

# **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?