SUSE™ Linux® 9 Bible

Justin Davies, Roger Whittaker, and William von Hagen

Wiley Publishing, Inc.

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About the Authors

Justin Davies has been a Linux user since the age of 15, after getting frustrated at the (lack of) features in DOS. After University, he became a technical consultant at SUSE Linux, where he became very interested in Linux on non-Intel architecture. After a stint as a Unix administrator post-SUSE, he joined the world of the value-added reseller and now works for SCC as an enterprise solutions architect, helping organizations realize that Linux is a viable business solution.

After working as a teacher of mathematics and as deputy head of an independent school in London, **Roger Whittaker** discovered Linux in 1996 and became increasingly interested (some would say obsessed). When SUSE Linux opened its U.K. office in 1999, he changed careers and worked as a technical and training consultant until early 2004, when he moved to a position in London as a Linux consultant at CSF, a leading supplier of enterprise information technology solutions. He is a Council member of UKUUG, the U.K.'s Unix and Open Systems user group.

William von Hagen has been a Unix system administrator for over 20 years and a Linux fanatic since the early 1990s. He has worked as a systems programmer, system administrator, writer, application developer, programmer, drummer, and content manager. Bill has written books on such topics as Linux filesystems, Red Hat Linux, GCC, SGML, Mac OS X, and hacking the TiVo. He has written numerous articles on Linux, Unix, and open source topics for publications including *Linux Magazine, Linux Format,* and *Mac Format.* An avid computer collector specializing in workstations, he owns more than 200 computer systems.

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To my wife, Aimee —Justin Davies

To Shekufeh and Golnaz, who tolerate all this —Roger Whittaker

Foreword

My Brothers and Sisters,

Should we accept that this book is indeed a *Bible*? Let us use a dictionary to see what the definition of a *Bible* is.

The first definition is marked obsolete, and just means "a book." I think everyone would agree that this tome is a *Bible* by that definition.

The second definition is the one that most know, "The Book by way of eminence . . . accepted as of divine authority and origin." Well, Linux has long been known for its gurus who hand out small snippets of sage advice. Sometimes that sage advice is in many books, and beginners are often told RTFM (Read The Freaking Manual). Easy enough for the guru to say, but when there are so many manuals, HOWTOs, and other pieces of information scattered about, how do you put it all together?

Therefore, a *Bible* is necessary. The hope is that it carries information pertinent to your own religion, or in this case distribution. If the *Bible* tries to cover the information in every distribution, the reader may become lost. That is why this is *SUSE Linux 9 Bible,* and not some other brand of Linux.

Some people say that Linux and Free and Open Source (FOSS) are a religion and that the people who support it are religious zealots. I don't think that is true, for the people I know in FOSS are multifaceted. But when it comes to programming, we believe that Linux and FOSS offer education, government, and business the most flexible, powerful, and lowest-cost solution. All you have to do is reach out and accept that fact.

As with any good religion, you have to practice it, study it, and really understand what is being said to you. You also have to apply it to your life. Look for ways in your life that this software can help you, whether to organize your life or your business better.

Many people think that Total Cost of Ownership (TCO) is simply made up of the cost of the hardware, software, and services of the solution you pick. How naive. Total Cost of Ownership is also made up of the cost of *not* picking a better solution, one that is flexible enough to solve 99 percent of your problems instead of 80 percent of your problems. How much does it cost you not to be able to solve that 19 to 20 percent?

The freedom that you get when you use FOSS is the key to this savings, or (in reverse) the additional earning power. To be able to fully tailor the software to meet your needs is the greatest value of FOSS. But you can't do this without knowledge.

That is where this *Bible* comes in, to give you the knowledge to go out and explore further.

So, my brothers and sisters, throw off the shackles of proprietary software and learn how to make software do what *you* want it to do. Open the pages of this *Bible* and see your life change. Welcome to the bright side of "The Force."

Carpe diem!

Jon 'maddog' Hall
President, Linux International

Preface

Welcome to *SUSE Linux 9 Bible*! This book is for anyone who is interested in running a SUSE Linux system — at home or at work, "for fun or for profit." It covers all the currently available versions from SUSE: The "9" in the title refers both to Enterprise Server 9 and SUSE Professional and Personal 9.*x*. Most of the content applies equally to previous versions also, however. We shall also describe SUSE's two other business products: the OpenExchange Server and the SUSE Linux Desktop.

The book aims to supplement the documentation provided by SUSE and to show the reader how best to carry out a particular task on a SUSE system, making full use of SUSE's configuration utilities. Many Linux books and "howto" documents provide generic instructions for carrying out particular tasks; however, it often turns out that these are either incorrect in details or unnecessarily complicated when applied to a particular distribution. In this book we aim to describe the best ways of working with SUSE in a wide variety of situations, making full use of SUSE's specific configuration tools.

Too often, computer books are written only from the standpoint of "how to" perform a task and fail to provide a real understanding of the underlying principles. Our aim in this book is to combine a description of the steps necessary to perform a particular task with a real understanding of what is being done.

While we discuss the use of SUSE Linux in enterprise applications, with examples based on our own consulting experience, the book is also for home users coming to grips with Linux for the first time. In short, we aim for *SUSE Linux 9 Bible* to be what you need to run your SUSE Linux system, whatever your situation might be.

How This Book Is Structured

We've organized this book into five parts:

- **Part I: SUSE Linux Basics** — This part introduces SUSE Linux by describing the installation of a SUSE system and discusses the fundamental concepts of Linux.
- **Part II: The SUSE System** — This part describes the use of YaST for system configuration, explains Linux networking, system logs and the X Window system, and helps you to find further documentation.
- **Part III: Using the Command Line in SUSE Linux** — This part covers the power of the Linux command line, with chapters covering text editing and tools for manipulating text files, as well as package maintenance and advanced networking.
- **Part IV: Implementing Network Services in SUSE Linux** — This part describes the setup of the major network services on a SUSE system, including setting up web servers, mail servers, and file and print servers.

- **Part V: SUSE Linux in the Enterprise** — This part describes the place of SUSE Linux in the modern enterprise and covers the use of storage area networks (SANs). The configuration of the kernel is also covered. The SUSE Linux Standard Server and the OpenExchange Server are explained in detail.

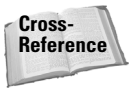
Conventions Used in This Book

Throughout the book, monospace type indicates code or commands:

```
This is how code looks.
```

Additionally, the following icons are used to call your attention to points that are particularly important.

A Caution warns you to be careful when executing a procedure or you could damage your computer hardware or software.



A Cross-Reference refers you to further information on a subject that you can find outside the current chapter.

A Note provides extra information to which you need to pay special attention.

A Tip shows a special way of performing a particular task or introduces a shortcut to ease your way.

We hope you enjoy working with your SUSE Linux system as much as we enjoy working with ours, and we know that *SUSE Linux 9 Bible* will be an invaluable tool to help you get the most out of it.

DVD and Web Site

This book comes with a DVD containing the SUSE Linux 9.1 Professional distribution. To download the complete source code for the SUSE Linux Professional Edition version 9.1, go to `www.wiley.com/go/suselinux9source`. Additionally, check out this book's web site at `www.wiley.com/go/suselinux9bible` periodically for additional and updated content. For more great books on Linux from Wiley, you can point your browser to `www.wiley.com` or `www.wrox.com`.

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