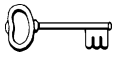
Internet Firewalls *and* Network Security

Second Edition



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By Chris Hare and Karanjit Siyan

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Chris became the first SCO-authorized instructor in Canada in 1988 and has taught Unix courses all over the world. He also has taught system administration, shell and C programming, TCP/IP, and X Windows.

As a professional writer, Chris has authored almost twenty articles for *Sys Admin* magazine and coauthored several books for New Riders Publishing, including *Inside Unix*, *Internet Firewalls and Network Security*, *Building an Internet Server with Linux*, and the *Internet Security Professional Reference*.

Chris lives in Ottawa, Canada with his wife Terri and their children Meagan and Matthew.

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From Chris Hare

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From Karanjit Siyan

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Contents at a Glance

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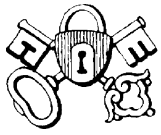

INTRODUCTION

Internet Firewalls and Network Security, Second Edition is designed for system administrators and interested users who realize the risks involved in connecting a computer system to the Internet.

In days of old, brick walls were built between buildings in apartment complexes so that if a fire broke out, it would not spread from one building to another. Quite naturally, the walls were called "firewalls."

When you connect your LAN to the Internet, you are enabling your users to reach and communicate with the outside world. At the same time, however, you are enabling the outside world to reach and interact with your LAN. Firewalls, in their barest sense, are routers through which the data traffic flows. If intruders attempt unauthorized access to your network, you stop them at the firewall and do not allow them any further into the system.

WHO SHOULD READ THIS BOOK

Internet Firewalls and Network Security, Second Edition is designed for advanced users and system administrators. It contains information and procedures for the average networked site and represents many hours spent troubleshooting and administering that environment.

HOW THIS BOOK HELPS YOU

The information presented in Part I provides an overview of security and TCP/IP. Being the protocol of the Internet, it is important to understand how TCP/IP works and what utilities are available. It also is important to understand the concept of security and why it is necessary to limit access to resources.

Part II covers firewalls and screening routers. Not only are various theories and hypothetical examples discussed, but real-world examples are given. Over-the-counter products are discussed, as well as tool kits that enable you to build your own firewall from scratch.

Part III, the appendix section, offers a quick way to locate key information. Appendix A lists the sample worksheets contained in the chapters and where they can be found. Appendix B lists sources of more information. Appendix C provides a list of vendors. Appendix D provides the manual pages for OPIE and Log Daemon, two forms of the one-time password authentication system.

CONVENTIONS USED IN THIS BOOK

Throughout this book, certain conventions are used to help you distinguish the various elements of firewalls, system files, and sample data. Before you look ahead, you should spend a moment examining these conventions.

- Shortcut keys and key combinations are found in the text where appropriate. In most applications, for example, Shift+Ins is the shortcut key combination for the Paste command.
- Key combinations appear in the following formats:

  KEY1+KEY2. When you see a plus sign (+) between key names, you should hold down the first key while pressing the second key. Then release both keys.

  KEY1, KEY2. When a comma (,) appears between key names, you should press and release the first key and then press and release the second key.

- Information you type is in **bold**. This convention applies to individual letters and numbers, as well as words or phrases. It does not apply, however, to special keys, such as Enter, Esc, or Ctrl.
- New terms appear in *italic*.
- Text displayed on-screen but not as part of an application, such as system prompts and messages, appear in a special, `computer`, typeface.

Special Text Used in This Book

Throughout this book you will find examples of special text. These passages have been given special treatment so you can instantly recognize their significance and easily find them for future reference.

Notes, Tips, and Warnings

Internet Firewalls and Network Security, Second Edition features many special sidebars, which are set apart from the normal text by icons. The book includes three distinct types of sidebars: Notes, Tips, and Warnings.

A *note* includes "extra" information you should find useful, but which complements the discussion at hand instead of being a direct part of it. A note might describe special situations that arise when you use a firewall under certain circumstances, and tell you what steps to take when such situations arise. Notes also might explain ways to avoid problems with your software and hardware.

A *tip* provides quick instructions for getting the most from your firewall implementation as you follow the steps outlined in the general discussion. A tip might show you ways to conserve memory in some setups, speed up a procedure, or perform one of many timesaving and system-enhancing techniques.

A *warning* tells you when a procedure might be dangerous, that is, when you run the risk of losing data, locking your system, or even damaging your hardware. Warnings generally explain ways to avoid such losses, or describe the steps you can take to remedy them.

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