HTTPbis Working Group
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Thursday, 29 March 12
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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.
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

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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:

• 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

  • Mailing list is key
  • No formal voting (“rough consensus”)
  • Running code

• **Our Home:**
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