

End to End SCHC For IP Datagrams

draft-ietf-intarea-schc-ip-protocol-number-00

November 9, 2022

Robert Moskowitz

IP Protocol Number and more
for SCHC

Why review?

- Networks are complex and what if
 - Constrained link is within path
 - That is, end points 'know' of constrain, but have no control over it
 - All IP content is within a non-compressed security wrapper
 - e.g. Diet ESP – Want to compress security wrapper (>20 bytes!), but how to flag this, other than special SPI
 - e.g. DTLS – Much of UDP can be derived from DTLS

IF

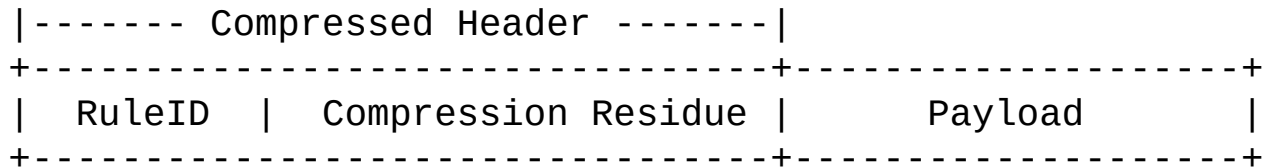
- IPv6 Next Header were SCHC
 - Rules can compress Transport and all up to security envelope
 - Can even indicate what Rules for within security envelope
 - As also E2E

IF

- IPv6 Next Header were SCHC
 - Effectively becomes the Transport Layer
 - To transport original Transport Layer, compressed
 - e.g. why have UDP CRC when ESP/DTLS have better?
 - Provide new and valuable transport functions
 - E2E Forward Error Correction (FEC) via SCHC
 - New work for Ipv6

HOW

- IPv6 Next Header for SCHC
 - Review of current Protocol Numbers – nothing to camp on
 - SCHC payload (RuleID may be zero bytes):



BUT

- Can we really introduce a new IPv6 Next Header value?
 - Will it just work or need router upgrades?
 - What might IP fragmentation result in?
 - Use SCHC fragmentation a prior

OTHER PIECES

- Turns out once head down this road, there is more
 - SCHC as an EtherType
 - Generic case for all the Ipwan special cases
 - IPv6 header compression on some 802 media
 - SCHC as an UDP port
 - Punch a firewall hole
 - Sigh. All my fault...

Next steps

- Review draft
 - Add Ethertype and UDP port requests
 - Then Start WG last call
- Questions?