

A close-up photograph of a bumblebee on a pink flower. The bee is positioned in the center-left, facing right, with its head and thorax visible. It has a fuzzy, brown and black body and transparent wings. The flower is a light pink color with several stamens protruding from its center. The background is dark and out of focus. Overlaid on the left side of the image is the text "HTTP/3" and "Cross-Pollination" in a white, outlined font. A thin horizontal line is visible below the text.

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-quit 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

