

Internet Measurements

Dr. Vaibhav Bajpai

1. Measure Adoption
2. Measure Performance
3. Measure Disruption
4. ...

Seminar Webpage: <https://goo.gl/M51fPJ>

HTTP2 adoption

Is The Web HTTP/2 Yet?

<http://isthewebhttp2yet.com/>

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Abstract. Version 2 of the Hypertext Transfer Protocol (HTTP/2) was finalized in May 2015 as RFC 7540. It addresses well-known problems with HTTP/1.1 (e.g., head of line blocking and redundant headers) and introduces new features (e.g., server push and content priority). Though HTTP/2 is designed to be the future of the web, it remains unclear whether the web will—or should—hop on board. To shed light on this question, we built a measurement platform that monitors HTTP/2 adoption and performance across the Alexa top 1 million websites on a daily basis. Our system is live and up-to-date results can be viewed at [1]. In this paper, we report findings from an 11 month measurement campaign (November 2014 – October 2015). As of October 2015, we find 68,000 websites *reporting* HTTP/2 support, of which about 10,000 *actually* serve content with it. Unsurprisingly, popular sites are quicker to adopt HTTP/2 and 31% of the Alexa top 100 already support it. For the most part, websites do not change as they move from HTTP/1.1 to HTTP/2; current web development practices like inlining and domain sharding are still present. Contrary to previous results, we find that these practices make HTTP/2 more resilient to losses and jitter. In all, we find that 80% of websites supporting HTTP/2 experience a decrease in page load time compared with HTTP/1.1 and the decrease grows in mobile networks.

http://dx.doi.org/10.1007/978-3-319-30505-9_17

<https://tools.ietf.org/html/rfc7540>

Internet Engineering Task Force (IETF)
Request for Comments: 7540
Category: Standards Track
ISSN: 2070-1721

PROPOSED STANDARD
[Errata Exist](#)
M. Belshé
BitGo
R. Peon
Google, Inc
M. Thomson, Ed.
Mozilla
May 2015

Hypertext Transfer Protocol Version 2 (HTTP/2)

Abstract

This specification describes an optimized expression of the semantics of the Hypertext Transfer Protocol (HTTP), referred to as HTTP version 2 (HTTP/2). HTTP/2 enables a more efficient use of network resources and a reduced perception of latency by introducing header field compression and allowing multiple concurrent exchanges on the same connection. It also introduces unsolicited push of representations from servers to clients.

This specification is an alternative to, but does not obsolete, the HTTP/1.1 message syntax. HTTP's existing semantics remain unchanged.

Support by Time

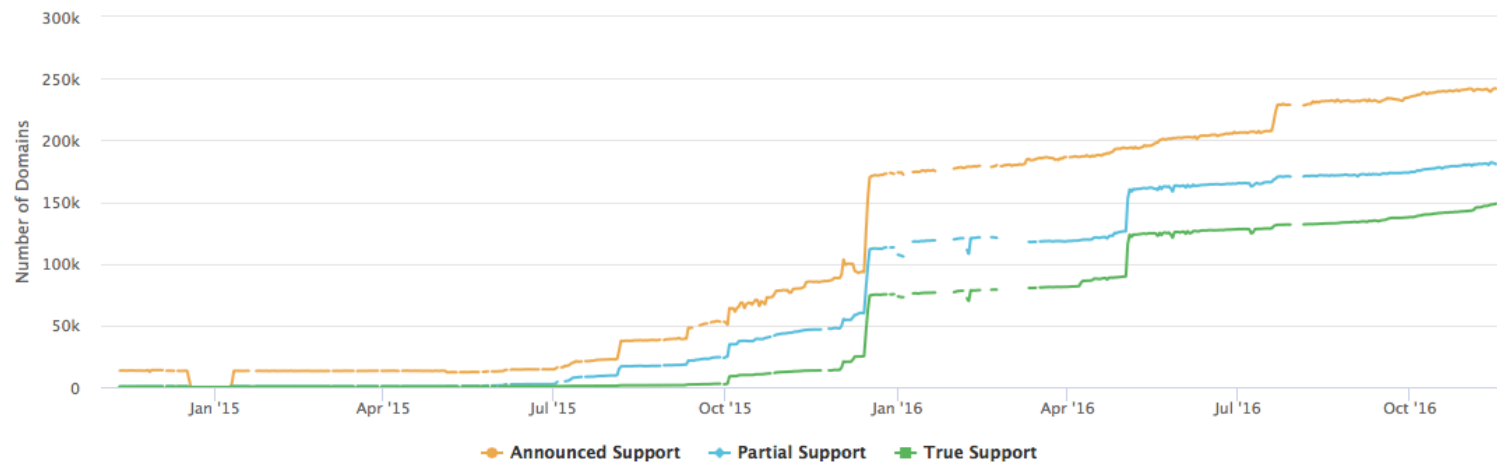
Announced Support

Partial Support

True Support

Announced, Partial, and True Support

Click and drag in the plot area to zoom in



IPv6 adoption

<https://tools.ietf.org/html/rfc2460>

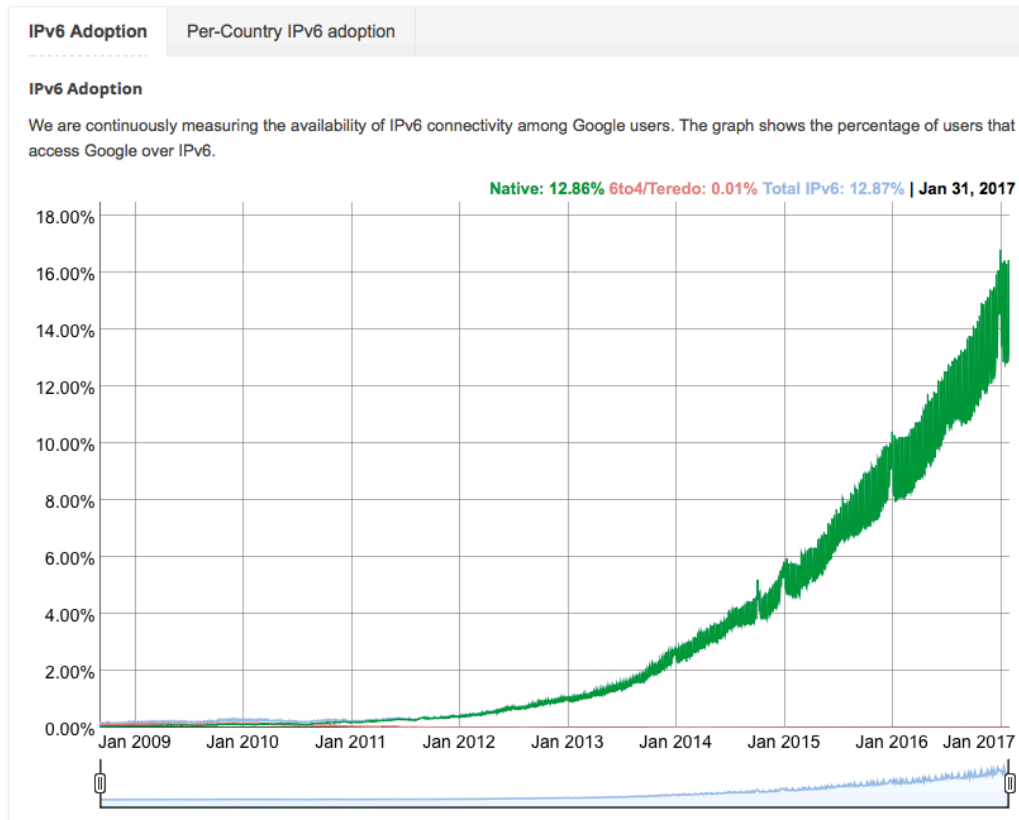
Updated by: [5095](#), [5722](#), [5871](#), [6437](#), [6564](#), [6935](#),
[6946](#), [7045](#), [7112](#) DRAFT STANDARD
Errata Exist
Network Working Group S. Deering
Request for Comments: 2460 Cisco
Obsoletes: [1883](#) R. Hinden
Category: Standards Track Nokia
December 1998

<https://goo.gl/Qtkr8v>

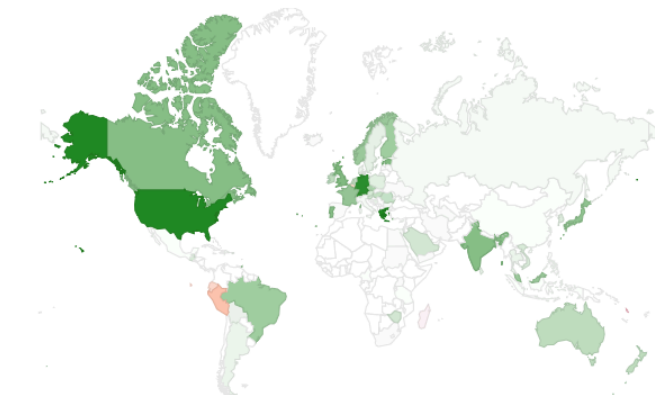
Internet Protocol, Version 6 (IPv6) Specification

Status of this Memo

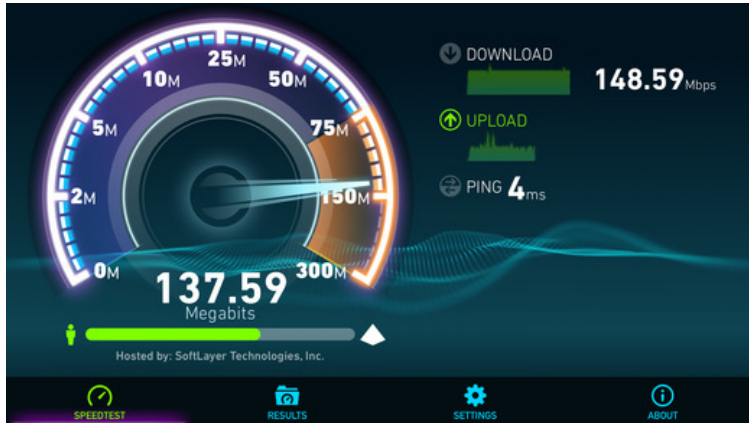
This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.



Per-Country IPv6 adoption



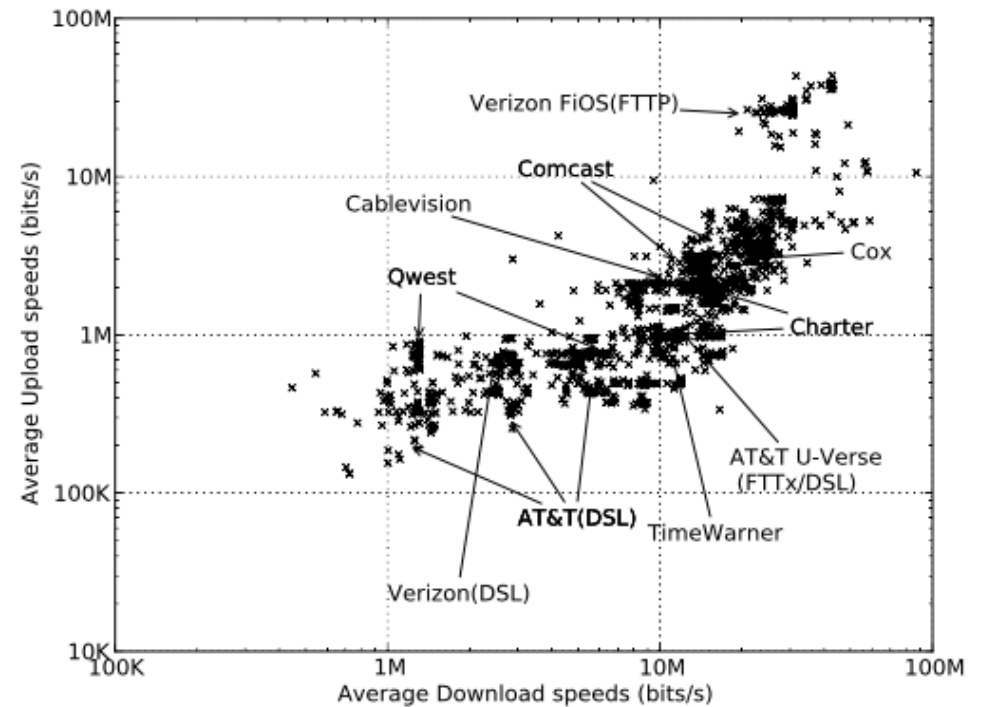
Measuring Broadband Performance



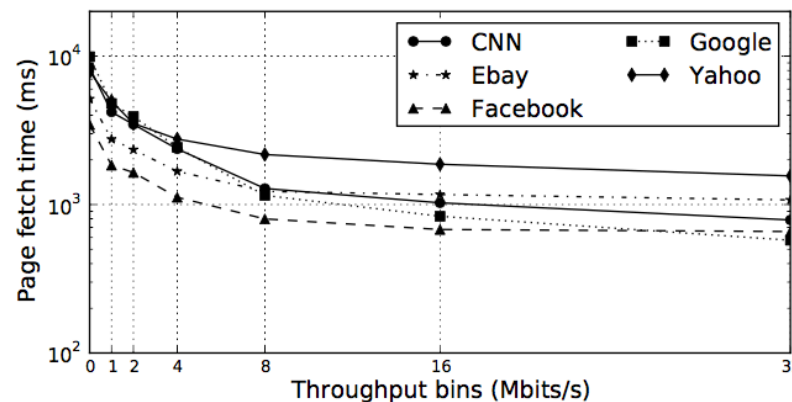
<http://speedtest.net>



<https://www.samknows.com>



<https://doi.org/10.1145/2043164.2018452>

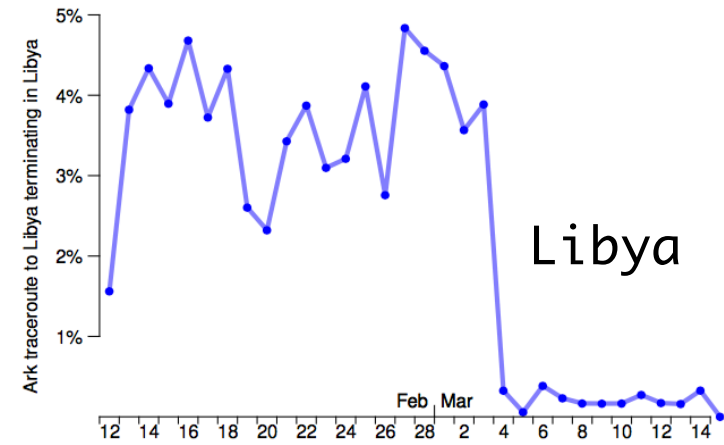
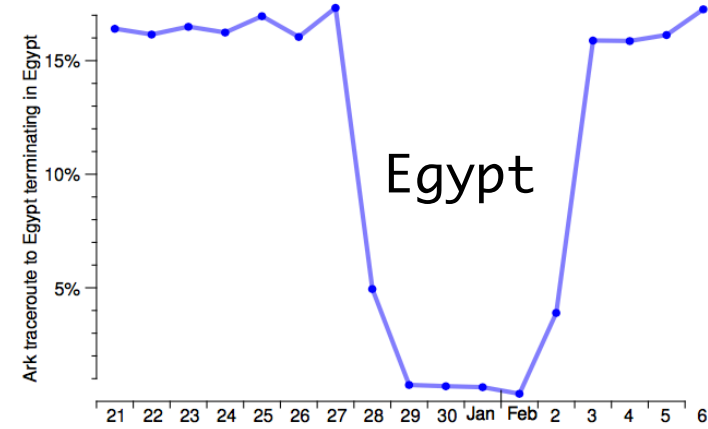


(a) Page load times

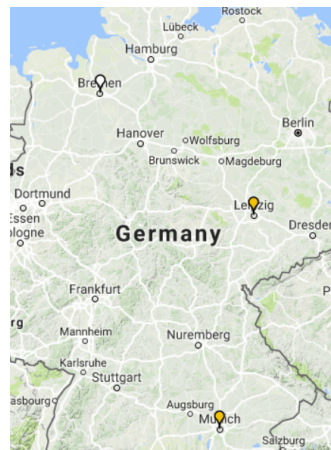
<https://doi.org/10.1145/2504730.2504741>

Measuring Internet Disruptions

<http://www.caida.org/projects/ark/>

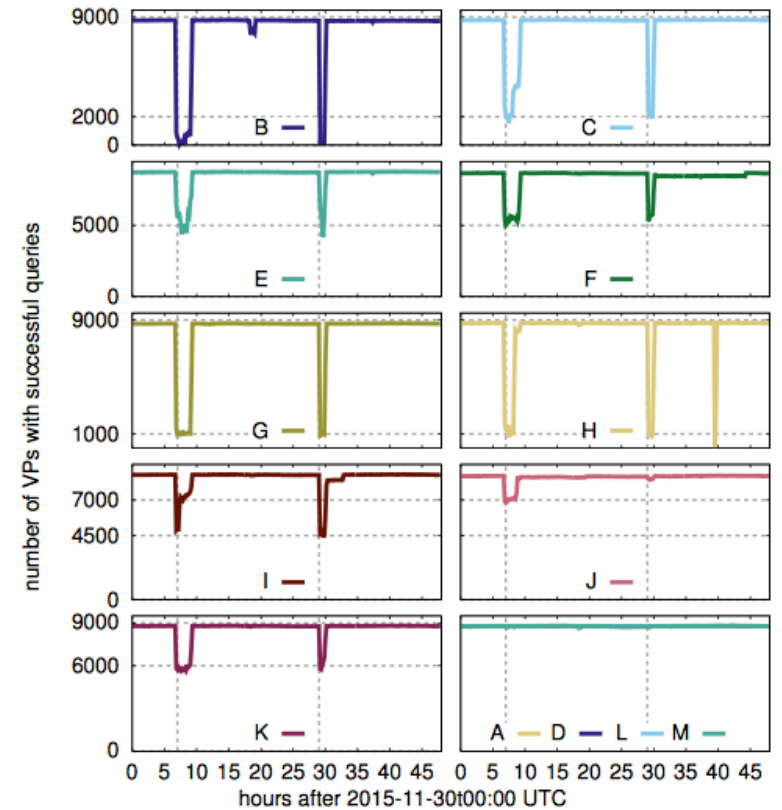


~170 raspberry PI monitors



<https://doi.org/10.1145/2068816.2068818>

Measuring Internet Disruptions



<https://doi.org/10.1145/2987443.2987446>

<https://atlas.ripe.net>

~9.1K connected probes

<https://atlas.ripe.net/probes/784>

<https://atlas.ripe.net/probes/6159>

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www.vaibhavbajpai.com