

HTTPbis
Internet-Draft
Intended status: Informational
Expires: January 6, 2015

H. Nakajima
Keio University, W3C
July 5, 2014

HTTP/2 Interoperability Survey
draft-nakajima-httpbis-http2-interop-survey-00

Abstract

This document provides a survey of HTTP/2 [I-D.ietf-httpbis-http2] and HPACK [I-D.ietf-httpbis-header-compression] implementations and interoperability tests based on HTTP/2.0 Testing [I-D.trace-httpbis-http2-test]. Goals of this document are to help improving HTTP/2 specifications and HTTP/2 implementations and deployments.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on January 6, 2015.

Copyright Notice

Copyright (c) 2014 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to BCP 78 and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of

the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1. Requirements	2
2. Interoperability Test Target	2
3. Interoperability Test Area	3
3.1. Connect	3
3.2. Upgrade	3
3.3. Framing	3
3.4. Flow Control	3
3.5. Streams and Multiplexing	3
3.6. Header Compression	3
3.7. Connection Management	3
3.8. Stream Prioritization	3
3.9. Authentication	4
3.10. Server Push	4
3.11. TLS Negotiation	4
3.12. TLS Cipher Suite	4
3.13. Opportunistic Encryption	4
3.14. Alternative Services	4
4. Interoperability Test Results	4
5. Implementation Survey	4
6. Security Considerations	5
7. IANA Considerations	5
8. Contributors	5
9. References	5
9.1. Normative References	5
9.2. Informative References	5
9.3. URL References	5

1. Requirements

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14, RFC 2119 [RFC2119].

2. Interoperability Test Target

The following implementaions have been tested for interoperability test. Each implementation has been classified according to the roles "client", "server", "intermediary" which are defined in [RFC7230]. Table 1 shows name and roles of tested implementations.

Name	Roles
[nghttp2]	client,server,intermediary
[http2-katana]	client,server
[node-http2]	client,server
[MozillaFirefox]	client
[iiij-http2]	client
[AkamaiGhost]	intermediary
[Chromium]	client
[Twitter]	client,server
[http2-go]	client,server
[OkHttp2]	client
[mruby-http2]	client,server
[curl]	client
[cl-http2-protocol]	client,server
[Netty]	client,server
[Jetty]	client,server

Data from <https://github.com/http2/http2-spec/wiki/Implementations>

Table 1: Surveyed Implementations

3. Interoperability Test Area

3.1. Connect

Basic Connection Test is checking if the client and server(or intermediary) are able to establish HTTP/2 connection.

3.2. Upgrade

3.3. Framing

3.4. Flow Control

3.5. Streams and Multiplexing

3.6. Header Compression

3.7. Connection Management

3.8. Stream Prioritization

3.9. Authentication

3.10. Server Push

3.11. TLS Negotiation

3.12. TLS Cipher Suite

3.13. Opportunistic Encryption

3.14. Alternative Services

4. Interoperability Test Results

Table 2 shows interoperability test result.

	ngh ttp 2	http2 -kata na	node- http2	iiij- http2	Twit ter	mruby- http2	cl-http2 -protoco l
[nghhttp2]	\	x	x	o	o	o	o
[http2-k atana]	x	\	x	x	x	x	x
[node-ht tp2]	x	x	\	x	x	x	x
[Mozilla Firefox]	o	x	x	o	o	x	x
[Chromiu m]	o	x	x	o	o	x	o
[cl-http 2-protoc ol]	o	x	x	x	x	o	\

Vertical axis: Client, Horizontal: Server

Table 2: Interoperability Test Result - Connection

5. Implementation Survey

TBD.

6. Security Considerations

TBD.

7. IANA Considerations

This document makes no request to IANA.

8. Contributors

9. References

9.1. Normative References

[I-D.ietf-httpbis-header-compression]

Peon, R. and H. Ruellan, "HPACK - Header Compression for HTTP/2", draft-ietf-httpbis-header-compression-08 (work in progress), June 2014.

[I-D.ietf-httpbis-http2]

Belshe, M., Peon, R., and M. Thomson, "Hypertext Transfer Protocol version 2", draft-ietf-httpbis-http2-13 (work in progress), June 2014.

[I-D.trace-httpbis-http2-test]

Lai, M., Jian, C., and R. Trace, "HTTP/2.0 Protocol Test", draft-trace-httpbis-http2-test-00 (work in progress), September 2013.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

9.2. Informative References

[RFC7230] Fielding, R. and J. Reschke, "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", RFC 7230, June 2014.

9.3. URL References

[AkamaiGhost]

Akamai Technologies, Inc., "<https://github.com/http2/http2-spec/wiki/Akamaighost>", .

[Chromium]

The Chromium Projects,
"<https://sites.google.com/a/chromium.org/dev/spdy/http2>",
.

- [Jetty] The Eclipse Foundation, "<http://git.eclipse.org/c/jetty/org.eclipse.jetty.project.git/tree/?h=jetty-http2>", .
- [MozillaFirefox]
Mozilla Foundation, "<https://wiki.mozilla.org/Networking/http2>", .
- [Netty] The Netty project, "<http://netty.io/>", .
- [OkHttp2] Square, Inc., "<https://github.com/square/okhttp>", .
- [Twitter] Twitter Inc., "<https://twitter.com>", .
- [cl-http2-protocol]
Akamai Technologies, Inc., "<https://github.com/akamai/cl-http2-protocol>", .
- [curl] Stenberg, D., "<http://curl.haxx.se/>", .
- [http2-go]
"<https://github.com/Jxck/http2>", .
- [http2-katana]
Microsoft Open Technologies, Inc.,
"<https://github.com/Microsoft/http2-katana>", .
- [iiij-http2]
Internet Initiative Japan Inc.,
"<https://github.com/shigeki/interop-iiij-http2>", .
- [mruby-http2]
Matsumoto, R., "<https://github.com/matsumoto-r/mruby-http2>", .
- [nghttp2] Tsujikawa, T., "<https://nghttp2.org/>", .
- [node-http2]
Hurley, N., Belshe, M., and Y. Iwanaga,
"<https://github.com/molnarg/node-http2>", .

Author's Address

Hiroataka Nakajima
Keio University, W3C
5322 Endo
Fujisawa, Kanagawa
Japan

Phone: +81.466.49.3424
EMail: hiro@awa.sfc.keio.ac.jp