



HTTP/2.0

HTTPbis Working Group
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Agenda

- **What Are We Going to Do?**
 - Our New Charter
 - What is Success?
 - Ways we can Fail
- **How We'll Get There**
(in six easy steps)
- **Presentations**
- **Discussion**

What Are We Going to Do?

- **Define HTTP/2.0**
- **Define new authentication mechanism(s)**

What is "2.0"?

- **Version numbers are used for many things**
 - To marketing people, they're shiny things
 - To protocol engineers, they're used to indicate backwards compatibility
- **The fact that we're talking about "HTTP/2.0" does *not* mean that everything is on the table for discussion.**
- **HTTP/2.0 only signifies that the wire format isn't compatible with that of HTTP/1.x.**

Our New Charter

Particular goals of this effort include:

- Significantly **improved perceived performance** for common use cases (e.g., browsers, mobile)
- More **efficient use of network resources**; in particular, reducing the need to use multiple TCP connections
- **Ability to be deployed on today's Internet**, using IPv4 and IPv6, in the presence of NATs
- Maintaining HTTP's **ease of deployment**
- Reflecting **modern security requirements and practices**

In documenting this protocol, the Working Group **must**:

- Meet the goals specified above
- Make it possible to pass through a HTTP/1.1 message with reasonable fidelity; i.e., to implement a gateway to or from HTTP/1.1
- Consider the needs of a variety of HTTP implementers and users (such as "back-end" or "web api" uses of HTTP, servers and intermediaries)
- Address HTTP proxy and CDN infrastructure requirements

Changes to the existing semantics of HTTP are out of scope in order to preserve the meaning of messages that might cross a 1.1 --> 2.0 --> 1.1 request chain.

...and:

With regard to security requirements, in the initial phase of work on HTTP/2.0, new proposals for authentication schemes can be made. The WG will have a goal of choosing at least one scheme that is better than those available for HTTP/1.x. However, the WG might select zero schemes. In addition, non-selected schemes might be discussed with the IETF Security Area for further work there.

Elephant, meet Room

- **One protocol proposal already exists: SPDY**
 - Already implemented by some browsers, servers, Web sites, tools
 - We are NOT chartered to work on SPDY now
 - We'll discuss SPDY because it's here, but other proposals will be discussed too
 - If we do choose SPDY as a starting point, that doesn't mean it won't change

Our Task

- **Define new serialisation of HTTP on the wire**
 - Make sure it's faster* and nicer to the network
 - Don't change existing semantics
 - Make sure it *could* replace HTTP/1.1
 - Make sure it is (more) secure
- **Define one or more new authentication schemes, or explain why not**

* Definition of "faster" TBD

What is Success?

- **It's so good, HTTP/1.x *could* go away**
 - "Good" means for the whole Internet
- **Implementers have reason(s) to switch**
 - Latency is a big driver; may be others
- **End Users don't have to do anything**
- **Broad Implementation**

Ways we can FAIL

- **Defining the perfect protocol that doesn't get into implementations**
- **Spending five years fighting and gazing at our navels**
- **Only serving the needs of Web sites that serve N billion requests/day**
- **Not being deployable in corporates, over mobile, satellite, etc. (i.e., wherever HTTP/1.x is used)**
- **Trying to serve every possible use case**

How We'll Get There

- 1. Call for Proposals**
- 2. Gather Requirements**
- 3. Proposal Evaluation**
- 4. Expressions of Interest**
- 5. Consensus**
- 6. Re-Chartering**
- 7. (work)**

1. Call for Proposals

- **Asking for:**
 - New serialisations of HTTP semantics
 - New HTTP authentication schemes
- **Should take into account our charter reqs++**
- **draft-[your_name]-httpbis-[proposal_name]**
- **Starts now, Due 15 June 2012**

2. Gathering Requirements

- **Our charter contains core requirements**
- **We'll also gather additional ones**
- **Some MAY be reflected in new charter, but we likely won't finish before re-chartering**
- **We'll collect in the wiki:**
<http://bit.ly/http2reqs>
- **Starts now, ongoing**

3. Evaluating Proposals

- **The WG will discuss proposals on-list**
- **Discussions will be semi-structured to highly structured**
- **Each proposal will have a wiki page:**
`http://bit.ly/http2proposals`
`http://bit.ly/httpauthproposals`
- **Capture:**
 - Open questions / issues
 - How it addresses requirements (or fails to)

4. Expressions of Interest

- **After discussions, we'll solicit expressions of interest**
 - "I have implemented / am implementing"
 - "I would implement"
 - "I would implement if..."
 - "I would not implement because..."
- ***Implement* means build a server / client / intermediary / tool / run a service using it.**
- **Starts ~mid-June, done 1 July**

5. Consensus

- **Needed on:**
 - Proposals
 - Requirements
- **Charter requirements are paramount**
- **Broad support from implementers is key**
 - Avoiding hurt feelings is nice, but not required
- **Remember, proposals are for a start point, not where it'll finish up**

6. Re-Chartering

- **We'll write a charter proposal that:**
 - Identifies a starting point based upon a proposal
 - Nominates **some** requirements
 - Describes a precise scope of work
 - and what's out of scope
 - Imposes exit criteria

Presentations

- **Mike Belshe:** SPDY
- **Gabriel Montenegro:** Speed + Mobility
- **Willy Tarreau:** Intermediary Requirements

Discussion

- TLS Everywhere?
- Proxies
 - Interception?
 - Explicit and visible
 - Explicit and opaque
- Header Compression
- Upgrade from 1.0

Some Things You Should Know

- **Tao** - <http://www.ietf.org/tao.html>
esp. **"Getting Things Done in a Working Group"**:
 - Mailing list is key
 - No formal voting ("rough consensus")
 - Running code
- **Our Home:**
<http://trac.tools.ietf.org/wg/httpbis/trac/wiki>

What's Next?

- **#1 - finish HTTPbis**
- **See you on the mailing list**
 - It's friendly to prefix Subjects
 - E.g., "http2", "httpauth", "httpreq"
- **July 29 - August 3, 2012:
IETF 84 in Vancouver, BC, Canada**