Integrity of In-situ OAM Data Fields

draft-ietf-ippm-ioam-data-integrity-09

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Status -09

- Addresses Ben’s review (early secdir)
- Includes feedback received in Brisbane
- Document ready for WGLC
- … but, before that, three questions to the WG (see next slides)
Question 1/3: Nonce (RECOMMENDED vs MUST)

Context: specific size for the Nonce, with specific content

Advantage of RECOMMENDED:
  • not restrictive

Advantage of MUST:
  • security: optimized key usage (based on NIST recommendations)
  • interop: encapsulating node identification, replay attack protection

Note: -09 uses MUST… Everyone OK with this change?
Question 2/3: Unknown Integrity Protection Method

Method-ID: 8-bit unsigned integer. It defines the Integrity Protection Method to compute the Integrity Check Value (ICV) field. If a node encounters an unknown value, it MUST NOT change the contents of the IOAM Integrity Protection header and MUST NOT change the contents of the IOAM-Data-Fields. In other words, the node MUST NOT process the IOAM Option-Type.

← current version in -09

… a node does NOT insert IOAM-Data-Fields (IOAM would not “work” on the node anymore)

vs.

… a node inserts IOAM-Data-Fields anyway (IOAM “works” but also breaks the Integrity validation)

Any opinions?
Question 3/3: Ambiguity of “(im)mutable” with pre-alloc

Whatever the Option-Type, a transit node MUST NOT participate in the integrity protection (i.e., update the ICV) if it does not add IOAM-Data-Fields → mandatory to not break the integrity validation.

Text attempt:
“If the transit node does not add any IOAM-Data-Fields (e.g., it only modifies mutable IOAM-Data-Fields or does nothing), then the transit node MUST NOT update the ICV field in the IOAM Integrity Protection header.”

… would not work for the Pre-allocated Trace: they don’t really “add” IOAM-Data-Fields, instead they “update” or “modifies” IOAM-Data-Fields (pre-allocated by the encapsulating node) → they are considered more as mutable rather than immutable fields in this case.

How to distinguish pre-alloc from others? Working on it, any suggestions appreciated.