control block) sharing like TCP
 - Use of length vs. extended length
 - Post EOL bytes are 0 on transmit, not checked
 - Allow up to 7 NOPs (up from 3)

AE split to AUTH, ENCR

- Split into safe and unsafe parts
 - AUTH is safe; does not modify user data
 - ENCR is unsafe; modifies user data

New FRAG format

- Designed to place after OCS
 - Early location reduces TLV chain for offload
 - Requires field to point to front of frag data
- Nonterminal frag includes per-frag opts
 - i.e., OCS, FRAG, opt1, opt2, data...
- Terminal frag reassembles into legacy format
 - i.e., OCS, FRAG, opt1, opt2, data, opt3, opt4
 - Reassembles to data, opt3, opt4
 - Same per-segment option proc as legacy format
 - Ensures no limit on segment option length (allows zero-length frags that reassemble segment opts)

Pending issues

- FRAG support requirement
 - Yes or no, and if so, how many / how big MRSS?
- Offload support
 - Post-reassy option location
 - In frag “header” (trailer on zero-len user data) or as post-reassy trailer?
 - FRAG-only
 - Can an implementation decide to support only FRAG-based/UNSAFE mode?
 - Must offload include all proc or can it be just frag/reassy
- Option encoding
 - Frag vs. non-frag option use
 - Set by user or fixed by option?
 - Encode in type (“copy on frag” flag)?
 - UNSAFE encoding
 - Current (one codepoint + subtype) or separate codepoint region?
- Some other pending updates
 - Inconsistencies, clarifications