On the Validation of TCP Sequence Numbers
(draft-gont-tcpm-tcp-seq-validation)

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Motivation

- There is a well-known bug in RFC 793
- Unless addressed, it could result in ACK wars
- Virtually all stacks have addressed these issues for years now
Goal of this document

- Document the bug
- Propose a workaround
- Document other implemented workarounds
- Formally update RFC793
Simultaneous ZWPs

• Current proposed text allows

  \[ \text{RCV.NXT} - 1 \leq \text{SEG.SEQ} \]

• This doesn't allow ZWPs that contain more than 1 byte of data
  – the “1” above considers the de-facto 1-byte ZWPs

• Accommodating non-zero ZWPs would require additional state (e.g., Linux)
  – e.g. record SND.NXT when entering the persist state
Moving forward

• Adopt as a tcpm wg item?