Red Hat® Linux® Networking and System Administration

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Preface

Red Hat Linux is the most popular distribution of Linux currently in use. Red Hat Linux has shown itself to be a robust, reliable operating system that can run on a variety of hardware, from personal computers to large mainframes. Linux in general, and Red Hat Linux in particular, is a very powerful operating system that can be used at the enterprise level as a full-fledged server, as well as at the workstation level for typical user applications. For those of us dissatisfied with the reliability of other commercially available operating systems, Red Hat Linux is a pleasant alternative.

How This Book Is Organized

This book is divided into five parts. Each part covers a specific area of functionality in a typical Red Hat Linux system.

Part I — Red Hat Linux System and Network Administration Defined

This part describes the duties of a system administrator. Chapter 1 explains some of the more common tasks, such as installing servers and application software, managing user accounts, and backing up and restoring files. Many more topics are covered in this chapter. Chapter 2 details the steps involved in planning and building a network and planning for security and disaster recovery. Chapter 3 takes you through the steps required to install Red Hat Linux on a local system as well as on a remote system. Chapter 4 gives an explanation of the Red Hat Linux file system and storage devices. Chapter 5, the last chapter in Part I, lists the system and network configuration files and their uses.

Part II — Red Hat Linux Network Services

This part of the book is where you learn about the networking services available in Red Hat Linux. Chapter 6 gives an explanation of the TCP/IP protocol suite and how to configure it on your system. Chapter 7 tells how to configure the Network File System (NFS) for sharing files with other Linux or Unix computers on your network. Chapter 8 provides a description of the Network Information System (NIS) as well as configuration instructions. If you have computers running Microsoft operating systems, Chapter 9 is where you find instructions for connecting your Red Hat Linux network to the Windows network. The final chapter in this part, Chapter 10, tells you how to connect your Red Hat Linux network to computers running the Apple operating system.

Part III — Red Hat Linux Internet Services

Internet services are somewhat different from network services used on an internal network. Chapter 11 begins this part by explaining Internet services, and includes a discussion of the xinetd and TCP wrappers configuration files.A fundamental part of using the Internet is the ability to enter a domain name and have it converted into an IP number that is the actual address of a computer. The name-to-number conversion is done by the Domain Name System (DNS), which is covered in Chapter 12. Chapter 13 describes the File Transfer Protocol (FTP) and gives installation and configuration instructions. Sending and receiving e-mail has become so common that it's hard to remember the time before we had it. Chapter 14 explains mail services and its configuration. Last, but not least, you find an explanation of setting up a Web server. Chapter 15 covers Apache, one of the most popular Web servers in use.

Part IV — Red Hat Linux System Maintenance

The goal of this part of the book is to provide a fundamental understanding of the tasks required to maintain your system and ensure that it runs optimally. Chapter 16 explains the Red Hat Network, a service available from Red Hat that you can use to keep your system current. You can register your systems with Red Hat and then receive notifications of updated or new software that can be installed. Chapter 17 discusses upgrading and customizing the kernel for your specific needs. Chapter 18 tells you how to use the command line to perform all of your system administrative tasks. If you want to use scripts to automate some of your work, Chapter 19 is where you find out how to do it. Chapter 20 deals with monitoring the performance of your system. Creating users and groups is a basic part of system maintenance, and Chapter 21 describes this process. Chapter 22 details the steps necessary to back up your file system and use the backups to restore your system. The final chapter in this part, Chapter 23, gives instructions on installing and upgrading software packages.

Part V — Security and Problem Solving

A critical area of concern for system administrators is maintaining a secure system. Most of the chapters in this part deal with security, beginning with Chapter 24, which covers security basics. Chapter 25 addresses local, or *host-based,* security. In Chapter 26 you find an explanation of firewalls and Internet security and the risks you may encounter from outside connections. Chapter 27 looks at ways to monitor a Red Hat Linux system for attempted, potential, and actual security compromises using the tools available in a standard Red Hat Linux installation. The last chapter in this part, Chapter 28, lists problems you may encounter during normal operation of your system and the steps to take to solve the problems discussed.

How to Use This Book

Our intention for this book is to cover the Red Hat Linux operating system in enough detail to provide the answers that you need. The book is divided into the parts previously discussed to make it easy for you to go to the specific part for the topic you need to learn about. You can use the book as a reference for whatever you need to know about a particular topic.

Using this book's icons

Watch for the following margin icons to help you get the most out of this book:

Tips provide special information or advice.

Caution icons warn you of a potential problem or error.

This icon directs you to related information in another section or chapter.

A Note highlights an area of interest or special concern related to the topic.

This icon points you toward related material on the book's CD-ROM.

Conventions

This book uses the following conventions for explanations of how to do things on your computer:

- *Italic type* introduces new technical terms. It also indicates replaceable arguments that you should substitute with actual values – the context makes clear the distinction between new terms and replaceable arguments.
- **Bold type** shows a command you type in.
- `Monospaced text` distinguishes commands, options, and arguments from surrounding explanatory content.
- Keys to press in combination are shown like this example: Ctrl+Alt+Delete means to press all three keys at the same time.
- The term *click* means to press the left mouse button once. *Double-click* means to press the left button twice in quick succession. *Right click* means to press the right mouse button once. *Drag* means to hold down the left mouse button and move the mouse while holding down the button.

Terry Collings's Acknowledgments

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Kurt Wall's Acknowledgments

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Contents at a Glance

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