Alt-Svc-bis Candidates

HTTP WG Interim
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Intro

- RFC7838 published in April 2016
  - *"This document specifies "Alternative Services" for HTTP, which allow an origin's resources to be authoritatively available at a separate network location, possibly accessed with a different protocol configuration."*
- Primary mechanism for upgrade to HTTP/3 (at least prior to HTTPS RRs)
- For the WG:
  - Which of these scope items are of interest?
  - Which direction should we take on some key design points?
  - What are preferred ways to work through design issues?

Why a "-bis" now?

- Clarifications (incorporate errata, "dont-be-clear"[1], etc)

- Fix issues identified with implementation experience

  - Some major implementations can't/won't implement as-specified

- Align and update relative to related proposed standards:

  - QUIC and HTTP/3, ORIGIN frame (RFC 8336), SVCB/HTTPS RR

- New features?

  - Fix/replace Alt-Used

  - Negotiation (Accept-Alt-Svc)

  - Synchronous Alt-Svc redirect (new 3xx code)

  - Path-scoped Alt-Svc (relies on Negotiation and Synchronous to be useful

[1] draft-pardue-httpbis-dont-be-clear-00.txt

General areas to fix/address

- Alt-Svc max lifetime and hijacking concerns

- Clients unable to implement "persist"

- ALPN handling ambiguity
  - Proposal: incorporate text from HTTPS/SVCB RR

- Alignment with HTTPS/SVCB RR and handling of ECH
  - Some text will be included in -06 of draft-ietf-dnsop-svcb-https-06, but it is non-prescriptive
  - HTTPS/SVCB RR draft nearing IETF LC: final review and feedback encouraged!

Fixing Alt-Used

- Problems / Opportunities:
  - Not consistently implemented by clients, resulting in problems for servers
  - Does not convey information from Alt-Svc record used
  - Unclear interaction with SVCB/HTTPS RR

- Challenge: balance privacy / anti-tracking, ability to implement, and usefulness for servers

- Many different design options...

Decision needed: QUIC ALTSVC frame

Options:

1.   Define a QUIC ALTSVC frame

2.   Deprecate HTTP/2 ALTSVC frame

   ● Only the Alt-Svc header would remain
   ● Simplifies!

New features?

- Accept-Alt-Svc to enable extensions requiring client opt-in
- New 3xx redirect for synchronous Alt-Used
- Path-scoped Alt-Svc (as a separate draft?)
- Illustration of potential:

To www.example.com:

```
        GET /foo/bar.mp4
        Accept-Alt-Svc: sync, path, altused2
        Host: www.example.com

        HTTP/1.1 3xx Alternative Server
        Alt-Svc: h2="foo.example.net:443"; ma=7200; sync; path="/foo/"
```

To foo.example.net:

```
        GET /foo/bar.mp4
        Accept-Alt-Svc: path, altused2
        Host: www.example.com
        Alt-Used-v2: alt-svc;h2="foo.example.net:443";path
```

Where next?

- Which of these scope items are of interest?

- Which direction should we take on some key design points?

- What are preferred ways to work through design issues?

- Preliminary discussion in google doc:
  - https://docs.google.com/document/d/1QNaXduqohACK93qLPpxkPJ2rHQMgWqUPL-DkZS11htQ/edit#
  - Snapshot: https://www.ietf.org/archive/id/draft-nygren-altsvc-fixes-00.html
- Plan to start one or more working drafts shortly
  - Repo with Markdown version of rfc7838: https://github.com/MikeBishop/alt-svc-bis