



The Design and Implementation of the FreeBSD Operating System (2nd Edition)

By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson

[Download now](#)

[Read Online](#) ➔

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson

The most complete, authoritative technical guide to the FreeBSD kernel's internal structure has now been extensively updated to cover all major improvements between Versions 5 and 11. Approximately one-third of this edition's content is completely new, and another one-third has been extensively rewritten.

Three long-time FreeBSD project leaders begin with a concise overview of the FreeBSD kernel's current design and implementation. Next, they cover the FreeBSD kernel from the system-call level down—from the interface to the kernel to the hardware. Explaining key design decisions, they detail the concepts, data structures, and algorithms used in implementing each significant system facility, including process management, security, virtual memory, the I/O system, filesystems, socket IPC, and networking.

This Second Edition

- Explains highly scalable and lightweight virtualization using FreeBSD jails, and virtual-machine acceleration with Xen and Virtio device paravirtualization
- Describes new security features such as Capsicum sandboxing and GELI cryptographic disk protection
- Fully covers NFSv4 and Open Solaris ZFS support
- Introduces FreeBSD's enhanced volume management and new journaled soft updates
- Explains DTrace's fine-grained process debugging/profiling
- Reflects major improvements to networking, wireless, and USB support

Readers can use this guide as both a working reference and an in-depth study of a leading contemporary, portable, open source operating system. Technical and sales support professionals will discover both FreeBSD's capabilities and its limitations. Applications developers will learn how to effectively and efficiently interface with it; system administrators will learn how to maintain, tune, and configure it; and systems programmers will learn how to extend, enhance, and interface with it.

Marshall Kirk McKusick writes, consults, and teaches classes on UNIX- and BSD-related subjects. While at the University of California, Berkeley, he implemented the 4.2BSD fast filesystem. He was research computer scientist at the Berkeley Computer Systems Research Group (CSRG), overseeing development and release of 4.3BSD and 4.4BSD. He is a FreeBSD Foundation board member and a long-time FreeBSD committer. Twice president of the Usenix Association, he is also a member of ACM, IEEE, and AAAS.

George V. Neville-Neil hacks, writes, teaches, and consults on security, networking, and operating systems. A FreeBSD Foundation board member, he served on the FreeBSD Core Team for four years. Since 2004, he has written the "Kode Vicious" column for *Queue* and *Communications of the ACM*. He is vice chair of ACM's Practitioner Board and a member of Usenix Association, ACM, IEEE, and AAAS.

Robert N.M. Watson is a University Lecturer in systems, security, and architecture in the Security Research Group at the University of Cambridge Computer Laboratory. He supervises advanced research in computer architecture, compilers, program analysis, operating systems, networking, and security. A FreeBSD Foundation board member, he served on the Core Team for ten years and has been a committer for fifteen years. He is a member of Usenix Association and ACM.

 [Download The Design and Implementation of the FreeBSD Opera ...pdf](#)

 [Read Online The Design and Implementation of the FreeBSD Ope ...pdf](#)

The Design and Implementation of the FreeBSD Operating System (2nd Edition)

By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson

The most complete, authoritative technical guide to the FreeBSD kernel's internal structure has now been extensively updated to cover all major improvements between Versions 5 and 11. Approximately one-third of this edition's content is completely new, and another one-third has been extensively rewritten.

Three long-time FreeBSD project leaders begin with a concise overview of the FreeBSD kernel's current design and implementation. Next, they cover the FreeBSD kernel from the system-call level down—from the interface to the kernel to the hardware. Explaining key design decisions, they detail the concepts, data structures, and algorithms used in implementing each significant system facility, including process management, security, virtual memory, the I/O system, filesystems, socket IPC, and networking.

This Second Edition

- Explains highly scalable and lightweight virtualization using FreeBSD jails, and virtual-machine acceleration with Xen and Virtio device paravirtualization
- Describes new security features such as Capsicum sandboxing and GELI cryptographic disk protection
- Fully covers NFSv4 and Open Solaris ZFS support
- Introduces FreeBSD's enhanced volume management and new journaled soft updates
- Explains DTrace's fine-grained process debugging/profiling
- Reflects major improvements to networking, wireless, and USB support

Readers can use this guide as both a working reference and an in-depth study of a leading contemporary, portable, open source operating system. Technical and sales support professionals will discover both FreeBSD's capabilities and its limitations. Applications developers will learn how to effectively and efficiently interface with it; system administrators will learn how to maintain, tune, and configure it; and systems programmers will learn how to extend, enhance, and interface with it.

Marshall Kirk McKusick writes, consults, and teaches classes on UNIX- and BSD-related subjects. While at the University of California, Berkeley, he implemented the 4.2BSD fast filesystem. He was research computer scientist at the Berkeley Computer Systems Research Group (CSRG), overseeing development and release of 4.3BSD and 4.4BSD. He is a FreeBSD Foundation board member and a long-time FreeBSD committer. Twice president of the Usenix Association, he is also a member of ACM, IEEE, and AAAS.

George V. Neville-Neil hacks, writes, teaches, and consults on security, networking, and operating systems. A FreeBSD Foundation board member, he served on the FreeBSD Core Team for four years. Since 2004, he

has written the “Kode Vicious” column for *Queue* and *Communications of the ACM*. He is vice chair of ACM’s Practitioner Board and a member of Usenix Association, ACM, IEEE, and AAAS.

Robert N.M. Watson is a University Lecturer in systems, security, and architecture in the Security Research Group at the University of Cambridge Computer Laboratory. He supervises advanced research in computer architecture, compilers, program analysis, operating systems, networking, and security. A FreeBSD Foundation board member, he served on the Core Team for ten years and has been a committer for fifteen years. He is a member of Usenix Association and ACM.

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson Bibliography

- Sales Rank: #78707 in Books
- Brand: imusti
- Published on: 2014-09-15
- Original language: English
- Number of items: 1
- Dimensions: 9.30" h x 1.40" w x 6.40" l, 2.70 pounds
- Binding: Hardcover
- 928 pages

 [Download The Design and Implementation of the FreeBSD Opera ...pdf](#)

 [Read Online The Design and Implementation of the FreeBSD Ope ...pdf](#)

Editorial Review

About the Author

Marshall Kirk McKusick writes books and articles, consults, and teaches classes on UNIX- and BSD-related subjects. While at the University of California at Berkeley, he implemented the 4.2BSD fast filesystem and was the Research Computer Scientist at the Berkeley Computer Systems Research Group (CSRG), overseeing the development and release of 4.3BSD and 4.4BSD. His particular areas of interest are the virtual-memory system and the filesystem. He earned his undergraduate degree in electrical engineering from Cornell University and did his graduate work at the University of California at Berkeley, where he received master's degrees in computer science and business administration, and a doctoral degree in computer science. He has twice been president of the board of the Usenix Association, is currently a member of the FreeBSD Foundation Board of Directors, a member of the editorial board of ACM's *Queue* magazine, a senior member of the IEEE, and a member of the Usenix Association, ACM, and AAAS. In his spare time, he enjoys swimming, scuba diving, and wine collecting. The wine is stored in a specially constructed wine cellar (accessible from the Web at <http://www.McKusick.com/cgi-bin/readhouse>) in the basement of the house that he shares with Eric Allman, his partner of 35-and-some-odd years and husband since 2013.

George V. Neville-Neil hacks, writes, teaches, and consults in the areas of Security, Networking, and Operating Systems. Other areas of interest include embedded and real-time systems, network time protocols, and code spelunking. In 2007, he helped start the AsiaBSDCon series of conferences in Tokyo, Japan, and has served on the program committee every year since then. He is a member of the FreeBSD Foundation Board of Directors, and was a member of the FreeBSD Core Team for 4 years. Contributing broadly to open source, he is the lead developer on the Precision Time Protocol project (<http://ptpd.sf.net>) and the developer of the Packet Construction Set (<http://pcs.sf.net>). Since 2004, he has written a monthly column, "Kode Vicious," that appears both in ACM's *Queue* and *Communications of the ACM*. He serves on the editorial board of ACM's *Queue* magazine, is vice-chair of ACM's *Practitioner Board*, and is a member of the Usenix Association, ACM, IEEE, and AAAS. He earned his bachelor's degree in computer science at Northeastern University in Boston, Massachusetts. He is an avid bicyclist, hiker, and traveler who has lived in Amsterdam, The Netherlands, and Tokyo, Japan. He is currently based in Brooklyn, New York, where he lives with his husband, Kaz Senju.

Robert N.M. Watson is a University Lecturer in Systems, Security, and Architecture in the Security Research Group at the University of Cambridge Computer Laboratory. He supervises doctoral students and postdoctoral researchers in cross-layer research projects spanning computer architecture, compilers, program analysis, program transformation, operating systems, networking, and security. Dr. Watson is a member of the FreeBSD Foundation Board of Directors, was a member of the FreeBSD Core Team for 10 years, and has been a FreeBSD committer for 15 years. His open-source contributions include work on FreeBSD networking, security, and multiprocessing. Having grown up in Washington, D. C., he earned his undergraduate degree in Logic and Computation, with a double major in Computer Science, at Carnegie Mellon University in Pittsburgh, Pennsylvania, and then worked at a series of industrial research labs investigating computer security. He earned his doctoral degree at the University of Cambridge, where his graduate research was in extensible operating system access control. Dr. Watson and his wife Dr. Leigh Denault have lived in Cambridge, England, for 10 years.

Users Review

From reader reviews:

Molly Cooper:

This The Design and Implementation of the FreeBSD Operating System (2nd Edition) is great e-book for you because the content which is full of information for you who also always deal with world and get to make decision every minute. This book reveal it information accurately using great organize word or we can state no rambling sentences inside it. So if you are read the idea hurriedly you can have whole information in it. Doesn't mean it only offers you straight forward sentences but challenging core information with lovely delivering sentences. Having The Design and Implementation of the FreeBSD Operating System (2nd Edition) in your hand like obtaining the world in your arm, information in it is not ridiculous just one. We can say that no publication that offer you world throughout ten or fifteen tiny right but this book already do that. So , this can be good reading book. Hey Mr. and Mrs. active do you still doubt in which?

Tammy Lugo:

Many people spending their moment by playing outside using friends, fun activity using family or just watching TV the entire day. You can have new activity to pay your whole day by reading through a book. Ugh, do you think reading a book can really hard because you have to accept the book everywhere? It ok you can have the e-book, getting everywhere you want in your Smartphone. Like The Design and Implementation of the FreeBSD Operating System (2nd Edition) which is obtaining the e-book version. So , why not try out this book? Let's see.

David Peacock:

Don't be worry in case you are afraid that this book will certainly filled the space in your house, you might have it in e-book means, more simple and reachable. This The Design and Implementation of the FreeBSD Operating System (2nd Edition) can give you a lot of pals because by you investigating this one book you have factor that they don't and make you actually more like an interesting person. That book can be one of one step for you to get success. This guide offer you information that might be your friend doesn't recognize, by knowing more than other make you to be great folks. So , why hesitate? Let me have The Design and Implementation of the FreeBSD Operating System (2nd Edition).

Jennifer Knott:

Do you like reading a book? Confuse to looking for your best book? Or your book had been rare? Why so many query for the book? But just about any people feel that they enjoy intended for reading. Some people likes looking at, not only science book but novel and The Design and Implementation of the FreeBSD Operating System (2nd Edition) or even others sources were given information for you. After you know how the good a book, you feel desire to read more and more. Science publication was created for teacher or perhaps students especially. Those textbooks are helping them to increase their knowledge. In different case, beside science publication, any other book likes The Design and Implementation of the FreeBSD Operating System (2nd Edition) to make your spare time more colorful. Many types of book like here.

**Download and Read Online The Design and Implementation of the
FreeBSD Operating System (2nd Edition) By Marshall Kirk
McKusick, George V. Neville-Neil, Robert N.M. Watson
#OGAJVUW9D1T**

Read The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson for online ebook

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson books to read online.

Online The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson ebook PDF download

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson Doc

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson Mobipocket

The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson EPub

OGAJVUW9D1T: The Design and Implementation of the FreeBSD Operating System (2nd Edition) By Marshall Kirk McKusick, George V. Neville-Neil, Robert N.M. Watson