Working Group Draft for TCPCLv4

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Overview

- Background

- Discussion of current state

- Way forward for TCPCL and BPbis

Motivations for Updates to TCPCL

1. During implementation of TCPCLv3, Scott Burleigh found an ambiguity in bundle acknowledgment and refusal.

2. For use in a terrestrial WAN, author has a need for TLS-based authentication and integrity. TCPCLv3 mentions TLS but does not specify its use.

3. Reduced sequencing variability from TCPCLv3

4. Allow an endpoint to positively reject a message (rather than simply ignoring it).

Goals for TCPCLv4

- Do not change scope or workflow of TCPCL!
  - As much as possible, keep existing requirements and behaviors. The baseline spec was a copy-paste of TCPCLv3.
  - Still using single-phase contact negotiation, re-using existing headers and message type codes.
  - Allow existing implementations to be adapted for TCPCLv4.

- Re-use existing encoding, type and reason codes.
  - New IANA registries are requested but where purpose is identical to TCPCLv3 the cde is re-used.
  - Since workflow is preserved, majority of message types are retained.

Last Draft Edits

- Last questions resolved on the TCP CL:
  - TLS is now mandatory-to-implement but optional-to-use at session time
  - Separate IANA registries defined for TCPCLv4
    - Avoids naming confusion, makes changes more obvious
  - TCP CL contact header now supports protocol extensions, but does not define any currently
    - Uses fixed-octet-width fields in TLV-type structure
  - Edited message encoding to use octet-aligned fields
    - Avoids bit-packing for message header content
    - Avoids reserving flag bits for messages which do not use them

Way Forward for TCPCLv4

- Current specification draft is complete
  - No new comments have been received to-date
  - This means no issues but also no concurrence

- Working implementation exists and is available for interoperability testing
  - Updated to current I-D content
  - Implemented in `scapy/python` for ease of understanding
  - Handles concurrent sessions
  - Does not implement BP agent behavior, only CL behavior