

## "Advanced" Unix System Administration: A Brief Annotated Bibliography

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This is a list of books that I have found at least somewhat useful. It is by no means comprehensive, and new books in this field seem to emerge daily. Books in this field, especially in the "how-to" section go out of date very quickly — make sure to check for the latest edition and to be wary of books with publication dates from several years back.

### **How-To**

When you have to set up a service or piece of hardware with you are unfamiliar, a "nutshell" book published by O'Reilly is often a good first step. Here are some of the better "O'Reilly books" and some others that you may find useful.

#### *Unix System Administration Handbook*

Evi Nemeth, Scott Seabass, Scott Snyder, Trent R. Hein, 1995. *Unix System Administration Handbook*, N.J.:Prentice-Hall.

A great book on practical system administration by authors with real experience. One nice feature of this book is its organization: Its organized into functional categories but also shows clearly how to perform each system administrative task under each of several operating systems (including Solaris, HPUX and IRIX).

#### *Essential System Administration*

Aeleen Fresh, 1995. *Essential System Administration* (2nd ed.), Cambridge: O'Reilly & Associates.

"Advanced" Unix System Administration: A Brief Annotated Bibliography (Handout),  
by Micah Altman

Not as good as the Nemeth, Seabass and Snyder book, above, but it is more frequently updated, cheap, and worth having as a complement.

#### *DNS and BIND*

Paul Albitz, Cricket Liu, 1997. *DNS and Bind*, Cambridge: O'Reilly & Associates.

The book to have if you are setting up DNS.

#### *TCP/IP Network Administration*

Craig Hunt, *Tcp/IP Network Administration*. 1992, Cambridge: O'Reilly & Associates.

A good, basic, guide to TCP/IP network setup.

#### *Firewalls and Internet Security*

William R. Cheswick, Stephen M. Bellovin, 1994. *Firewalls and Internet Security*, Reading, MA: Addison-Wesley.

An excellent book on firewalls by real experts. This book walks through the details of firewalls from a protocol and design perspective. Note that since this book skips operating-system specific details (e.g. configuration files) you will need another book, such as the O'Reilly firewalls book, or at least a close look at your system manual before you will be able to set up a real firewall. Nevertheless, read this book *before* you create your firewall.

#### *Practical Unix and Internet Security*

Simson Garfinkel, Gene Spafford, 1996. *Practical Unix and Internet Security*, Cambridge: O'Reilly & Associates

Garfinkel's second edition is much expanded and improved. Its coverage of security is broad, while at the same time giving enough information for basic security at the system and network level.

### **Unix Internals**

I have never encountered a book on Unix internals that is written with the system administrator in mind. Instead, these books were written for students in computer science courses, for programmers who are going to write new operating systems, and occasionally for advanced Unix systems-programmers. Nevertheless, they can give you a somewhat better understanding of how things work. My advice is to practicing system administrators, is to read the "how-to" books first.

*The Design of the Unix Operating System*

Maurice J. Bach, 1986. *The Design of the Unix Operating System*, N.J.: Prentice-Hall.

The grand-parent of Unix internals books, and still the clearest introductory text. It is a classic, and a good place to learn the broad outlines of the Unix design, but Unix system internals have changed a lot since it was written.

*The Design and Implementation of the BSD 4.4 Operating System*

Marshall Kirk McKusick, Keith Bostic, Michael J. Karels, John S. Quarterman, 1996. *The Design and Implementation of the 4.4. BSD operating system*, Reading, MA: Addison-Wesley.

Very clear, very detailed, very dull, BSD-only.

*Unix Internals, The New Frontiers*

Uresh Vahalia , 1996. *Unix Internals, The New Frontiers*, N.J.: Prentice-Hall.

Not as clear as the BSD book (above), but compares the internals of a number of different operating systems.

*The Magic Garden Explained*

Berny Goohdeart, James Cox, 1994. *The Magic Garden Explained: Internals of System V Release 4*, N.J.: Prentice Hall.

The least clear of the internals books, above. It does contain more extensive information on SysV.R4 than the others, which is of particular relevance to systems such as IRIX, which have a large SysV.R4 component.

## **Programming for Administration and Unix Systems**

There are two types of programming books of interest to Unix administrators: books on "scripting" system tasks, and books on Unix-specific programming.

For the former task, I use perl almost exclusively with TCL as a graphical interface when required, and recommend that others do the same. Some of the best PERL information can be found on the web, and I have listed URL's where appropriate.

The following are solidly written, clear, and by far the best books on the topics that I know of (the books by Stevens are classics); the titles are self explanatory.

### *Writing Unix Device Drivers*

George Pajari, 1992. *Writing Unix Device Drivers*, Reading, MA: Addison-Wesley.

### *Advanced Programming in the Unix Environment*

W. Richard Stevens, 1992. *Advanced Programming in the Unix Environment*, Reading, MA: Addison-Wesley.

### *Unix: Network Programming*

W. Richard Stevens, 1990. *Unix: Network Programming*, N.J.: Prentice-Hall.

### *Advanced Perl Programming*

Sriram Srinivasan, 1997. *Advanced Perl Programming*, Cambridge: O'Reilly and Associates.