Signaled Minimum Fragment Size for IET

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Overview

- In most cases IET can fragment a frame at byte 64 of the frame.
- It is usually a goal of IEEE 802 that new standards work with previous standards/use cases as well as future ones (wherever it is possible/feasible).
- There are a number of use cases where a receiver may not want the first fragment of a frame to finish after 60 data octets.
- We propose to expand the IET signaling (“99.4.2 Determining that the link partner supports preemption.”) so the receiver can specify the minimum fragment size.

Why more than 64 bytes in 1st fragment

- A simple example is 1588 one step where the required information is contained within IPv4 or IPv6.
- There are a number of other system features that use “DPI” like classification (e.g., Quality of Service, Security, Application identity) where it is very inconvenient to have important information either in 2nd or subsequent fragments, or to have required tokens split across fragments.
- Deep packet inspection of IPv6 headers.
- This is particularly relevant to low cost or cut though systems that do not or can not retain extensive state between the fragments.

Goal

- Enable MAC Clients that want bigger than default fragment size (for frames using the pMAC) to request this from the link partner.
  - This does not impact other use cases.
- Signal the request in “Additional Ethernet Capabilities” using one of
  - minimum “not last” fragment size in units of 64 octets
  - minimum “first” fragment size in units of 64 octets
- Minimal impact on MAC receivers that do not need this service.
- Mandatory for MAC transmitters.

Request

- Add capability to 802.3BR IET to increase the “not-last” fragment size beyond the 64 octets default.
- Signal “fragSize” in LLDP using units of N x 64 octets (send N in the TLV).
- Transmitters keep track of this parameter, and are required to implement this function.