HTTP/3
Cross-Pollination

HTTP/3 Charter

QUIC WG is chartered to produce

…a description of HTTP/2 semantics using QUIC, specifically with the goal of minimizing web latency using QUIC. This mapping will accommodate the extension mechanisms defined in the HTTP/2 specification.

Along the way, HTTP/3 has:
- adopted changes which might be beneficial to HTTP/2
- rejected some work as belonging to HTTP instead of QUIC

ALTSVC and ORIGIN

RFC 7838 defines Alternative Services
- ◦ Header for any HTTP version
- ◦ Frame for HTTP/2

RFC 8336 defines ORIGIN frame

HTTP/3 is not porting existing HTTP/2 extensions
- ◦ Ensuring that equivalent extension mechanisms exist, per charter
- ◦ Recommending that code points be assigned so as not to conflict with HTTP/2 uses

draft-bishop-httpbis-altsvc-quic re-defines these frames in HTTP/3 registries

GREASE in HTTP/2

Inspired by TLS 1.3, QUIC has followed the idea of greasing where possible
- ◦ Enforce "Ignore what you don't understand and keep going" by occasionally sending nonsense
- ◦ Avoid catastrophe by reserving some values specifically for use as nonsense

HTTP/3 reserves frame types and settings `0x1f * N + 0x21`

Recommends use of GREASE frame types for padding

Chrome ran experiment:
- ◦ Discovered intolerance in certain situations, filed as RFC 7540 erratum
- ◦ With more narrow scope, re-run successfully

draft-bishop-httpbis-grease defines GREASE points in HTTP/2