

Beginning Ubuntu for Windows and Mac Users

Start your Journey into Free and
Open Source Software

Second Edition



Nathan Haines

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Beginning Ubuntu for Windows and Mac Users: Start your Journey into Free and Open Source Software

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*For Alexander, who eats everything, will try anything,
and is constantly learning.*

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About the Author



Nathan Haines is an author, instructor, speaker, and computer consultant who fell in love with Ubuntu in 2005, and helped found the Ubuntu California Local Community Team to share that excitement with others. As the leader of the Ubuntu California Local Community Team and a member of the Ubuntu Local Community Council, he works to help others share Ubuntu worldwide.

He got started in IT support during high school, when he got an after-school job helping the campus technician and later worked over the summer at his high school, then his school district, and finally at his college, learning technical writing along the way. He later taught computing classes to professionals and worked his way up to the highest levels of technical support and consumer service.

When not working with computers, he's more than likely admiring the latest Nintendo hardware, wishing he had more time for retro console and PC gaming, and indulging in linguistic curiosity by studying German or dabbling in Old English or Tolkien's constructed Elvish languages. The queue of sci-fi and fantasy books on his Kindle is probably growing instead of shrinking, although sometimes camping trips help with that.

Despite a knowledge of HTML that was forged in 1995 with Internet Explorer and Netscape Navigator 2.0, Notepad, a lot of browser refreshing, and stone knives and bearskins, he manages to keep a web site online that is standards-compliant but always in need of updating at <http://www.nhaines.com/>.

As a hybrid author who enjoys stiff drinks, moonlit walks on the beach, and five-star Amazon reviews on his books, he would love to hear from you at nathan@nhaines.com or nhaines@ubuntu.com.

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Introduction

Ubuntu is a lot of things: an operating system, a software ecosystem, a development platform, a home computer solution, a server foundation, a cloud computing paradigm, an Internet of Things platform, and a community. Ubuntu and its community of developers, contributors, and enthusiasts help to make Ubuntu a first-class experience no matter where you find it.

In this book, we're looking at Ubuntu as an amazing desktop operating system. I'll nod at other possibilities here and there, but this book will help you feel at home with Ubuntu and get things done, whether you want to create business documents, relax with music or a movie, play some games, or just look at pictures of cats on the Internet.

What Makes Ubuntu So Great?

Ubuntu works a lot differently than Windows or OS X traditionally has. It has evolved separately from these proprietary operating systems, and that makes it both exotic and unfamiliar at times. And while the general concepts of windows and launcher icons are the same, there are a lot of underlying assumptions that make Ubuntu a very different experience. The main difference is the way that the Ubuntu, Free Software, and open source communities all come together to form the operating system you think of as Ubuntu. These combined efforts make Ubuntu a powerful way to get work done.

Ubuntu Is Built from Many Pieces

The first thing to know is that Ubuntu is built around an operating system kernel called Linux. The kernel is the program that is responsible for coordinating all of a computer's hardware and software. It manages hardware driver support, schedules how applications run and cooperate together and communicate with hardware, and takes care of a lot of behind-the-scenes details that we don't generally worry about when it comes to using a computer.

The kernel itself doesn't do anything on its own. It lets other software run in a way that can be built around the operating system and not the specific hardware. This means that a lot of other software must be written to be used with the Linux kernel and distributed alongside that kernel in order to produce a working, controllable computer system.

There are a lot of working parts, and the first thing you'll usually hear about when you look online is the GNU project. The Free Software Foundation rewrote a lot of the Unix *userspace tools*, or the command-line utilities that one would use to work with Unix using a text interface. The goal was to provide utilities that could be freely used, examined, modified, and distributed. When the Linux kernel was first published in 1991, the GNU userspace was quickly brought to Linux and together they made a complete, freely distributable operating system that others could build on.

Because it takes a lot of software working together to create a working system, it is common to see references to a GNU/Linux operating system. I won't use that convention in this book but GNU tools are a major underpinning of most modern Linux-based systems, and we'll be using a lot of them in **Chapter 5**.

Since 1991, Linux has been bundled with other software and distributed in a way that makes it usable out of the box. Several projects began to form that distributed bundles in different ways, and these are now known as Linux distributions, or distros for short. The first distro to focus on creating a full computer system containing only Free Software was called Debian, and since 1993 it has gathered together a vast collection of freely redistributable software that runs on over 20 different computer architectures and can be further modified for use in other projects. Ubuntu builds upon Debian for each release.

Free Software is a term of art that refers to software that can be used for any purpose, commercial or private, and can be freely examined, modified, and redistributed to others. This allowed Linux to receive improvements from others and incorporate these changes so that everyone could benefit from them. It also allowed a more and more useful collection of software to be included along with the new kernel.

Ubuntu Is Linux for Human Beings

In 2004, a Debian developer named Mark Shuttleworth decided that he wanted to take Debian and focus on releasing on a consistent, time-based schedule that would offer fresh software but with special attention given to polishing the user experience and providing high-quality language translations as well. Linux distros tended to include massive amounts of software that you had to choose between during installation, and it often took three to five CDs' worth of data to download before you could start an install. In the early 2000s, this was a lot of information to download. One of Ubuntu's initial goals was to fit on a single CD and provide a beautiful desktop with one web browser, one office suite, one email client, and so on. By doing so, the install process was simple and streamlined but additional and alternative software choices were still only a few clicks away.

Another major goal was to build a community that embraced the African philosophy of *ubuntu*—humanity toward others. Thus, the Ubuntu Code of Conduct (<https://www.ubuntu.com/about/about-ubuntu/conduct>) set clear guidelines for how community members should treat each other. The idea that everyone should be treated with respect and newcomers should be welcomed and celebrated worked to create an online community that was much friendlier and respectful than a lot of other technical communities. It was such a successful example that Ubuntu spread very quickly and many technical communities have adopted their own codes of conduct.

As Ubuntu continued to mature, it further distinguished itself from its origins. While Ubuntu still depends greatly on the Linux kernel, the GNU userspace, the Debian distribution, and thousands of other software projects, it still brings these components together in a way that offers a stunning and unique desktop experience right out of the box. This collaboration also allows Ubuntu to provide security updates and bug fixes to all of the software it installs on your computer.

Ubuntu has been working to redefine the desktop experience, and the Unity desktop shell is a brilliant and bold new interface that dedicates almost your entire screen to your applications but keeps your favorite applications, indicators, and hybrid local and online searches at your fingertips. In addition, a single 1.5 GB DVD download results in a comprehensive, complete computing experience in only about 4 GB of space once installed on your hard drive. From there you can add other software as you see fit.

By knowing some of the history of Ubuntu, we can see how it can be so different than other operating systems. But these differences are often strengths. Because Ubuntu is freely distributable, you can download and try it for free. And the install image that you download can also be installed on a USB drive instead of a DVD, and you can even run Ubuntu directly from the install media and give it a try before you actually choose to install it. That means that the best way to learn more about Ubuntu is to dive in and just try it. But it also means that an Ubuntu disc can be used to test and recover data from computers that aren't working too well, even if they're not running Ubuntu.

A wide array of software that can be arranged to accomplish any task, dozens of supported languages, and a friendly, helpful community to turn to for support and exciting activities are just some of the things that make Ubuntu so great. **Chapter 1** will help you get Ubuntu installed and up and running so that you can experience it for yourself.

Ubuntu 16.04 LTS is the latest long-term support release of Ubuntu. It provides a platform for a lot of different experiences and will continue to receive security updates until April 2021. For simplicity's sake, this book is going to assume that you are running Ubuntu 16.04 LTS installed on a computer hard drive, and **Chapter 1**

is going to help you set this up. But as you explore Ubuntu and become more comfortable with it, you may want to use your computer in a different manner than Ubuntu assumes. There are various flavors of Ubuntu that come preinstalled with different software selections. They are useful in a lot of different circumstances, but all are variations of Ubuntu. You could install Ubuntu and end up with the same configuration as any flavor just by adding and removing software. **Chapter 1** will describe some of these differences as well.

If you do not already have an Ubuntu DVD, visit the Ubuntu web site at <https://www.ubuntu.com/> and download the Ubuntu Desktop installer. Every six months a new installer called a “point release” will be available that contains all updates up to that point. At the time of publication, Ubuntu 16.04.3 LTS is the latest version.

Additional Resources

No book can cover everything, and this book cheerfully doesn’t try to. Topics are covered in enough detail to get you started, but with Linux and Ubuntu you can always dig a little deeper. Apress has an amazing assortment of books on all topics and for all skill levels and is a great place to look for comprehensive guides. In addition, the Ubuntu community—persons just like you who are sharing what they’ve learned—provides an incredible amount of resources, and I encourage you to explore those resources and to contribute back. We all make up Ubuntu together.

- The **official Ubuntu documentation** on your computer is also available online, along with additional community-maintained help. <https://help.ubuntu.com/>
- **Ask Ubuntu** is a question-and-answer site where Ubuntu users can help each other. It’s a great place to search for help and ask specific support questions. <https://askubuntu.com/>
- The **Ubuntu community portal** is a great place to find ways to contribute back to Ubuntu and to find resources that can assist you. <https://community.ubuntu.com/>
- Your **Ubuntu Local Community (LoCo) Team** is filled with friendly people who are crazy about Ubuntu, and they are happy to point you in the right direction if you want to meet other Ubuntu users or help share Ubuntu with others. You can find more about your local team and view upcoming Ubuntu events in your area at the Ubuntu LoCo portal. <http://loco.ubuntu.com/>
- Your local **Linux User Group (LUG)** is filled with Linux enthusiasts, many of whom are familiar with Ubuntu. Search for them online and join them at their next meeting!
- The **Ubuntu subreddit** is a fun place for readers to highlight and discuss Ubuntu news and community matters. Read the rules in the sidebar, and if I remove your support question with a gentle reminder to use Ask Ubuntu, it’s not personal! <https://reddit.com/r/Ubuntu/>
- **Planet Ubuntu** is an aggregate of various personal and project-related blogs that share Ubuntu news regarding announcement, development, events, parties, and other interesting topics gathered from Ubuntu member blogs. <http://planet.ubuntu.com/>
- **Ubuntu Insights** is Canonical’s portal for news, partner announcements, and industry white papers, and it is a place to read about Ubuntu’s place in the computing industry as a whole, as well as consumer products featuring Ubuntu. <https://insights.ubuntu.com/>

There’s a great, big community out there, and we’re all hoping that Ubuntu will help you be more productive, have more fun, and be happier. Don’t hesitate to reach out if we can help! Just remember, you’re a part of the Ubuntu community, too!