Introduction

Damn Small Linux (DSL) started as an exercise by John Andrews to fit an entire desktop computer system into a compressed 50MB image. Within a few years, DSL grew to one of the most popular Linux systems in the world (in the Top Ten, by some accounts) without growing beyond that 50MB target.

In a world where desktop systems are bloated with eye candy and many rarely used features, you may wonder what makes this little operating-system-that-could so popular? Well, it could be that people don't want to throw away a usable computer because the latest Windows system won't run. It could be that people are tired of waiting for common computer operations to complete while who-knows-what goes on in the background. Or maybe it's just a love for simplicity and elegance.

DSL sets out to include all the basic features you need in a modern desktop computer system—and then makes those features functional, fast, and efficient. As a result, DSL can run well on hardware that is smaller, older, or less powerful than what most of today's desktop systems demand.

Some wonderful offshoots of DSL development are that you can do the following with DSL:

- **Take it anywhere.** It fits on a live CD, USB flash drive (also called a pen drive or a thumb drive), Zip drive, or a bootable business card CD that you can carry around with you.
- **Run it anywhere.** All you need is a standard PC (with a minimal processor, small amount of RAM, and no required disk space) that you can reboot. Or, you can run a special version of DSL that's set up to run from a Windows desktop. If you like, you can even do a traditional hard drive install of DSL.

- **Add software.** If you only need a couple more applications, a few clicks download, install, and save the applications you need.
- **Build projects.** To make a computer into a music server, tiny web server, or digital media frame, DSL doesn't fill up your hard disk or RAM with software you don't need so you have more room for the music, web content, or digital images you want (see Part IV, "Making Damn Small Linux Projects," for these and other projects).
- **Run securely.** By running DSL from a CD (or other read-only medium), you are assured that a secure operating system is only a reboot away. If you think that someone has compromised or intruded on your system, simply check that any data you save is not infected, reboot your DSL live CD, and you are running securely from a clean copy.

As the project grew, DSL also grew by adding an important developer. When Robert Shingledecker joined the Damn Small Linux development team, he implemented some of the key features of DSL previously mentioned. Robert's innovations brought about easy procedures for installing DSL to a USB flash drive and adding MyDSL extensions to a running DSL system.

Today, Damn Small Linux (`www.damnsmalllinux.org`) has a thriving community of supporters, active forums and mailing lists, and tons of interesting ways to use and customize it. This book provides you with an entry to all the possibilities of what Damn Small Linux can be for you.

As You Read This Book

To make the best use of the individual talents of the three authors of this book, we divided it up by chapters that play best to each of our strengths. As you read, you will notice that we often use the first person. Because the person describing a feature was often the person who developed the feature, first person seemed a good way to go.

If you find yourself wondering who "I" is in each chapter where it appears, we are providing that information here.

Robert Shingledecker wrote the following chapters:

- "Booting DSL" (Chapter 2)
- "Configuring and Saving DSL Settings" (Chapter 4)
- "Extending Applications with MyDSL" (Chapter 5)
- "Installing DSL in Alternate Ways" (Chapter 8)

- "Adding Applications and Creating Shareable Extensions" (Chapter 10)
- "Setting Up a Full Remastering Environment" (Chapter 11)

John Andrews wrote these chapters:

- "Using DSL Applications" (Chapter 3)
- "Running a Native Pen Drive Install" (Chapter 6)
- "Running DSL Embedded in Windows" (Chapter 7)
- "Performing a Traditional Hard Drive Install" (Chapter 9)
- "Running DSL on Alternate Hardware" (Chapter 12)
- "Making an Edna Music Server in DSL" (Chapter 13)

Christopher Negus contributed most of the introductory material and appendices, as well as the following chapters:

- "Overview of Damn Small Linux" (Chapter 1) and this introduction
- "Using Skype VoIP Service in DSL" (Chapter 14)
- "Running a Digital Media Frame in DSL" (Chapter 15)
- "Setting Up an XAMPP Web Server in DSL" (Chapter 16)

The bottom line is that most of the chapters Robert and John wrote tell you about features they developed for DSL. Chapters that Chris wrote help to introduce the features Robert and John describe and add a few fun and interesting projects to the mix.

AUDIENCE FOR THIS BOOK

If you want to use, customize, or contribute to one of the world's most popular compact Linux operating systems, Damn Small Linux, this book is for you.

You don't have to be a computer expert to use Damn Small Linux. Even as a beginner, this book can help you use DSL as a portable computer system that you carry with you or as a permanently installed Linux system.

If you are a computer expert, you can use this book to learn more advanced skills, such as remastering DSL to make your own, custom DSL live CD. You can also learn how to package your own MyDSL software extensions to contribute to the growing repository of software available to use with Damn Small Linux.

If you are just someone who likes to tinker with computers, this book can teach you how to build interesting projects using Damn Small Linux as their base. Because the basic DSL is so extraordinarily compact in size and efficient in its use,

you can make use of a much wider range of PC hardware (such as older, low-powered computers) than you would need to build projects with other computer systems.

ORGANIZATION OF THIS BOOK

This book is designed to get you up and running quickly with Damn Small Linux. After you have had your hands on DSL and understand how it works, we move quickly to present you with the many ways you can use this versatile mini-operating system. You will learn a variety of permanent and portable ways of using DSL.

The book is divided into four major parts and two appendices:

- **Part I, "Using Damn Small Linux"**—In this part, you learn what DSL is and how to use it to do what you want. Chapter 1 provides an overview of the many uses and features of DSL. That chapter features a question-and-answer section where John Andrews and Robert Shingledecker describe DSL's design decisions and goals of the project. Chapter 2 provides tips for booting up DSL, including ways to start services and deal with hardware issues from the boot prompt.

  Chapter 3 provides descriptions of the applications (both graphical and command line) that come with DSL. Chapter 4 tells how to make DSL look and feel the way you like, and how to save all your personal settings and data for the next reboot. Chapter 5 shows how to get additional software, packaged as MyDSL extensions, to add the applications you want to your DSL configuration.

- **Part II, "DSL Beyond the Live CD"**—To help you do more than simply run DSL from a live CD, chapters in this section address how to run DSL in different ways and on different media. Chapter 6 addresses how to install DSL on a USB flash drive (pen drive) to have a totally portable and writeable live DSL.

  In Chapter 7, you learn how to run DSL *virtualized* so you can use it on a Windows desktop system. Chapter 8 describes alternate ways of installing DSL to a hard drive, including setups where a CD drive is not available (using floppies, Zip drives, or other media). Chapter 9 covers more traditional hard drive installs, where all DSL files are copied and booted from a hard drive.

- **Part III, "Creating Extensions and Remastering"**—In this part, we get into the more technical aspects of DSL. Chapter 10 explores how the MyDSL facility of DSL works to add applications to your DSL system, including ways of creating your own MyDSL extensions. Chapter 11 describes remastering procedures so you can build a custom version of DSL for yourself.
- **Part IV, "Making Damn Small Linux Projects"**—Ways of using DSL to build interesting projects are covered in this chapter. Chapter 12 describes cool different types of hardware that DSL will run on. In Chapter 13, you can learn how to make a music server in DSL using Edna Music Server software.

  Chapter 14 shows how to set up a DSL system to act as a Skype VoIP client for making audio calls over the Internet. In Chapter 15, you learn to build a digital media frame based on DSL. Chapter 16 tells how to set up a tiny, yet full-featured, web server using DSL and the XAMPP project.
- **Appendix A, "On the CD"**—This appendix provides details about the contents of the CD that comes with this book. The CD includes all the components you need to run the procedures and build the projects described throughout the book.
- **Appendix B, "Using MyDSL Extensions"**—This appendix offers descriptions of the free MyDSL extensions that you can download, install, and store to run with your DSL system.

WHAT YOU NEED TO USE THIS BOOK

You should use this book alongside the CD that is packaged with the book. Although you can certainly read the book without following along with the CD, descriptions and instructions the book provides are most helpful if you have your hands on DSL.

To use the CD that comes with this book, all you really need is a personal computer. The easiest way to use the CD is to boot the CD from your PC. If your PC doesn't have a CD drive, however, we include instructions for getting DSL to run on older machines that may include floppy drives or Zip drives for booting the system.

You may want to have alternative media available for storing your DSL data. In particular, a USB flash drive (also called a pen drive or thumb drive) can be particularly useful as a medium for storing your DSL settings, data, as well as DSL itself.

Some of the projects described in the last part of this book require extra hardware. Check Chapter 12 for some interesting PC hardware for running DSL. Speakers and microphones are useful for audio projects in Chapters 13 and 14. Making a digital media frame requires an old laptop computer, a frame, and a few other bits.