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”\(^\text{[1]}\), 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-purdue-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/1QNaXduqohACK93qLPpxkJ2rHQMrWqUPL-DkZS11hQtQ/edit](https://docs.google.com/document/d/1QNaXduqohACK93qLPpxkJ2rHQMrWqUPL-DkZS11hQtQ/edit)
- Plan to start one or more working drafts shortly
  - Repo with Markdown version of rfc7838: [https://github.com/MikeBishop/alt-svc-bis](https://github.com/MikeBishop/alt-svc-bis)