The Beginner's Guide to Linux Mint 19

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Prefaces

These are prefaces. Read them if you'd like some more information on Linux Mint and would like some handy tips as well.

Why Use Linux Mint?

Filler Text

Chapter 1: How Your Computer Works

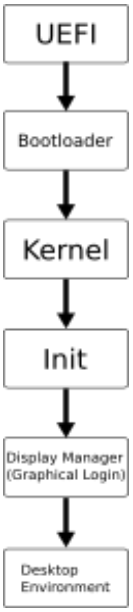
This chapter is a simple reference to how your computer works. It will inform you of how it boots up, how it manages software in Linux Mint, how your computer handles problems when things go wrong, and more.

1.1 How Your Computer Boots Up

Every computer made in the last ten years boots up very similarly, whether it runs Windows, or macOS, or Linux, or BSD. You'll notice I elaborate on Linux a lot more here since that is the focus of this book.

There is a low level component in every standard PC/Mac. This was once the BIOS, or **Basic Input-Output System**, and now there is the UEFI, standing for **Unified Extensible Firmware Interface**. Most computers made in the last 10 years (from 2018) have a UEFI.

Figure 1: A diagram indicating how your computer boots up. BIOS not shown.



Let's understand this diagram in detail. First of all, the UEFI (or BIOS) will start the bootloader, which is a file on a partition[1] on the storage medium. Then, the bootloader lets you select/automatically starts the kernel based on its configuration.

Now, the **kernel** starts up. From the kernel, the **init**[2] program starts. Init starts and sets up important services and devices like wireless cards, graphics cards, and other services. You won't need to worry about init as a user but know what it is.

Next is the **display manager**. This is simply the login screen, known as **LightDM** on Linux Mint. You might have to worry about LightDM if there are broken upgrades. It may also be useful when installing new software.

After you log in, you are greeted by the **desktop environment**, which is simply the desktop where you use Linux Mint the most, launching programs, settings things up, and performing upgrades.

1.2 How Your Computer Manages Software

Almost every large Linux distribution, including Linux Mint, uses something called a **package manager**. A package manager is a piece of software largely integral to the operating system that manages software where each piece of software is separated into a pacakge, and when one piece of software needs another piece of software, for example, a video editor needs a library to process videos, that video editor with **depend** on the video processing library.

You'll need to familiarize yourself with this concept since it is very different from other operating systems like Windows or macOS, since they have each software as a downloadable piece that is copied somewhere with an installer.

When you update software in Linux Mint, the package manager, a program known as apt, installs software by downloading it from a website that hosts trusted software selected by the Linux distribution developers. The tool that does this is known as `apt`.

Below `apt`, there is another piece of software called `dpkg`, that `apt` uses in order to install the packages it downloads. You will use `dpkg`, not `apt`, when downloading your own software like Skype. Software like Skype provides an individual .deb file that can be used with utilities on Linux Mint in order to install it onto your system. When you download a .deb file from the internet, it is an individual package.

There are many different types of package formats for many different Linux distributions. If prompted, download the .deb file for Debian-based distributions.