

A Practical Guide to UNIX System V

Mark G. Sobell



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for Laura

PREFACE

A Practical Guide to UNIX System V is intended for people with some computer experience but little or no experience with the UNIX system. However, more experienced UNIX system users will find the later chapters and Part II to be useful sources of information on such subjects as Shell programming and system administration. This book is *practical* because it uses tutorial examples that show you what you will see on your terminal screen each step of the way. It is a *guide* because it takes you from logging on your system (Chapter 2) through writing complex Shell programs (Chapters 8 and 9) to system administration (Chapter 10). Part II is a *reference guide* to 64 UNIX utilities.

This book is about UNIX System V, Release 2, and covers the important new features of System V, including:

at	new utility for delayed execution (page 328)
grep	new options (page 414)
lp	new printer spooler (pages 45 and 422)
mailx	Berkeley-like electronic mail (page 437)
passwd	new options and features (pages 23 and 296)
shl	job control (pages 238 and 491)
pg	new utility for viewing a file (page 465)
sort	new options (page 495)
vi	Berkeley UNIX editor (page 27 and Chapter 6)
who	new options (page 537)
file structure	changes to the file structure (page 304)
Shell functions	new Shell feature (page 240)
Shell variables	additional Shell variables (page 202)

A Practical Guide to UNIX System V shows you how to use your UNIX system from your terminal. Part I comprises the first ten chapters, which contain step-by-step tutorials covering the most important aspects of the UNIX operating system. (If you have used a UNIX system before, you may want to skim over Chapters 2 and 3.) Part II offers a comprehensive, detailed reference to the major UNIX utility programs, with numerous examples. If you are already familiar with the UNIX system, this part of the book will be a valuable, easy-to-use reference. If you are not an experienced user, you will find Part II a useful supplement while you are mastering the tutorials in Part I.

Organizing Information. In Chapters 2, 3, and 4 you will learn how to create, delete, copy, move, and search for information using your system. You will also learn how to use the UNIX system file structure to organize the information you store on your computer.

Electronic Mail and Telecommunications. Chapter 3 and Part II include information on how to use the UNIX system utility programs (`mail`, `mailx`, and `write`) to communicate with users on your system and other systems.

Using the Shell. In Chapter 5 you will learn how to send output from a program to the printer, to your terminal, or to a file—just by changing a command. You will also see how you can combine UNIX utility programs to solve problems right from the command line.

Word Processing. Chapters 6 and 7 show you how to use the word-processing tools that are a part of your UNIX system. Chapter 6 explains the `vi` editor, and Chapter 7 demonstrates the use of `nroff` with the `mm` macros. These chapters show you how to produce professional-looking documents, including manuscripts, letters, and reports.

Shell Programming. Once you have mastered the basics of the UNIX system, you can use your knowledge to build more complex and specialized programs using the Shell programming language. Chapter 8 shows you how to use the Bourne Shell to write your own programs composed of UNIX system commands. Chapter 9 covers the C Shell. The examples in Part II also demonstrate many features of the UNIX utilities that you can use in Shell programs.

System Administration. Chapter 10 explains the inner workings of UNIX System V, Release 2. It details the responsibilities of the Superuser and explains how to bring up and shut down a UNIX system, add users to your system, back up files, set up new devices, check the integrity of a file system, and more. This chapter goes into detail about the structure of a file system and explains what administrative information is kept in which files.

Using UNIX Tools. The UNIX System includes a group of over 200 utility programs. Part II contains extensive examples of how to use many of these utilities to solve problems without resorting to time-consuming programming in C (or another language). The example sections of `awk` (over 30 pages starting on page 331) and `sort` (page 495) use real-life examples to demonstrate how to use these utilities alone and with other utilities to generate reports, summarize data, and extract information.

Regular Expressions. Many UNIX system utilities allow you to use regular expressions to make your job easier. The Appendix explains how to use regular expressions so that you can take advantage of some of the hidden power of your UNIX system.

Acknowledgments

This book would not have been possible without the help and support of everyone at Relational Database Systems, Inc., the developers of INFORMIX-SQL. Special thanks to Roger Sippl, Laura King, and Roy Harrington for introducing me to the UNIX system. My mother, Dr. Helen Sobell, provided invaluable comments on the manuscript at several junctures. Isaac Rabinovitch of Convergent Technologies provided a very thorough review of the system administration chapter. Howard Ensler and everyone else at Image Network made it possible for me to typeset the book.

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Many people improved the accuracy and continuity of the original manuscript; the author accepts responsibility for any remaining errors.

Finally, I must also thank the black cat without a tail who harassed me during the preparation of the manuscript and who is now sitting upstairs somewhere laughing at us mortals who work all day in front of CRTs instead of stretching out in the sun. This book is for you too, Odie.

Mark G. Sobell



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