

Transports over UDP (TOU)

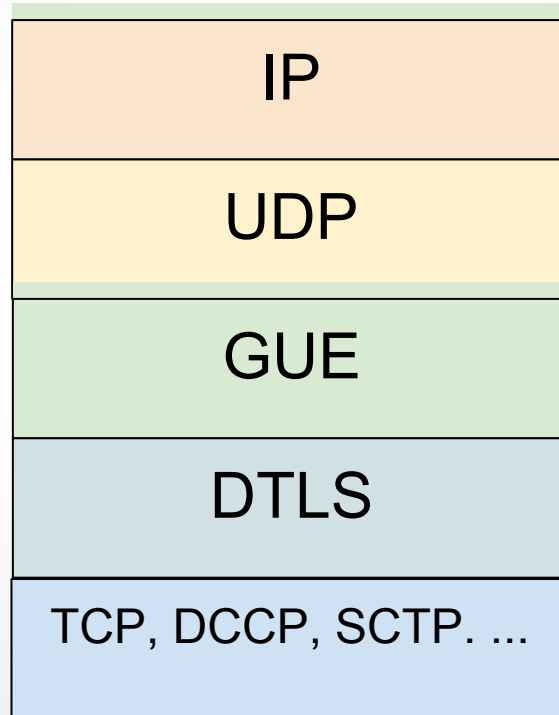
IETF96

Tom Herbert <therbert@fb.com>

Motivations

- Hide (encrypt) L4 headers from the network
 - Better security for end users
 - Undo protocol ossification
- Reduce dependency on client OSes
 - OS deployment problems on Android, iOS
 - Security here also
- Disassociated location
 - Cnxs viable across NAT remapping the network
 - Cnxs survive device address change in mobile

Header format



Elements

- 7-tuple to match connections
 - Similar to RFC6773 (DCCP/UDP)
 - Works well with connection UDP sockets
- Session identifier
 - 64-bit ID that is unique amongst all TOU connections
 - Session identifier negotiation
- Effects on L4 protocol
 - Connection lookup changed
 - Pseudo header checksum (don't include addresses)

Relationships

- SPUD/PLUS

- TOU is encapsulation of transport protocols
- Signaling to network could be in GUE

- QUIC

- Goal of TOU is to leverage existing L4 protocols
- Layering using existing security, encapsulation

- nvo3

- TOU is L4/UDP encapsulation
- GUE encapsulates for IP protocol number

Status

- draft-herbert-transport-over-udp-01
- Initial patches posted to Linux net-dev (basic TCP/UDP encapsulation)
- Client development underway (userspace TCP stack)
- IETF interest?