

Preface

*The best way to predict
the future is to invent it.*

— Alan Kay

On a monthly basis, Netcraft checks a representative set of web servers around the world to gather statistics about the server market. For its *Web Server Survey*¹ in April 2000 (see Figure 0.1 on the following page), more than 14 million web sites were contacted and their server software identified by parsing the HTTP responses.

According to Netcraft, as of April 2000, more than 60 percent of the servers were based on Apache — that is, more than 8 million web servers. Apache has been the market leader for more than three years now and has put a large distance between itself and its competitors (Microsoft Internet Information Server: 21 percent; Netscape server family and various others: less than 10 percent each). In other words, Apache is the definitive, world-leading web server software on the market and a drop in popularity is not expected in the next 12 months. On the contrary, its popularity is increasing.

Apache is the
world-leading web
server.

The Purpose and Audience of This Book

Most webmasters who must manage and maintain an Apache server installation are already familiar with Apache, either through the online available documentation from the *Apache Software Foundation* (ASF) or through the various Apache books on the market. The purpose of this book is to provide a concise but, fairly complete reference to the various Apache knobs and levers with which the webmaster is confronted at compile time, configuration time, and runtime. Thus the audience of this book consists of webmasters who are already familiar with Apache, but who need a reference on a daily basis.

This book is a
reference for people
who already know
Apache under UNIX.

¹<http://www.netcraft.com/survey/>

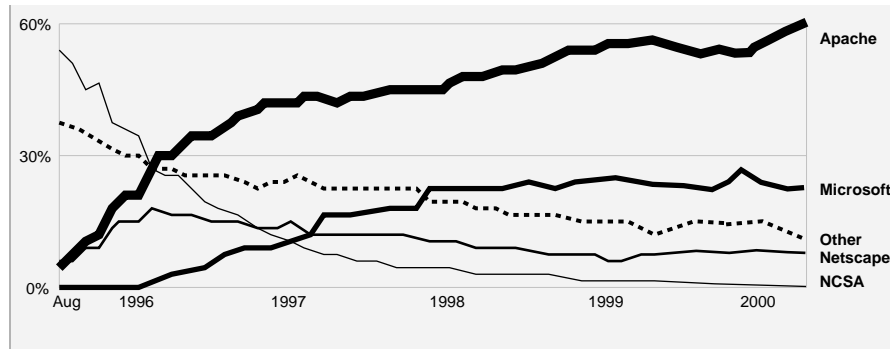


Figure 0.1: The Netcraft Web Server Survey through April 2000

This book does not cover all third-party modules, Apache optimization techniques, or use of Apache under non-UNIX platforms.

The book does not purport to explain Apache or to describe all referenced material in great detail. Instead, it serves as a companion to the various Apache tutorial-style books on the market. As a result, the book does not cover special topics like existing third-party modules, optimization of Apache under runtime, or use of Apache under non-UNIX platforms. If you are interested in those topics, consult one of the tutorial-style books.

Organization of This Book

This book is organized into six chapters.

Chapter 1, *Introduction*, discusses the history and evolution of the Internet, hypertext, and the World Wide Web and describes how Apache and the ASF fit into this world. This chapter is intended to provide a quick reference to historical Apache-related numbers and introduce the Apache world.

Chapter 2, *Apache Functionality*, considers the Apache program architecture, which consists of a core part and various extensional modules. A concise reference to the standard Apache modules follows this discussion. This chapter is intended to provide a compact overview of the Apache module world.

Chapter 3, *Building Apache*, covers building the Apache package from the distributed source codes. It first shows a typical Apache installation procedure step by step, then provides a reference to all *Apache Autoconf-style Interface* (APACI) options, and finally discusses some special configuration issues like the *Dynamic Shared Object* (DSO) facility. This chapter is intended to help you install a reasonable Apache instance.

Chapter 4, *Configuring Apache*, focuses on the runtime configuration of Apache. It introduces the gory details of the Apache configuration files and contexts, then includes a complete reference of all configuration directives

Chapters 2 and 4 are the primary reference chapters.

provided by all standard Apache modules. This chapter is the heart of this book.

Chapter 5, *Running Apache*, discusses ways to run the Apache web server and provides a reference to all command-line options. It is intended to provide the webmaster with a quick reference for the regular Apache start-up and restart situations.

Chapter 6, *Apache Resources*, lists the various other Apache resources that you can consult to obtain details on a topic. It provides references to the most important Apache resources on the Internet.

How to Read This Book

The most reasonable approach to reading this book is to first read the non-reference parts once and then to read the remaining parts only on demand. The first reading depends on your existing skill:

- **You are familiar with Apache in general, but you are not an expert.**

We recommend that you first read Chapter 1 for an introduction to the material, then read the first sections of Chapters 2 and 3 to refresh your knowledge of the Apache module architecture and the *APACI* facility. Next, very carefully read the first nonreference sections of Chapter 4, trying to understand how the Apache configuration contexts work. Finally, glance over the remaining chapters, which contain material that you can find later on demand.

Everyone should read at least the first part of chapter 4 as a refresher course on Apache configuration contexts. The remaining parts can then be read on demand.

- **You are an Apache expert.**

We recommend that you first read Chapter 1 to refresh your Apache background, followed by a careful reading of the first nonreference part of Chapter 4 to refresh your knowledge of Apache configuration context handling. Finally, glance over the remaining parts of the book, which contain material that you can find later on demand.

Your subsequent readings should occur only on demand or if you are interested in more details. Refer to Chapter 2 if you are searching for details on an Apache module, Chapter 3 if you want details on *APACI* options, Chapter 4 if you are seeking details on particular Apache configuration directives, Chapter 5 if you are searching for a command line directive, and Chapter 6 if you need more help.

Typographic Conventions

We use *italic* text for special names and other highlighted terms. We use `constant width` text to indicate configuration directives, commands entered at the command line, and other computer code.

Companion Web Site and Feedback

This book has its own dedicated companion web site at www.apacheref.com.

This book has a companion web site at <http://www.apacheref.com/>, maintained by this book's author. Here you can find online versions of the reference materials and resource lists in this book, errata, and other information about this book and Apache.

Please address comments and questions concerning this book and its companion web site via e-mail directly to the author at rse@apacheref.com.

Acknowledgments

This book was sometimes nasty to write, because I wrote it at the same time that I had many very time-consuming tasks to complete for my computer science study. Additionally, while I assembled the reference information, I often had to fix bugs in the Apache source or the online documentation first. Unfortunately, this endeavor greatly delayed the creation of this book.

The greatest thanks go to my wife Daniela, because she was always very insightful and let me hack the whole day and even on weekends without complaining. She was also the person who regularly forced me to work on this book when I became lost in hacking on other things.

Additional thanks go to reviewers Mark J. Cox, Roy T. Fielding, Ken Coar, Jim Jagielski, Shane Owenby, Sander van Zoest, Stefan Winz, Gautam Guliani and Christian Reiber. I also thank Mary T. O'Brien and John Fuller from Addison-Wesley for the original idea for this book and the long-term project assistance. Finally, thanks go to Kathy Glidden and her team at Stratford Publishing Services for their help in proofreading and publishing the book.

— Ralf S. Engelschall,
July 2000, Munich, Germany