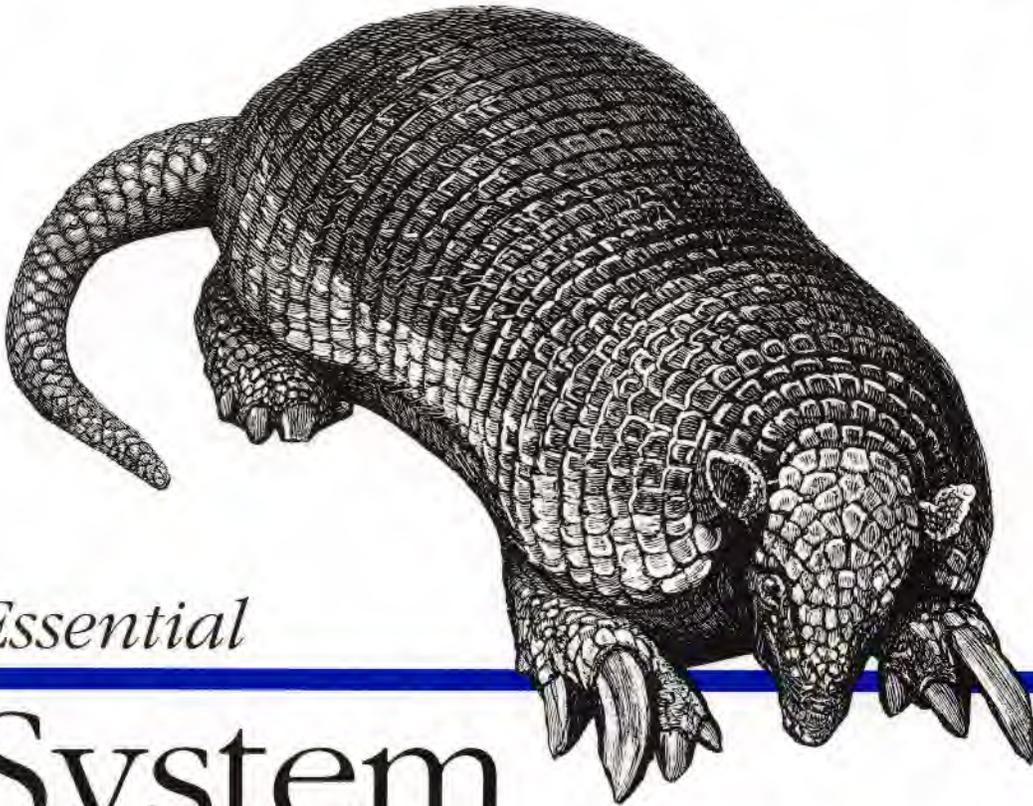


*Help for UNIX System Administrators*

**2nd Edition**  
**Revised & Updated**



*Essential*

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# System Administration

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# Essential System Administration

## *Second Edition*

Æleen Frisch

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**Essential System Administration, Second Edition**

by Aileen Frisch

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Naturally, some of this information will constitute advice about system administration; I won't be shy about letting you know what my opinion is. But I'm actually much more interested in giving you the information you need to make informed decisions for your own situation than in providing a single, univocal view of the "right way" to administer a UNIX system. It's more important that you know what the issues are concerning, say, system backups, than that you adopt anyone's specific philosophy or scheme. When you are familiar with the problem and the potential approaches to it, you'll be in a position to decide for yourself what's right for your system.

Although this book will be useful to anyone who takes care of a UNIX system, I have also included some material designed especially for system administration professionals. Another way that this book covers essential system administration is that it tries to convey the essence of what system administration is, as well as a way of approaching it when it is your job or a significant part of it. This encompasses intangibles like system administration as a profession, professionalism (not the same thing), human and humane factors inherent in system administration, and its relationship to the world at large. When such issues are directly relevant to the primary, technical content of the book, I mention them. In addition, I've included other information of this sort in special sidebars (the first one comes later in this Preface). They are designed to be informative and thought-provoking, and are, on occasion, deliberately provocative.

## *The UNIX Universe*

More and more, people find themselves taking care of multiple computers, often from more than one manufacturer; it's quite rare to find a system administrator who is only responsible for one system (unless he has other, unrelated duties as well). While UNIX is widely lauded in marketing brochures as the "standard" operating system "from microcomputers to supercomputers"—and I must confess to having written a few of those brochures myself—this is not at all the same as there being a "standard" UNIX. At this point, UNIX is hopelessly plural, and nowhere is this plurality more evident than in system administration. Before going on to discuss how this book addresses that fact, let's take a brief look at how things got to be the way they are now.

The following diagram attempts to capture the current state of things. It illustrates a simplified UNIX genealogy, with an emphasis on influences and family relationships (albeit Faulknerian ones) rather than on strict chronology and historical accuracy. It traces the major lines of descent from an arbitrary point in time: UNIX Version 6 in 1975 (note that the dates in the diagram refer to the earliest manifestation of each version). Over time, two distinct flavors (strains) of UNIX emerged from its beginnings at AT&T Bell Laboratories—which I'll refer to as System V and BSD—but there was also considerable cross-influence between them (in fact, a more detailed diagram would indicate this even more clearly).

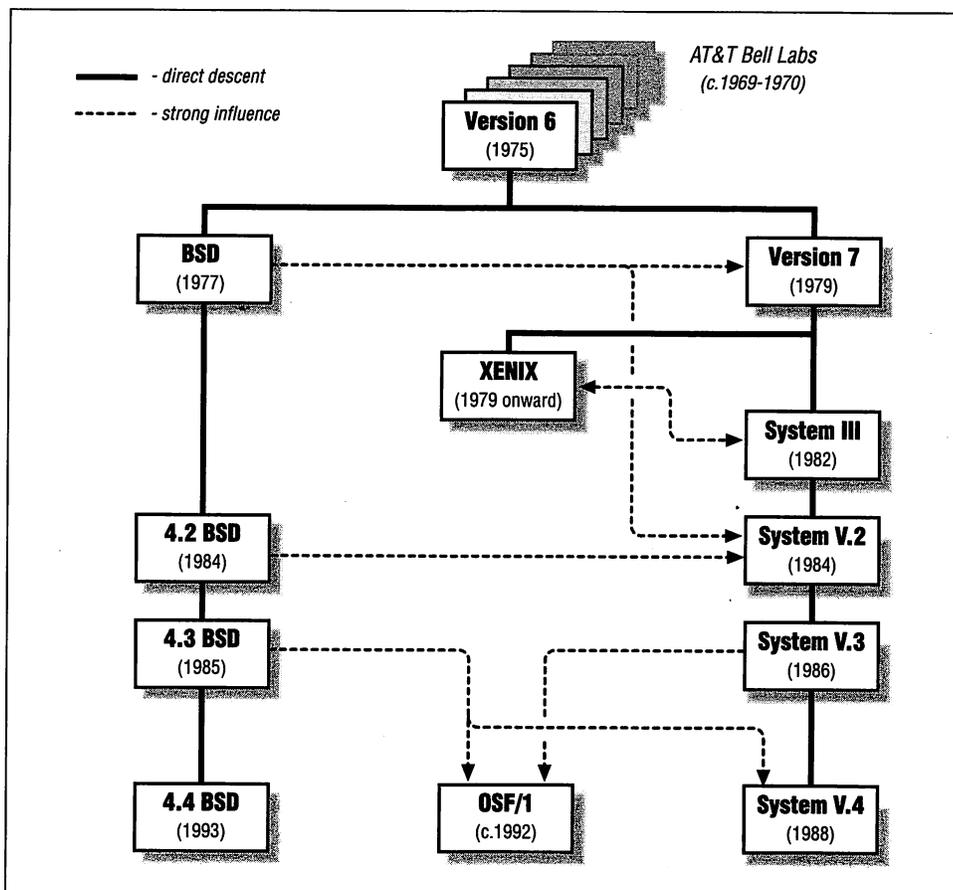


Figure 1: UNIX genealogy (simplified)

The split we see today between System V and BSD occurred after Version 6.<sup>†</sup> The developers at the University of California, Berkeley extended UNIX in many ways,

<sup>†</sup> The movement from Version 7 to System III in the System V line is a simplification of strict chronology and descent. System III was derived from an intermediate release between Version 6 and Version 7 (CB UNIX), and not every Version 7 feature was included in System III.

A word about nomenclature: The successive releases of UNIX from the research group at Bell Labs were originally known as “editions”—the Sixth Edition, for example—although these versions are now generally referred to as “Versions.” After Version 6, there are two distinct sets of releases from Bell Labs: Versions 7 and following (constituting the original research line), and System III through System V (commercial implementations started from this line). Later versions of System V are called “Releases,” as in System V Release 3 and System V Release 4.

The opening chapters of *Life with UNIX*, by Don Libes and Sandy Ressler (PTR Prentice Hall, Special Edition, 1992), give a very entertaining overview of the history of UNIX; the preface to the Special Edition updates events through about 1992.

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