IP Proxying Support for HTTP

draft-ietf-masque-connect-ip

Tommy Pauly, David Schinazi, Alex Chernyakhovsky, Mirja Kühlewind, Magnus Westerlund MASQUE IETF 113, March 2022, Vienna

Status

Aligned with updates to HTTP Datagrams and CONNECT-UDP

Open issues

MTU handling

Error handling

Need more interop testing!

MTU Handling

A small outer QUIC packet size may be too small to hold the minimum IPv6 MTU

Works with larger MTUs

QUIC packet, 1452 bytes

Max QUIC DATAGRAM payload, 1433 bytes

Max H3 IP datagram payload, 1431 bytes

IPv6 packet, 1280 bytes (minimum MTU)

Fails with minimum MTUs!

QUIC packet, 1200 bytes

Max QUIC DATAGRAM payload, 1181 bytes

Max H3 IP datagram payload, 1179 bytes

IPv6 packet, 1280 bytes (minimum MTU)

MTU Handling

Options for solutions:

Fail the CONNECT-IP request

Make packets reliable by placing them in DATAGRAM capsules

Add capsule signaling for errors about dropped packets

Require that QUIC connections start with at least ~1300 byte initials if they use CONNECT-IP

What approach should we take?

Error Handling

What should an endpoint do if it receives an IP packet that it doesn't allow? (Invalid source or destination address)

Silently drop

Drop and send ICMP

Send a capsule or close the stream

Next steps

Reach out if you're interested in testing interop!