

The UDP Tunnel Transport mode

draft-fairhurst-6man-tsvwg-udptt-01 (21-Jun-09)
(Individual Submission)

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Transport Checksum for IPv6

- **In IPv4 checksum is not required**
 - Endpoint association protected by IP checksum
 - Still is recommended [RFC 5405]
- **IPv6 [RFC 2460] mandates transport checksum**
 - No IPv6 header checksum

Why do people some want to change?

- **AMT, Automatic IP Multicast Without Explicit Tunnels**

draft-ietf-mboned-auto-multicast-09

AMT outer checksum protects only outer IP & UDP header, type, and Nonce

Issue is mis-delivery to standard UDP stacks

- **Desirable:**

No Checksum computation at sender/receiver

UDP-like traversal of middleboxes (header value 136)

- Errors could...
- Cause packet to go in wrong direction, or to wrong port
Such packets should be discarded
- Cause the inner packet to become corrupted
Such packets should be discarded

Nice to make *wrong* endpoint do the checksum,
but avoid processing on *actual* tunnel endpoints...

UDPTT Header Format

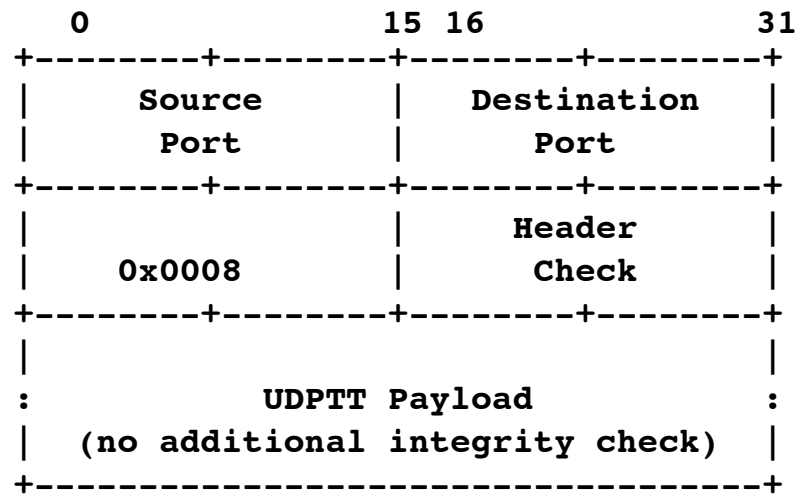


Figure 1: UDPTT Header Format

UDPTT pseudo-header for IPv6:

128b Source Address

128b Destination Address

32b 0x0000000008

24b zero

8b Next H value

Two length fields: in IP and Transport

- **Three behaviours:**
- 1 Standard checksum calculation
 - If “UDP” length used, could truncate with no payload
- 2 Standard checksum calculation
 - If “corrected IP” length used, would be OK
- 3 Checksum used IP length rather than UDP length
 - Fails, discarded (Non-compliant to RFC 2460)

- **Updated text:**

- 3.2. Requirements for Tunnelled Protocols

- 3.3. Backwards compatibility with RFC 2460

- 3.1 UDPTT Usage Guidelines

- 6. Security Considerations

- Appendix B. Applicability for AMT

- **Currently known remaining issues:**

- Middleboxes /SHOULD/MUST/ NOT truncate IPv6 datagrams

- Specify simple API (sockopt)

- ??? v4-v6 protocol translation (PT)

What may middleboxes do?

- Most NATs adjust transport checksums and don't (re) compute.
- Some middleboxes automatically drop zero checksums.
- Some middleboxes may correctly forward UDPTT

- But ... there are many variants!

- Some minor tweaks...
- The author thinks this is ready for WG consideration:

Is this a good idea?

Does anyone have comments?

Is this deployable?