Dave Taylor

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Timesaving guide to learning the UNIX operating system

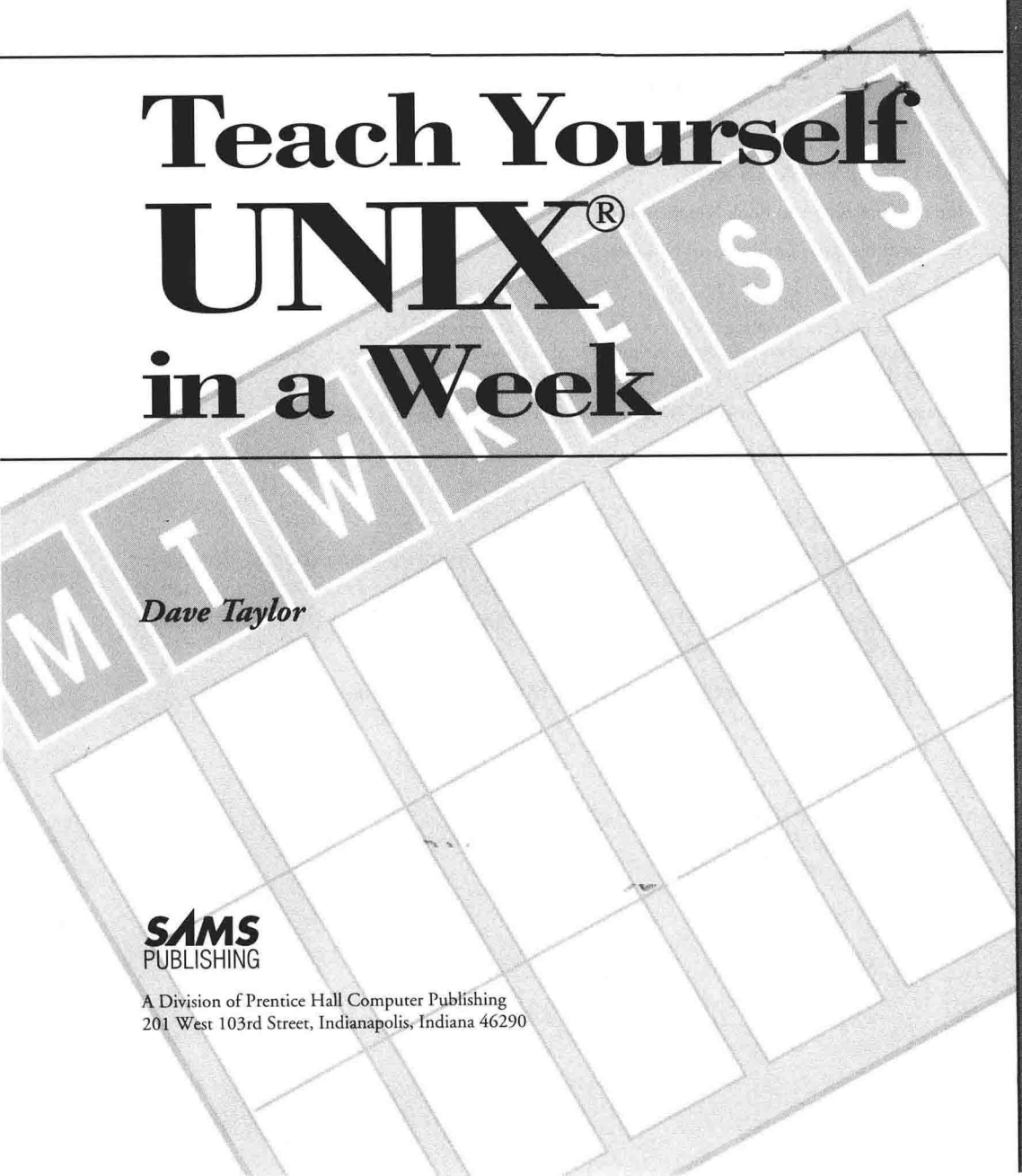
Highlights the features, commands, and tools of all the major versions

Expanded coverage of file handling, text editors, shells, job control, and the Internet

TEACH YOURSELF UNIX® IN A WEEK

Teach Yourself UNIX® in a Week

Dave Taylor



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About This Book

This book starts where you are likely to start: at the point when you turn on your system and something new shows up. You might be in a state of panic, shock, or total excitement.

This book provides hands-on, task-oriented projects, useful tips, and technical information to get you started using your UNIX system. This book takes you from elementary operating system tasks, such as logging on and creating files, to advanced techniques, such as programming in C on a UNIX system and surfing the Internet. Everything in this book, by orientation and example, has the goal of assisting you in accomplishing everyday tasks.

Who Should Read This Book

Whether you need help with a specific UNIX task or you want a step-by-step tutorial on every aspect of the operating system, you will find what you need in this book. For beginners, there's coverage of basic concepts of working in an operating system and the basic techniques of using UNIX. For readers who are more technically advanced, there's reference information about various aspects of using UNIX. For people who need just to "dip into" the book and learn about a specific topic, the clear, task-oriented organization makes doing so fast and easy.

Conventions

Comment: These boxes will highlight interesting information to make your UNIX experience more enjoyable.

Don't Skip This: These boxes focus your attention on necessary information, problems, or side effects that can occur in specific situations.

Shortcut: These boxes show you how to streamline your approach to a task.

Each task has three parts—Description, Action, and Summary—to clarify your understanding of the topic. To help you review what you have learned, each chapter ends with a chapter summary, key terms, and questions (with answers provided in an appendix).

In this book, lines of output (what the computer shows you) are shown in a distinctive monospace type, the prompt `%` for example. What you enter, a command for example, is represented in monospace bold, `% ls -CF /`. Words or letters in monospace italic are placeholders; you should replace, for example, the words *command-number* in `!`*`command-number`* with the real command number.

The use of the Control key (sometimes labeled Ctrl on your keyboard) is represented in several ways. For example, Control-C, Ctrl-c, and ^c each mean you should press the Control key and, while holding it down, press the C key.

In several chapters, the examples show a part of a computer screen display. When the full screen is required to explain something, it will be shown. A smooth edge will indicate the edge of the display, and a jagged edge will indicate that the rest of the display has been omitted.

Teach Yourself UNIX® in a Week

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Even after lots of writing in the last few years, a project like *Teach Yourself UNIX in a Week* isn't done without many hours of individual labor. To my surprise, though, this book was a lot of fun to write, significantly due to the unflagging support of Linda Dunlap, without whom I would have stayed up even later each night, toiling over my Macintosh and gradually sinking into incoherence.

Tai Jin, Marvin Raab, and James Armstrong were a great help as I encountered information needing confirmation, further elucidation, or just another way to look at things. All of these guys answer e-mail incredibly quickly.

The team at Sams Publishing also helped make this an enjoyable, if rather fast-paced project. Particularly, I'd like to acknowledge the support of Jordan Gold, Scott Palmer, and Rosemarie Graham, who allowed my jokes through the editing process without more than a token protest or two. Marc Nehl was also invaluable as technical editor on this project, catching the errors in the nick of time.

Finally, any intense project requires a break now and then, and I'd like to graciously thank the injections of humor supplied by Crow, Tom Servo, Gypsy, Joel, and Mike (the new guy), trapped on the Satellite of Love.

About the Author

Dave Taylor has been working with UNIX since 1980, when he first logged in to a Berkeley-based DEC VAX computer while an undergraduate at the University of California, San Diego. Since then, he's used dozens of different UNIX systems and has contributed commands incorporated into HP's HP-UX UNIX operating system and UC Berkeley's BSD 4.4 UNIX release. His professional experience includes positions as research scientist at Hewlett-Packard Laboratories in Palo Alto, California; software and hardware reviews editor for *SunWorld Magazine;* interface design consultant for XALT Software; and president of Intuitive Systems. He has published more than 300 articles on UNIX, Macintosh, and technical computing topics, and also the book *Global Software*, addressing the challenges and opportunities for software internationalization from a marketing and programming viewpoint. He is well-known as the author of the Elm Mail System, the most popular screen-based electronic mail package in the UNIX community.

Currently he is working as a consultant for Intuitive Systems in West Lafayette, Indiana, while pursuing a graduate degree in Educational Computing at Purdue University and working on a new interface to the FTP program.

Introduction

If you're reading this introduction, you are either someone who knows very little about UNIX and wants to learn, or someone who knows something about the system and desires to expand your knowledge and perhaps pick up a trick or two along the way. Either way, you've found the right book!

I'll be frank. There are an incredible number of introductory UNIX books, each purporting to teach you UNIX. Usually these proceed either by reproducing the confusing UNIX electronic documentation within (even some UNIX experts don't know *all* the options to *all* the commands in the system) or by presenting such a small piece of the overall UNIX system that they don't really teach much at all.

This book falls into neither category. In *Teach Yourself UNIX in a Week*, you'll find 21 chapters that explain—and demonstrate—hundreds of UNIX commands, teaching and explaining the most valuable options of each command. There are lots of tips, historical notes, and even a sprinkling of pronunciation tips to make sure that when you talk with your UNIX friends, you'll sound like an expert too. If that doesn't whet your appetite, you also learn about how to use the various programming tools on UNIX, how to interact with friends and associates through the Internet, and even how to use some of the Information Highway vehicles, including Usenet, Gopher, Archie, the World-Wide Web, and WAIS.

To get the most out of this book, you will want to have a UNIX computer at your disposal. In particular, the examples will be considerably more meaningful if you can type along, comparing your output with that shown, and reading the explanation of what's on your computer screen. To reinforce the most important ideas, there are some questions ending each lesson; you won't get very far without a computer to explore the possible answers.

If you don't have a UNIX computer and are just interested in learning about the operating system, you can still pick up a great deal of information in this book. In particular, that's when the extensive examples will prove valuable: without touching your own keyboard, you will be able to see exactly what would be typed at the command prompt, what the results of each command are, and even catch some mistakes that I make along the way to show what happens when things go wrong with UNIX.

Before You Start

Before you begin your journey towards becoming a UNIX expert, read and keep in mind this advice:

1. **Don't be intimidated!** UNIX isn't really hard if you learn the underlying reasoning behind the system design and command design as you go along.
2. **Write in this book!** If you see a sample command that strikes you as particularly helpful, snap a paper clip on the page, circle the command, and show your colleagues or friends. Better yet, keep a pad next to your computer and scribble down these commands as a reference.
3. **Personalize your computer!** It never fails to amaze me how people talk about personal computers and completely miss that the most valuable aspect of *personal* computers is being able to make them do what *you* want, to personalize them. UNIX is like an eager puppy dog in this regard. Keep thinking about how you would like to personalize the interface, and, by the end of this book, you will know how to create new commands, rename existing commands, and even save yourself considerable typing by creating shortcuts and abbreviations.
4. **Have fun!** That learning has to be difficult is a myth perpetuated by a school system locked in bureaucracy. It doesn't have to be difficult, and an important goal I had while writing this book was to create an enjoyable tutorial that would give you the chance to chuckle, smile wryly, and along the way occasionally say, "Really? That's weird."

I have used UNIX for 15 years now, and I have used each and every command in this book more times than I want to consider. Even with that experience, however, I learned some slick new tricks as I went along. If you're already a UNIX expert, you'll learn some new stuff too.

If you're just learning, you're in the best position of all. You're ready to learn how to work productively within the UNIX environment, and you've put a week aside to *Teach Yourself UNIX in a Week!*

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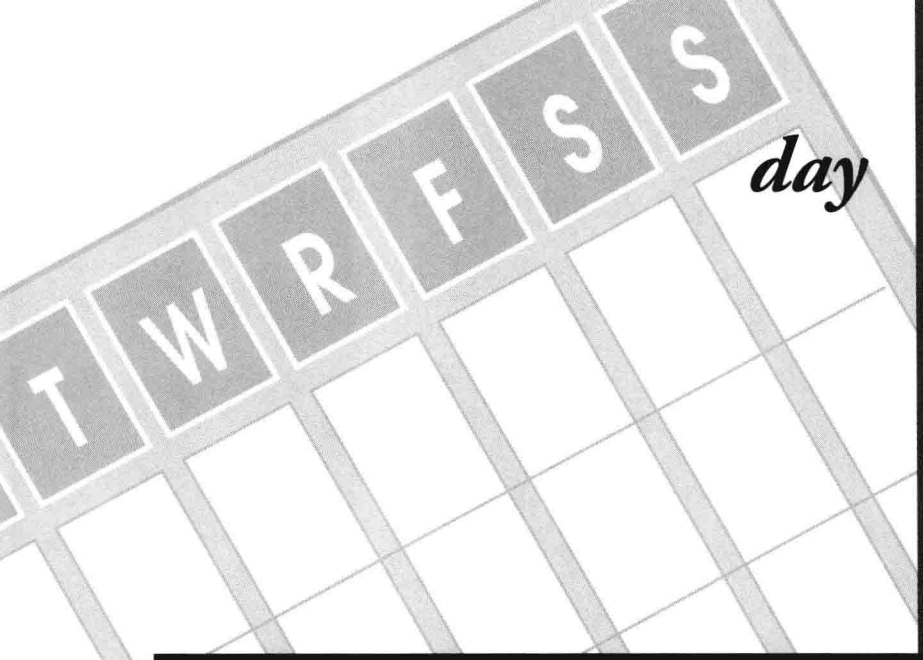

day **1**

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