BOOK REVIEW

Michael W. Lucas's *Absolute FreeBSD* (3rd Edition): A Scholar's Review

BY COREY J. STEPHAN

On the penultimate page of *Absolute FreeBSD: The Complete Guide to FreeBSD* (3rd Edition), Michael Lucas suggests that the best way for a newcomer to this operating system to find a niche in which to contribute is to answer a simple question: "What do you do?" My answer is equally simple: Like Mr. Lucas, I research, write, and teach non-fiction, albeit as a historical scholar rather than as a system administrator. It seems fitting, then, that my second contribution to the FreeBSD Journal is a review of Lucas's 617-page guide to the operating system that congregates us nerds of different types.

Even as a quintessentially critical academic, I struggle to find negative comments to make about *Absolute FreeBSD*. The only pressing one pertains to the volume's subtitle, "*The Complete Guide to FreeBSD*." The volume is not lacking; to the contrary, it contains precisely what it ought to contain for its purpose as a guidebook for system administrators. However, in my opinion, a *complete* guide to this operating system should contain several chapters on desktop usage. Moreover, the use cases for FreeBSD outside of traditional server and desktop environments are growing. Low-powered, single-board ARM computers, such as those produced by Pine64 and the Raspberry Pi Foundation, are often amateur tinkerers' first points of contact with Unix-like operating systems. A nod toward the various avenues by which neophyte Beasties who are not sysadmins typically start to grow our horns would be a boon to *Absolute FreeBSD*'s eventual fourth edition.

Of course, 'so-and-so should have written such and such' is the cheapest criticism one can make of another's published writing, and the fact that it is the only one that I have for *Absolute FreeBSD* previews my overall assessment. *Absolute FreeBSD* is a grand pedagogical achievement, both for Lucas himself and for the FreeBSD project writ large. I read every word on all 617 pages. Especially in the early chapters, there were times when it was difficult for me to return *Absolute FreeBSD* to its place on my bookshelf to resume professional or familial duties.

The success of *Absolute FreeBSD* has little to do with its technical correctness. With any published work of non-fiction, accuracy is the minimum standard for acceptability. *Absolute FreeBSD* is in its third edition from a press that specializes in computer science, and it carries the imprimatur of four of FreeBSD's luminaries: Marshall Kirk McKusick, John Baldwin, Benno Rice, and George V. Neville-Neil. Thus, its factual reliability is self-evident. Yet no one would (or should) sit down to read every chapter of the reliable but strictly utilitarian and encyclopedic *FreeBSD Handbook*. Instead, *Absolute FreeBSD* has a lively character that makes it downright pleasant to read.
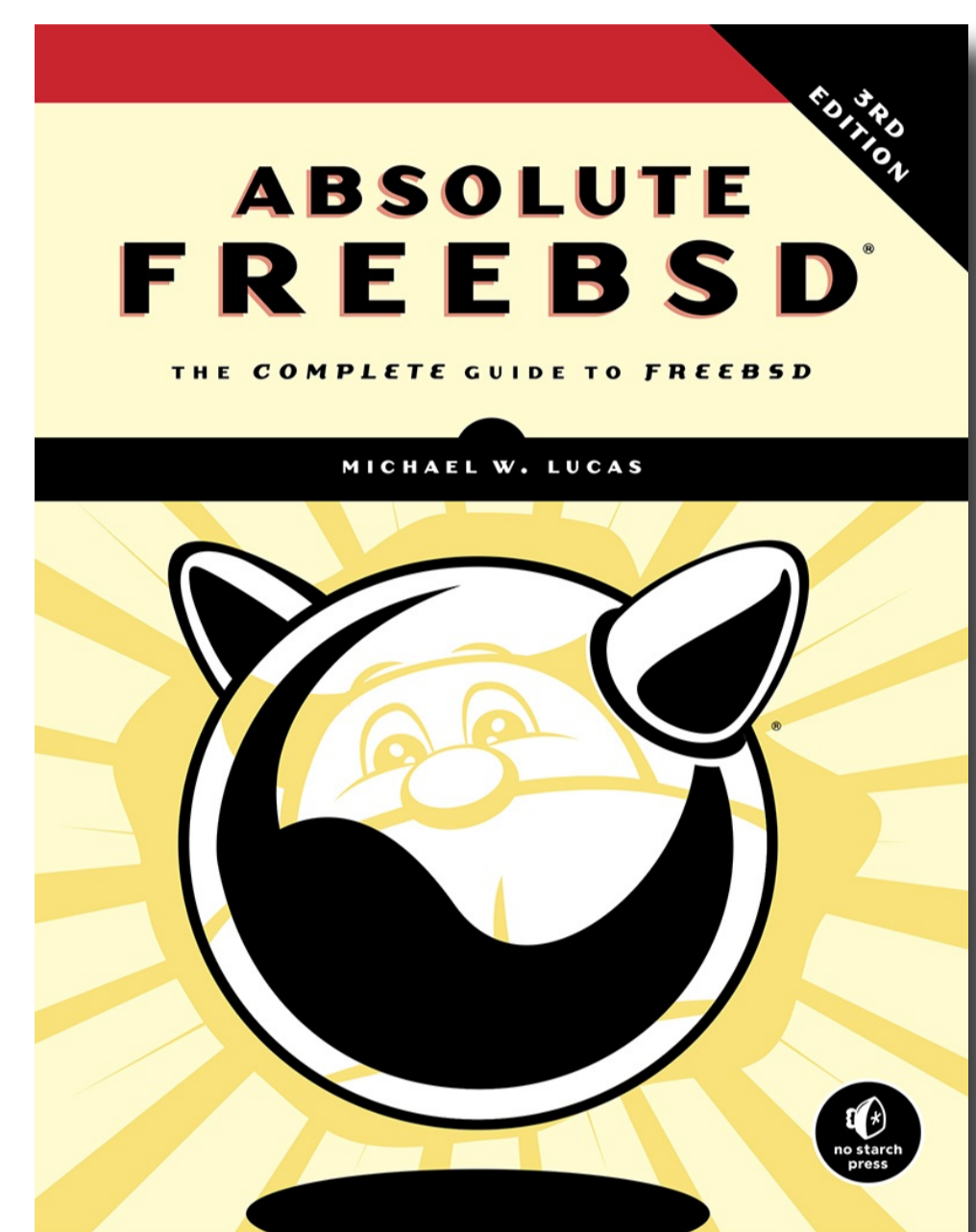
The same Michael Lucas who has made both my wife (a murder mystery aficionada) and me (a geek) chuckle while reading *$ git commit murder* side-by-side for date nights pours his narrative acumen into a book that is not a dry reference volume but, rather, an animated, story-like guidebook. *Absolute FreeBSD* triumphs because its author is a novelist at heart.

In the Introduction, Lucas remarks that he intends *Absolute FreeBSD* to be read "once, from front to back." Lucas leads the reader through a step-by-step, hands-on learning process that requires installing and using the operating system. For my own study, having FreeBSD on my (AMD64) home-built desktop with ZFS and on my (ARM) Raspberry Pi 4 with UFS made it so that I was able to do most of the prescribed exercises (at least to the "y/n" prompt).

The most important chapters of *Absolute FreeBSD* are the first, second, and final (twenty-fourth). In the first chapter, Lucas explains how to navigate several venues for help with FreeBSD, including man pages, the *FreeBSD Handbook*, the mailing lists that are best for beginners, and the FreeBSD Forums. In addition to obeying Lucas's advice to join #freebsd-questions and #freebsd-security-notifications, I also joined #freebsd-arm, wherein I learned how to run FreeBSD on the Raspberry Pi 4 before it gained official support with 13.0-RELEASE. Years of using other operating systems programmed me (so to speak) to open my favorite search engine at the first sign of trouble, but Lucas divulged a better way—the FreeBSD user's way, which normally starts with 'man _.' In the second chapter, Lucas outlines how to plan a new installation of FreeBSD. From EFI to swap, Lucas maintains a thoughtful simplicity that makes it easy to complete the most daunting task that he assigns. In the final chapter, Lucas details what to do when FreeBSD crashes or otherwise fails, including how to file useful bug reports.

The core of *Absolute FreeBSD* runs from Chapter 3 through Chapter 23. As college classes in mathematics, philosophy, and anatomy have their own internal progressions, so too is *Absolute FreeBSD* an orderly, self-contained course. From installation (Ch. 3), boot (Ch. 4), backup (Ch. 5), and kernel configuration (Ch. 6) to advanced security (Ch. 19) and system monitoring (Ch. 21), *Absolute FreeBSD*'s forward march is unyielding.

Yet within the trek that is *Absolute FreeBSD*, Lucas displays a judiciousness that makes performing the exercises more fun than one might expect. *Absolute FreeBSD* is comprehensive without being overwhelming and detailed without being arcane. Part of Lucas's refreshing genius is that he knows what *not* to include. I am overly acquainted with 500-page scholarly monographs that should have been condensed to 200 pages apiece (if not 100) before they were published. Lucas never meanders, nor does he flood his pages with surplus facts. I did not read the first edition, which No Starch Press published before I was old enough to own a computer (and I am now married with children and finishing a Ph.D.), but this third edition still strikes me as the result of meticulous revision—both because its biography spans two decades and because it is void of wasted words.

Absolute FreeBSD's central hinge subtly arrives with Chapter 14, "Exploring /etc." Everything before "Exploring /etc" in the main text (Chapters 3 through 13) pertains to making FreeBSD work. Everything after "Exploring /etc" pertains to making things work inside FreeBSD. "Exploring /etc" thus serves as a resting point between Absolute FreeBSD's two halves, helping students pause to reflect on all that they have learned while showing how to configure many of FreeBSD's
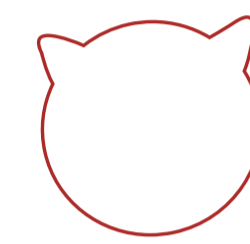
> Michael Lucas pours his narrative acumen into a book that is not a dry reference volume but, rather, an animated, story-like guidebook.

key settings. As I opened each of the directories in "/etc" and their corresponding man pages, I came to appreciate the extent to which almost every file in this descendant of what Lucas calls "primordial Unix" has its own logical place.

Although Lucas targets information technology workers, I venture that the true audience for *Absolute FreeBSD* is the full range of computer geeks. Someone who has only a soft interest in free and open-source software and/or Unix-like operating systems probably should avoid this strenuous guide, if not FreeBSD in general (Ubuntu GNU/Linux is swell for ordinary use). Yet for me, as a computer-loving, software freedom purist, learning how to make an entire operating system bend to my will was deeply rewarding. Before I started *Absolute FreeBSD*, I spent years building computers and working inside Unix-like operating systems, but I did not have any formal training in IT. Now I never will forget either the purpose of rc.conf or what single-user mode really is, and I have gained myriad skills that have been transferable to my regular work. For professionals and hobbyists alike, *Absolute FreeBSD* promises to be a whimsically engaging learning experience. Whimsical? Lucas's cheeky wit penetrates the whole book.

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