IPv6 Performance and Diagnostic Metrics v2 (PDMv2) Destination Option

draft-elkins-ippm-encrypted-pdmv2-03

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The fields in PDMv2 : S-S

- SCALEDTLR: Scale for Delta Time Last Received
- SCALEDTLS: Scale for Delta Time Last Sent
- GLOBALPTR: Global Pointer
- PSNTP: Packet Sequence Number This Packet
- PSNLR: Packet Sequence Number Last Received
- DELTATLR: Delta Time Last Received
- DELTATLS: Delta Time Last Sent

Only ONE needs to be decrypted by other end

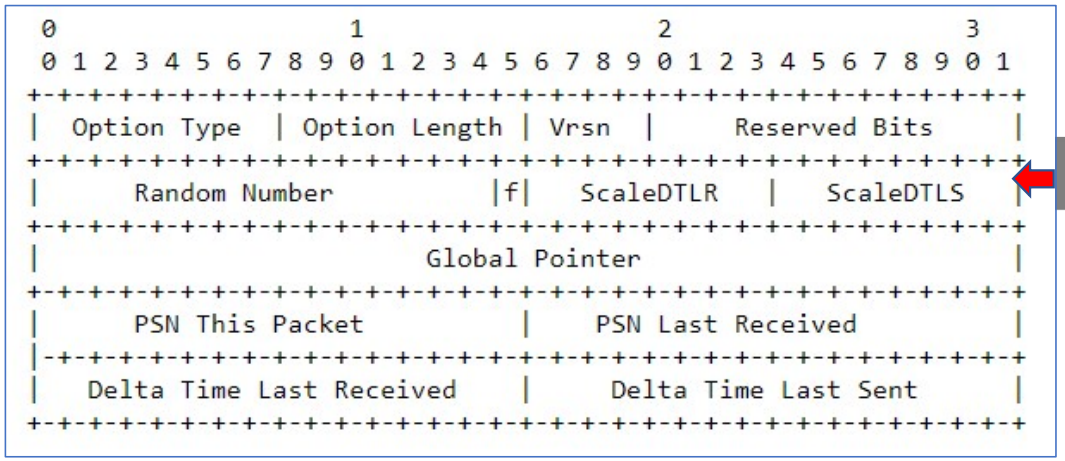
- SCALEDTLR: Scale for Delta Time Last Received
- SCALEDTLS: Scale for Delta Time Last Sent
- GLOBALPTR: Global Pointer
- PSNTP: Packet Sequence Number This Packet
- **PSNLR: Packet Sequence Number Last Received**
- DELTATLR: Delta Time Last Received
- DELTATLS: Delta Time Last Sent

The PSNLR field is the PSNTP of the last packet received from the other side.

That is the ONLY reason that the other end (client or server, needs to decrypt the packet at all.

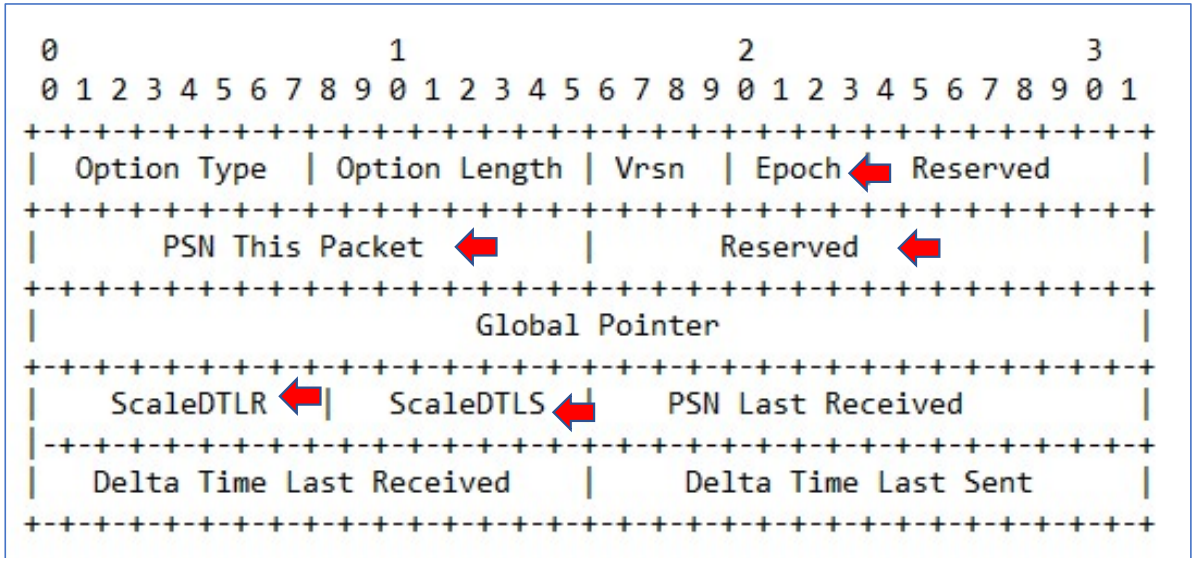
Proposal

- Pass PSNTP in the clear
  - Other side does not ever need to decrypt
  - PSNTP becomes the "nonce" that is required for the encryption
  - Add “Epoch” field for roll-over of PSNTP counter
  - Greatly reduces response time and complexity of implementation
- Analysis of data is done offline (out of scope)
- Topology of Primary Server / Primary Client was needed because of key exchange. (Need to do real-time decryption. So other side needs the key.) Now not needed!



PDMv2 Current Packet Layout

PDMv2 Proposed Packet Layout



Question for WG

- What do you think of this simplification?
- If WG agrees, then we will discuss with SECDIR to get their opinion
- If they agree, then we will revise the draft (describing PDMv2 flow only. No talk of Primary / Secondary.

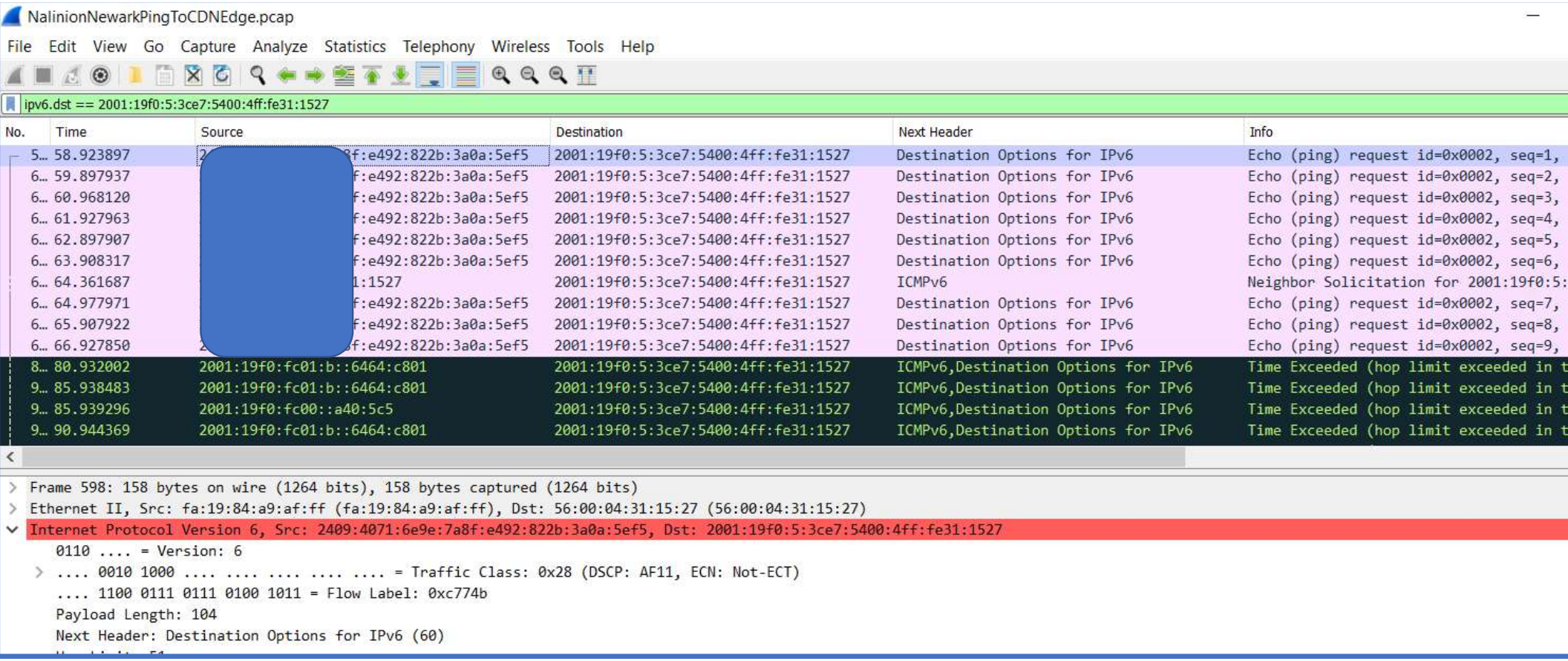
Thoughts?

Offline Decryption

In offline decryption, the organization will have to obtain:

- Sender's key,
- Ciphersuite,
- metadata involved in decryption (nonce)

- Key and ciphersuite can be given via registration / other process. Out of scope of this draft
- Nonce is in each packet



Seeing “PDM” in the wild! 1527 is our server. 5ef5 does not belong to us!