TCP RST Diagnostic Payload

draft-boucadair-tcpm-rst-diagnostic-payload

IETF#125, March 2026, Shenzhen

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Pending Issues from IETF 124

- More INTERNET experiments are needed before standardization
- CBOR format is not appropriate for TCP

Link: https://datatracker.ietf.org/doc/minutes-124-tcpm-202511051700/00/

Current Status

- Replace CBOR with a more concise and compact plain text
- Complete common socket API extension
- Support FreeBSD kernel
- Support Wireshark
- Change Intended status to Experimental

Payload Format (1)

- Replace CBOR with a more concise and compact plain text

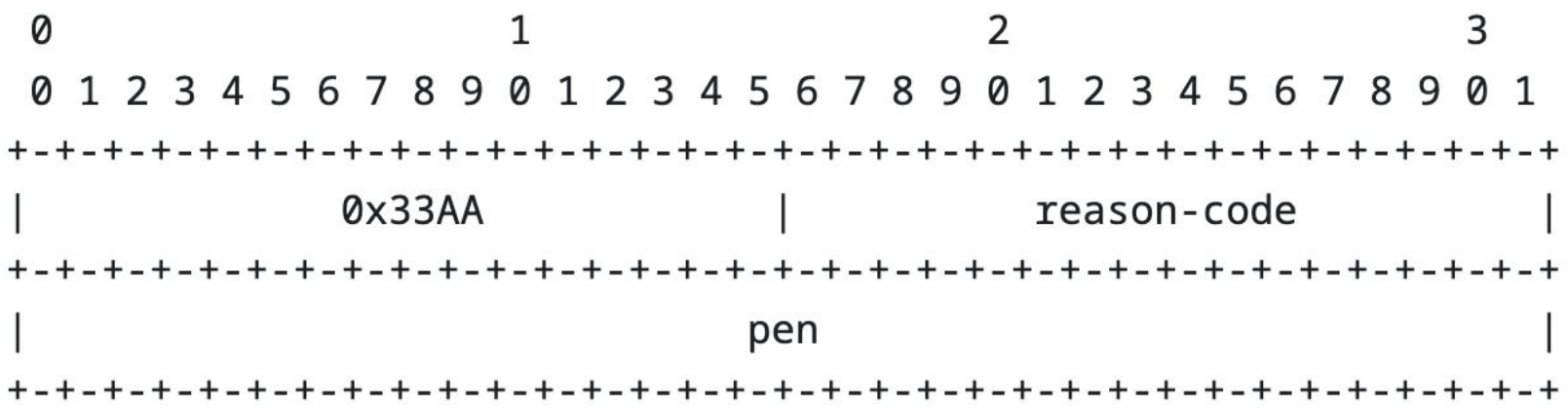


Figure 1: Structure of the Compact RST Diagnostic Payload

Payload Format (2)

- An alternative/optional format to help users get more useful information

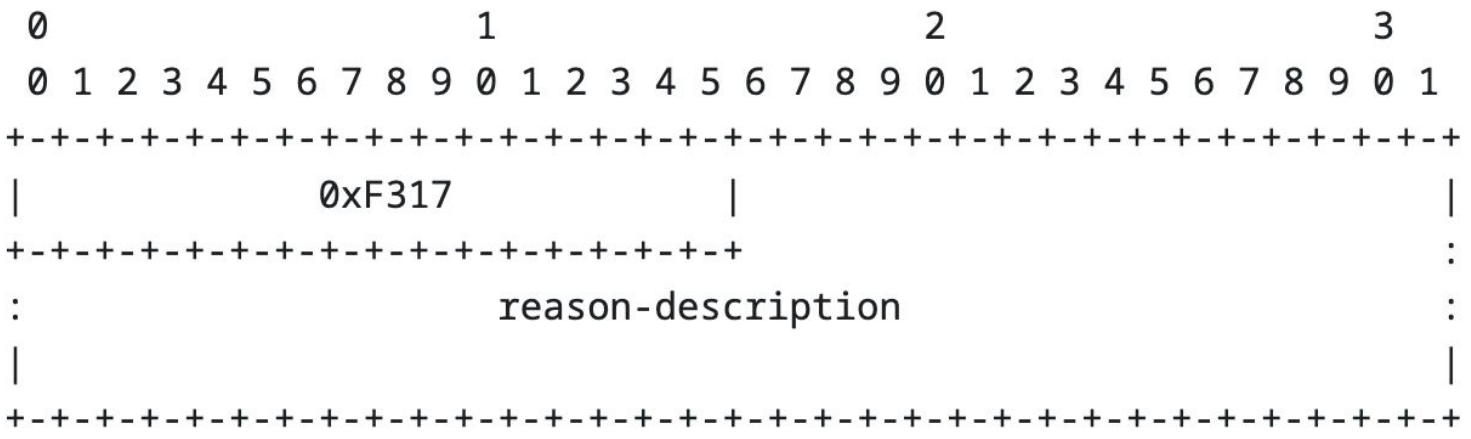


Figure 2: Structure of the RST Diagnostic Payload with Reason Description

Socket API

- Michael Tuexen wrote a clean API documentation
  - Detailed discussion: https://github.com/boucadair/draft-boucadair-tcpm-rst-diagnostic-payload/pull/14

Option Name	Data Type	Set	Get
TCP_RST_REASON_ENABLE	uint32_t	X	
TCP_RST_REASON_CODE	struct tcp_rst_reason	X	X
TCP_RST_REASON_DESC	char[]	X	X

Table 1: Socket Options

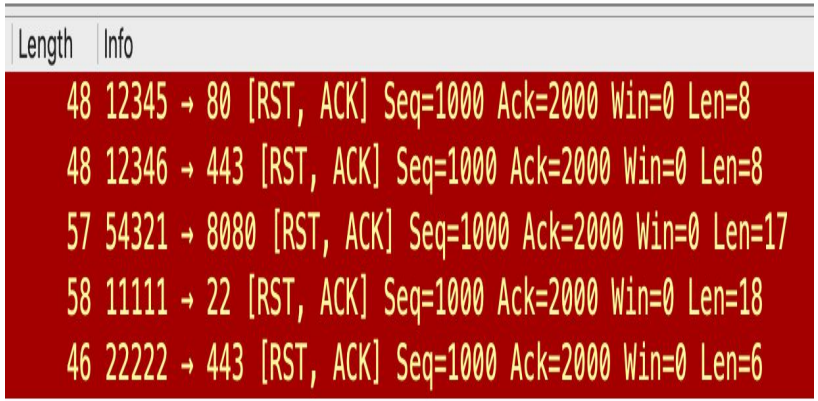
Kernel Implementations

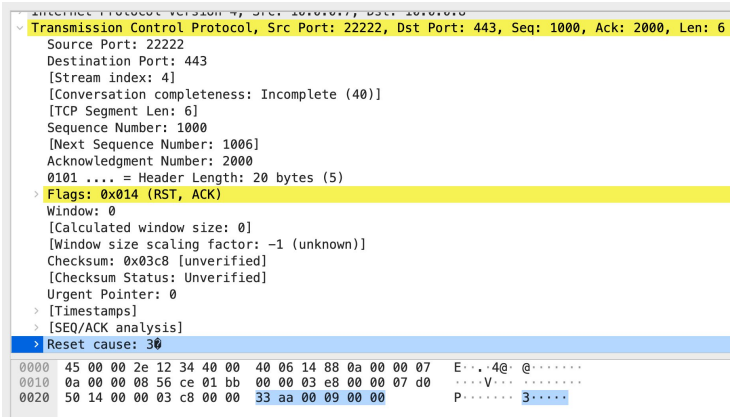
- Michael Tuexen has done the complete patch targetted at FreeBSD kernel
  - https://reviews.freebsd.org/D55338

- Jason Xing implemented a simple function in Linux kernel to do exhaustive experiments in production. Prior to this, part of this draft has been merged in mainline in 2024.
  - https://mailarchive.ietf.org/arch/msg/tcpm/BISIldzPWSUuggIuCF4o-5QNOVI/
  - https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git/commit/?id=d5115a55ffb52

Wireshark Support

- Gavin Bunney updates RST diagnostic payload for draft-15
  - commit: https://gitlab.com/wireshark/wireshark/-/commit/89359ff540c26eecab2e3457062b541b203030eb
  - pcap: https://gitlab.com/wireshark/wireshark/-/blob/89359ff540c26eecab2e3457062b541b203030eb/test/captures/tcp-rst-diagnostic.pcap
- Note that tcpdump reserved this feature around 2001





Next Steps

- Request WG Adoption