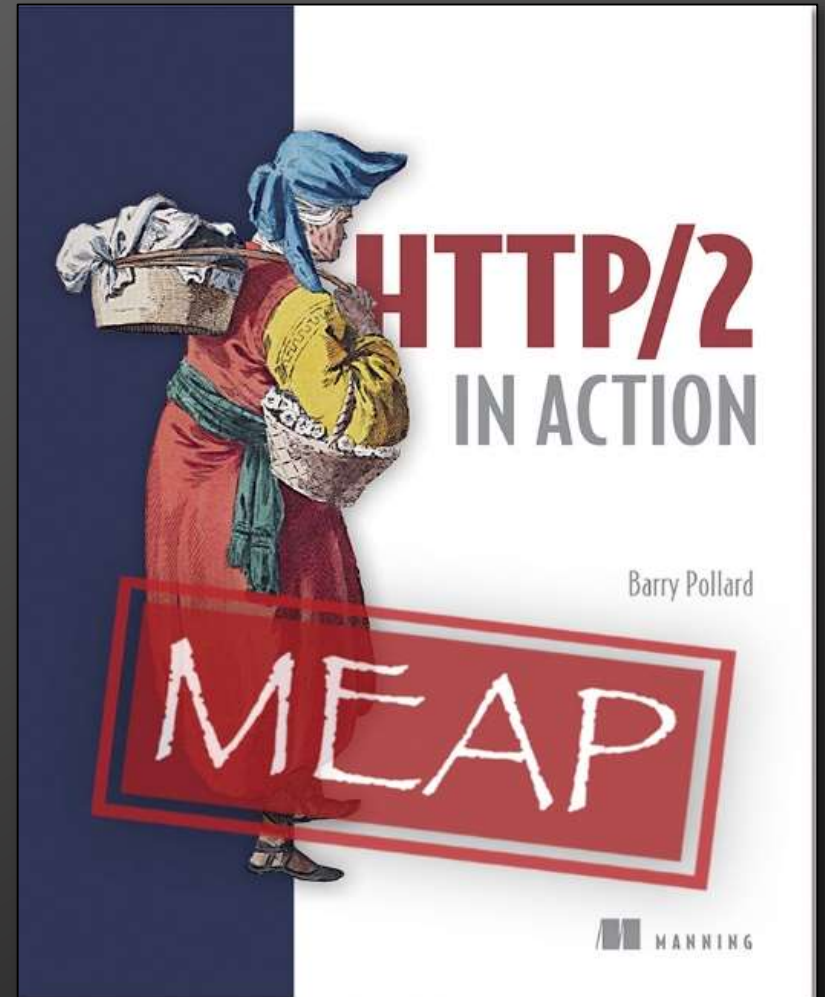


Learn HTTP/2

With *HTTP/2 in Action*—get it for 42% off with code `slpollard` at manning.com.



Learn the new web standard

HTTP defines how browsers and other tools interact with websites. HTTP/2 is the first major upgrade in 20 years!

If you want to learn about this fundamental web technology, then *HTTP/2 in Action* is the ideal place to start.

Whether you are new to web development and web servers, or an old hand, this book will make sure you get up to speed in HTTP/2 quickly!

1

Web Technologies and HTTP

This chapter covers

- Understanding how the web works
- What is HTTP?
- The Syntax and History of HTTP
- Introduction to HTTPS
- Tools for viewing, sending and receiving HTTP messages

This chapter gives you the background of how the web works today, and explains some key concepts necessary for the rest of this book to make sense, and then introduces HTTP and the history of the previous versions. I expect many of the readers of this book to be familiar with a lot of what is discussed in this first chapter, but I would encourage you not to skip it completely and use this as an opportunity to refresh yourself on the basics.

1.1 How the web works

The Internet has become an integral part of everyday life. Shopping, banking, communication and entertainment all depend on the Internet and with the growth of the Internet of Things (IoT), more and more devices are being put online where they can be accessed remotely. This is made possible by several technologies and Hypertext Transfer Protocol (HTTP) is a key method of requesting access to remote web applications and resources. While most people understand how to use a web browser to surf the internet, few truly understand how this actually works, why HTTP is such a core part of web, and why the next version (HTTP/2) is causing such excitement in the web community.

Stay ahead of the curve

HTTP/2 is here and available now. Adoption is rapid with many websites already implementing it—so it is a great time to learn.

HTTP/2 is all about improving performance without requiring many of the workarounds needed under HTTP/1.1. *HTTP/2 in Action* will show you why HTTP/2 is a necessary step forward, and what website owners can do to take advantage and make their websites faster!

3.1.1 HTTP/2 Support on Browser Side.

HTTP/2 support on the browser side is very strong. Nearly every browser from Internet Explorer 11 upwards supports this as shown by the caniuse.com page for HTTP/2 shown in Figure 3.1.



An all-encompassing resource

CHROME NET-INTERNALS

The easiest way to see individual HTTP/2 frames is to use Chrome's net-internals page. Simply open a Chrome browser and type the following into the URL bar:

```
chrome://net-internals/#events&q=type:HTTP2_SESSION
```

This will start to capture all the HTTP/2 session information. If you then open a HTTP/2 site (e.g. <https://www.facebook.com>) in another tab, then you will see a number of HTTP/2 sessions shown up as shown in Figure 4.3, which can then be clicked on to see the underlying HTTP/2 messages.

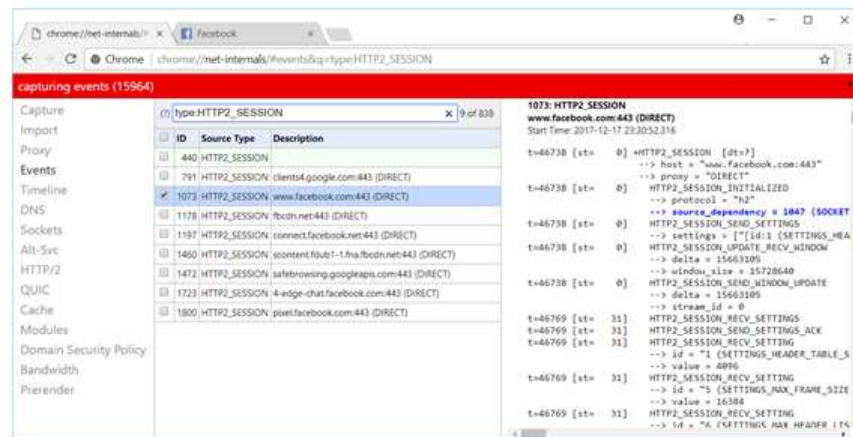


Figure 4.3 viewing HTTP/2 frames in Chrome

HTTP/2 in Action introduces HTTP/2 and teaches you everything you need to use it effectively – including a variety of tools you can use to debug this new protocol.

Presenting key concepts such as frames, streams, and multiplexing, and how they affect the performance and behavior of your web sites.

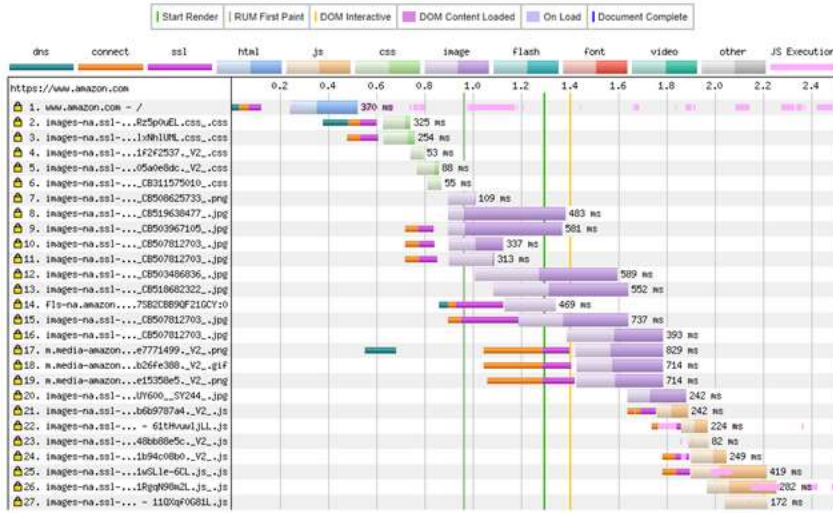
Learn HTTP/2 – by doing

2.4 Real World Examples

So how big a problem is all this? We have shown that HTTP/1.1 is inefficient for multiple requests, but how bad is that really? Is this really noticeable?

2.4.1 Example Website 1 - Amazon.com

We have talked very theoretically up until now, but let's now look at a real-world example. If we take www.amazon.com as a well-known website, and run it through www.webpagetest.org we get the following waterfall diagram shown in Figure 2.9. This diagram demonstrates many of the problems with HTTP/1.1, so I will explain it in detail.



The author of *HTTP/2 in Action* is an experienced professional software developer with a keen interest in the **practical** side of technologies. So this book aims to show the benefits of HTTP/2 with real world examples.

With the ready-to-implement tips on everything from the various ways to add HTTP/2 to your site, debugging to server push, this is an invaluable resource for those interested in this new technology.

If you want to know more,
read the first chapter of
HTTP/2 in Action [here](#).

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