

Proposal for Updates to Guidance on Packet Reordering

[draft-white-intarea-reordering](#)

For IPSECME – IETF 124

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Background

- L2 technologies can have link characteristics that result in packet *reordering*, e.g.:
 - Link Aggregation
 - When aggregated links have different latency or capacity
 - L2 retransmissions
 - Common in wireless links
- Several L2 standards introduce requirements for *resequencing* to restore the frame sequence by delaying early-arriving frames

The gist

- Latency is increasingly important
- Guaranteeing in-order-delivery:
 - increases latency
 - adds cost and complexity to L2
 - provides no value in many cases

Goals

- Provide up-to-date information for L2 technology SDOs on the impact that packet reordering & resequencing have on IP protocols.
- Enable SDOs to make informed decisions for future standards.

Questions for IPsec

- If L2 links adopt a more relaxed approach to mandating resequencing, would this create problems for modern IPsec implementations?
 - If so, why? (e.g. replay protection doesn't like out-of-order arrival)
 - Is that solvable?
 - If not, should we create guidance that links look out for this traffic and handle it differently?