

Introduction

A live CD is a complete computer operating system on a single disk. You simply pop it into your PC and reboot. Whether the computer has Windows, Linux, or nothing at all installed on it, the live CD hands you control of that computer, using the operating system, applications, and data on that CD.

That's when the fun begins.

Today dozens of live CDs based on Linux are available for purchase or free download from the Internet. Some of the live CDs are made as general desktop Linux systems (such as Knoppix). Others are built as specialized toolkits, as with the BackTrack Security CD or Dynabolic multimedia production CD. Still others are made to run specialized systems, as with the Devil Linux firewall CD or the ParallelKnoppix cluster live CD.

The goal of this book is to introduce you to the world of Linux live CDs and then take you as far as you want to go with it. You might just want to try out some existing live CDs (we give you some to try). If you like a particular live CD, you might want to save settings and data across reboots. Or, eventually, you might want to build a live CD completely customized to your desires.

This book starts pretty basically with how to use live CDs, but the ultimate goal is to help you make the exact live CD you want. For example, with procedures in this book, you can end up with a Linux live CD that does the following:

- Boots directly to a presentation or slide show (Chapter 10)
- Lets you add software to a running security toolkit (Chapter 9)
- Includes your own movies or music with a player set to play them (Chapter 12)
- Acts as a personal firewall live CD to protect your LAN (Chapter 13)

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- Can configure cluster computing among a group of computers (Chapter 14)
- Lets you set up a gaming console or server from any available PC (Chapter 11)

If you are partial to a particular Linux distribution, you can probably find a live CD described here that's built on that distribution. For example, in Chapters 6–8, we describe how to build live CDs based on Knoppix (Debian), Fedora, and Gentoo Linux distributions. BackTrack (Chapter 9) is based on SLAX (a slackware CD). The presentation live CD (Chapter 10) is built on Damn Small Linux.

If you want to dig deeper into building your own live CD, the book includes description of core technology. You learn how to work with boot loaders, make compressed file systems, and follow (and adapt) the boot process from the time the machine turns on until you see a working desktop or shell prompt.

AUDIENCE FOR THIS BOOK

If you have never used Linux, live CDs are a great way to try out different types of Linux systems. Chances are, you will be able to follow along quite comfortably for a few chapters, trying out some live CD desktop systems, games, and various applications. You should even be able to learn how to save your desktop files and settings without much trouble.

As you enter the second part of the book, however, some knowledge of Linux is useful (if not necessary). You don't need to be a programmer to remaster a live CD or even build one from scratch. However, a working knowledge of how to use the shell, a text editor, and shell commands are needed as you move into the more technical areas of the book.

ORGANIZATION OF THIS BOOK

This book follows the charter of the new Negus Live Linux Series to get hands-on experience quickly, dig in deeply to key components, and then step through how to get real, specific results. To that end, this book is divided into three major parts:

- **Part I, “Beginning with Bootable Live Linuxes”**—This is the Linux live CD “user” part of the book. It is designed to get your hands on a working live CD within a few minutes. You will tour a few Linux live CDs and then learn some basics about boot options, customizing your desktop, and ways to save your data to hard disk or removable media.

- **Part II, “Creating a Custom Bootable Linux”**—In this part, I get deeper into the inner workings of a live CD. You will learn about boot loaders, file systems used on live CDs, and the `init` process. The last three chapters are dedicated to remastering or customizing live CDs based on Knoppix (Chapter 6), Fedora (Chapter 7), or Gentoo (Chapter 8).
- **Part III, “Making a Specialized Bootable Linux”**—Because creating a Linux live CD involves more than just running a few scripts and burning CDs, this part focuses on specific types of live CDs that might interest you. For different types of live CDs (security, gaming, multimedia, firewall, and so on), one or two live CDs are showcased.

From each live CD category chapter, you can learn about the types of components in that type of live CD so you can begin thinking about what you might put into a live CD of that type. In some cases, you will learn how to use tools from the featured live CD to quickly personalize it. For example, you could learn to add your own presentations or slide shows to the bootable presentation live CD (Chapter 10), add movies to a multimedia player live CD (Chapter 12), or add software to a SLAX live CD (Chapter 9).

The two appendices provide some supporting information. Appendix A, “On the DVD,” describes the contents of the DVD. Appendix B, “Building, Testing, and Burning ISOs,” goes into some depth about tools touched on throughout the book for making ISO images (`mkisofs` command), testing them (`qemu` emulator), and burning images to disks (`cdrecord` or `K3b`).

ABOUT THE DVD FOR THIS BOOK

The DVD that comes with this book offers a wide array of live CDs. Several of the CDs have been remastered so you can boot to them directly from the DVD’s boot prompt. Others are available as complete ISO images that you can copy from the DVD and burn to individual CDs.

If you are just starting out with Live CDs, I recommend that you boot the DVD and select to boot the Knoppix live CD contained on the DVD. For a listing of the software contained on the DVD, refer to Appendix A.

WHAT YOU NEED TO USE THIS BOOK

Linux live CDs are available to run on a range of computer hardware, such as standard PC architecture (i386), PowerPC (ppc), and 64-bit AMD (AMD64). Some Linux live CD tools let you build for the architecture you like (such as the Gentoo Catalyst installer). For the purpose of this book, however, the software we provide and the procedures are geared toward the standard 32-bit PC architecture.

The PC you use to follow along with this book requires a DVD drive or a CD drive (if you can burn your own ISO images to CD). Although each live CD has its own minimum hardware requirements, I suggest starting with at least a Pentium-class PC and at least 128MB of RAM. As noted later in this book, live CDs (by nature) consume a lot of RAM and will run poorly in low-RAM environments.

As for hard-disk requirements, you don't even need to have a hard disk in the computer to run the live CDs included with this book. However, if you are remastering a live CD or building one from scratch, the amount of hard-disk space can range from a few hundred megabytes (to remaster Damn Small Linux) to several gigabytes of disk space. The space you need depends on how much software you are adding to your live CD (or live DVD).

You might consider getting a USB flash drive (also sometimes called a pen drive or thumb drive). Because live CDs are typically run from read-only media, USB flash drives are good to keep handy in case you want to save any of the data you create.