QUIC HW OFFLOAD SUPPORT

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RFC

• Asked Steffen if XFRM was a valid interface to enable QUIC offload and he suggested I bring it up here.
• So purpose here is to gage if this would be a valid approach.
• Very much an RFC
Using XFRM to offload QUIC encrypt/decrypt

https → QUIC

- xfrm add/delete state
- xdo_add/delete

User Space

Kernel

Driver

HW offload
HW offload functionality

Ingress

- Offload QUIC SA exists
  - Yes: Decrypt packet
  - No: Pass through

Egress

- Offload QUIC SA exists
  - Yes: Encrypt packet
  - No: Pass through
Example of XFRM interface extension

ID := [ src ADDR ] [ dst ADDR ] [ proto XFRM-PROTO ] [ spi SPI ] [ qport QUIC-UDP-PORT ] [ qversion QUIC-VERSION ] [ qcid QUIC-CONNECTION-ID ]

XFRM-PROTO := esp | ah | comp | route2 | hao | quic

ip xfrm state add ID [ALGO-LIST] .. [ init-seq-num INITIAL-SEQUENCE-NUM ]

RED = New additions for QUIC support