

Ninth Edition

The Official **ubuntu®**
Book

Matthew Helmke
Elizabeth K. Joseph
José Antonio Rey

Foreword by Mark Shuttleworth, founder of **ubuntu®**

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Praise for Previous Editions of *The Official Ubuntu Book*

“*The Official Ubuntu Book* is a great way to get you started with Ubuntu, giving you enough information to be productive without overloading you.”

—John Stevenson, DZone book reviewer

“*OUB* is one of the best books I’ve seen for beginners.”

—Bill Blinn, TechByter Worldwide

“This book is the perfect companion for users new to Linux and Ubuntu. It covers the basics in a concise and well-organized manner. General use is covered separately from troubleshooting and error-handling, making the book well suited both for the beginner as well as the user who needs extended help.”

—Thomas Petrucha, Austria Ubuntu User Group

“I have recommended this book to several users who I instruct regularly on the use of Ubuntu. All of them have been satisfied with their purchase and have even been able to use it to help them in their journey along the way.”

—Chris Crisafulli, Ubuntu LoCo Council,
Florida Local Community Team

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—Darren Frey, Member, Houston Local User Group

“This is a book that the new Ubuntu user would find helpful in getting started and the more experienced computer user would find informative enough to keep as a reference manual. I also enjoyed the computing humor.”

—Dr. Gregory Chapelle, General Atomics,
Electromagnetics Division, San Diego, California

“In short, this book is something that I can honestly recommend to anyone using Ubuntu. It works great as a reference and equally well as a how-to guide. I respect the work that’s been done, and I can’t overstate how knowledgeable the authors are, as well as the reviewers.”

—Paul Tagliamonte, Ubuntu Member, and Debian Developer

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Ninth Edition

**Matthew Helmke
Elizabeth K. Joseph
José Antonio Rey
With Benjamin Mako Hill**



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This book is dedicated to the Ubuntu community. Without your tireless hard work and commitment, none of this would be possible.

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Foreword to the Sixth Edition

THE OFFICIAL UBUNTU BOOK CAPTURES both the spirit and the precision with which Ubuntu itself is crafted. Like Ubuntu, it has evolved in a steady cadence of regular releases, and this sixth edition reflects the cumulative insight gained from prior editions, as well as some of the latest innovations driving Ubuntu forward.

2011 is a critical year of change for Ubuntu, as we move towards the new, unified interface called Unity. Our goal is to deliver what people have long wished for: the world's cleanest, most elegant desktop experience, as free software. 11.04 is the first major step in that process as we introduce Unity by default on the desktop, retaining the Classic GNOME desktop for those who cannot yet make the leap to Unity.

Our broader goal is to challenge the free software ecosystem to invest as much creativity and energy in design as it does in engineering. We know that free software can be the best in the world for performance, reliability, and security; now it's time to bring ease-of-use and stylishness into the mix too.

I hope you enjoy 11.04, and love this book. My thanks to the many folks who have made both Ubuntu and *The Official Ubuntu Book* possible. It's a great privilege to be part of this community.

—Mark Shuttleworth
Ubuntu Founder
April 2011

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Foreword to the First Edition

IT'S A SMALL CELEBRATION for me to write this foreword—almost exactly two years after the first meeting of a small group of free software professionals that turned into the Ubuntu project. A celebration because two years ago none of us would have predicted that our dream would spawn several million CDs, three or four million enthusiastic users, hundreds of commitments of support from companies large and small, a minor prime-time television reference, and now *The Official Ubuntu Book*.

The dream that brought us together can be simply expressed:

To build a world-class operating system for ordinary desktop computer users, that is genuinely free and freely available, that is immediately useful, and that represents the very best that the free software world can achieve today.

In setting out to build a platform for “ordinary desktop computer users,” I had no idea that I would have the privilege of meeting and working with so many *extraordinary* desktop computer users. Some of those extraordinary individuals are the authors of this book, people who both understand the importance of the free software movement and have the talent to have been real contributors to its success. Others make up the backbone of the Ubuntu community—the small but dedicated army of a few hundred people that works to produce a new release of Ubuntu every six months. They are at the heart of a network that reaches out through the global free software community—through the world of Debian, an extraordinary project in its own right and without which Ubuntu could not exist, and on out to the thousands of projects, large and small, that produce the code and documentation that we pull together and call *Ubuntu*.

While this huge extended community can often appear to be fractured and divided along infinitesimal ideological lines, we are all broadly in

agreement about four key ideas, and it is those ideas that are central to the Ubuntu promise:

- That our software should not come with a license fee. That we should be able to share our software, modify it, and then share our modifications, too.
- That this free software should be the best version available, including regular security updates, and not a tease for a better, commercial product.
- That full-scale, high-quality commercial support from local and global companies should be available for this free platform.
- That this software should be usable in as many languages as possible and usable by as many people as possible regardless of disability.

The 17 of us who met in London two years ago come from a very wide variety of countries and backgrounds, but we all agreed that the goal of producing a platform that could live up to that promise was a worthy one, one that we would devote ourselves to wholeheartedly.

For several months we worked quietly. We wanted to come to the world not only with a manifesto but also with a clear demonstration of work done toward our goals, something that people could test and comment on. We had no name (though industry insiders called us the “Super-Secret Debian Startup”) and, as a result, we hosted most of our work at www.no-name-yet.com. We were looking for a name that could express the beauty of the free software community development process—collaboration, interdependence, sharing, standing gently on the shoulders of giants, and reaching for lofty goals. The only word that comes close to that, of which I’m aware, is the African word *ubuntu*. It is found in many forms in many different African languages. And so we adopted it as the name of our project.

We knew that our first release would have blemishes—warts—and gave it the codename “The Warty Warthog.” We called ourselves “the warthogs” and coordinated our work on the #warthogs IRC channel. Today, for better or worse, that’s turned into a tradition of codenames such as “Breezy Badger” and “Dapper Drake.” As lighthearted as they sound, these code-names come to embody the spirit of our community as it works toward a

particular release. This next one—Dapper—is exactly that: a man emerging from youth, professional, bold, confident, and energetic. This is our first release that is designed to meet the needs of large organizations as much as developers and engineers. In the same way, the Ubuntu community has moved from being something of a rebellion against the “Linux establishment” to a strong and professionally organized group.

What Makes Ubuntu So Popular?

First, this is the time for free software to come to the forefront, and Ubuntu is very much the beneficiary of the vast amount of work that has gone into building up a huge body of work in the GNU/Linux world. That work has been under way for nearly 30 years, in one form or another, but Ubuntu is one way in which it is suddenly becoming “visible” to the nonspecialist computer user. We are in the middle of a great overturning of the industry status quo. The last time that happened, in the mid-1990s, was when the world suddenly found itself connected to itself—by the Internet. Every major company, especially those in the field of technology, had to examine itself and ask the question, “How do we adapt to an Internet world?” Today, every major technology company has to ask itself the question, “How do we adapt to a free software world?”

I would speculate and say that Ubuntu represents an idea whose time has come. We did not invent the free software movement—that honor goes to Richard Stallman and many others who had a vision far more profound at a time when it was hard to see how it could ever become reality. But Ubuntu has perhaps the honor of bringing that vision to a very wide audience in a form that we can all appreciate. I hope that the real visionaries—those who have led the way—will appreciate the decisions and the choices we make in bringing you this project. Some will take exception—I know Linus prefers KDE to GNOME, for example, so he’s likely to be more of a fan of Kubuntu than Ubuntu. But in general, the ideas that others have had, the principles of the free software movement, are well expressed in Ubuntu.

Second, Ubuntu is a project on which *you* can have a real impact. It has the benefit of deep and reliable financial backing and a corporate team to give it muscle, but it is in every regard an open project, with participation at the highest levels by true volunteers. We work in a fishbowl—our meetings

take place online, in a public forum. That can be tricky. Building an operating system is a fast-paced business full of compromise and tough decisions in the face of little information. There are disagreements and dirty laundry, and mistakes are made. (I should know; some of them are mine. You should hear the one about the Warty Warthog desktop artwork.) The transparency of our environment, however, means that we can count on having robust conversations about our options—all of them, even the ones the core team would never have dreamed up. It also means that mistakes are identified, discussed, and ultimately addressed faster than they would be if we lived and worked behind closed doors. You get a better platform as a result.

We work hard as a community to recognize the contributions of all sorts of individuals—advocates, artists, Web forum moderators, channel operators, community event organizers, writers, translators, people who file and triage bugs . . . whatever your particular interest or talent, we will find a way to integrate your contribution.

Perhaps most important is the way our approach to community differentiates Ubuntu from other free software projects with similar vision. We try to do all of this in a way that recognizes that disagreements are important but prevents those disagreements from creating deep divides in our community. Our code of conduct may not be perfect, but it reminds each of us to remember the meaning of the word *ubuntu*—that each of us has our best impact *through* the relationships we maintain with one another. Finding common ground and maintaining healthy communication are more important for us as a community in the long run than a particular technical decision or the specific choice of words with which to translate “File” into Spanish. Our community governance structures—our Technical Board and Community Council—exist to ensure that debates don’t become personal and that decisions can be taken after all sides have been heard.

If you are a software professional or curious about Linux, this book and this platform are an excellent choice. You will learn about the world of Ubuntu and, indirectly, Debian and GNU/Linux. These are great foundations for working with the tools that I believe will come to define the “standard,” the everyday computing base upon which we build our homes and offices.

I once heard a proprietary software vendor say, “Linux is more expensive because skilled Linux professionals are more costly.” This is true. It means, of course, that Linux skills are more valuable! It won’t be true forever because the world of Linux is expanding so rapidly that sooner or later we will have to accept a position in the mainstream, and that takes off some of the “geek points” associated with being part of the “future of technology.” But right now, without a doubt, being ahead of the curve on Linux and on Ubuntu is the right place to be. If you’re this far into this foreword, you are clearly going to make it. ;-)

It’s difficult for me to speculate on what the future might hold for the Ubuntu project. I know that I along with many others are loving the opportunity to be at the center of such an exciting initiative and are committed to seeing where it leads us over the coming years. I believe that it will become a pervasive part of our everyday computing environment, so I would like to help make sure that we don’t make too many mistakes along the way! Please, come and join us in the fishbowl to help ensure we do a very, very good job.

—Mark Shuttleworth
Ubuntu Founder
April 2006

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Preface

WE HOPE YOU ENJOY *The Official Ubuntu Book*. There are many changes we made for this edition, which we believe takes an already good book to a new level.

Because Ubuntu has increased in popularity and is better known, we have expanded the intended audience from pure beginners to also include those who know a bit about Ubuntu but who want to improve their skills and become power users. These individuals are not necessarily focused on becoming programmers or systems administrators, but regular people who want to make their day-to-day use of Ubuntu more efficient or who want to better harness Ubuntu's potential.

A large part of this book has been rewritten—not because the earlier editions were bad, but because so much has happened since the previous edition was published. This book chronicles the major changes that affect typical users and will help anyone learn the foundations, the history, and how to harness the potential of the free software in Ubuntu.

As we write this, it has been several years since we penned the first edition of *The Official Ubuntu Book*. Over that time, we have seen Ubuntu continue its explosive growth. Updating this book drives this fact home in striking ways. For example, the numbers of users and posts in the Ubuntu Forums and the Ask Ubuntu Web sites continues to rise.

Once again, we feel blessed that *The Official Ubuntu Book* has been able to benefit from, and perhaps in a small way even *contribute* to, that success. Ultimately, that success paved the way for several subsequent editions, and now the ninth edition, of the book that you're reading now.

In the process, this book, like Ubuntu, continues to mature. Our job as authors, like that of the Ubuntu developers, now involves more updating and polishing than it used to. Distributed under a free license, a once-risky book on a once-risky operating system is, just a few short years later, as close to a sure thing as an author, publisher, and, if we have done our job well, a reader could hope for.

And yet with success comes responsibility to our readers and to our users with high expectations. Ubuntu's success is built in part of maturity and excellence, and it cannot sacrifice these qualities if it will succeed. We cannot either. Our job as writers is complicated because we need to accurately reflect and represent both qualities while catering to an increasing and increasingly diverse group of users.

As we've noted in the prefaces to previous editions of this book, being *Official* has carried with it a set of rights and responsibilities. Our book's title means that we must attempt to reflect and represent the whole Ubuntu community. While we, as authors, are expected to put ourselves into the book, it is understood that it can never be to the detriment of the values, principles, technologies, or structures of the Ubuntu community.

Doing this has been complicated as Ubuntu has grown. In each edition, we have added new information, because the Ubuntu community has grown to include new projects. In each revision of this book, we have needed to add to the list of related projects, tools, and community initiatives. As the Ubuntu community grows, it is impossible to give a complete accounting of what Ubuntu has to offer. Creating a summary requires some hard decisions. At the end of the day, we are constrained by page count and our own limited schedules.

Meanwhile, as with earlier editions, we needed to write this book about a new release of Ubuntu while that version was under active development and was being redesigned, rethought, and rebuilt. Every day, Ubuntu grows in different, unpredictable ways, and this growth has increased exponentially with the size of the community and the diversity of the user base. Our book's development process had to both match and track this process as our content was crafted, rewritten, adjusted, and allowed to mature **itself**.

As in the previous edition, the contributors to this book go well beyond those listed on the book's cover. Invisible to most readers, dozens of members of the community left their mark on different parts of the text of this book. Although this degree of participation led to a writing process that was as hectic, and at times frustrating, as the process that builds Ubuntu, we hope we can remind readers of the level of quality that this process inspires in our book's subject. In the places where we achieve this, we have earned our book's title. With that goal in mind, we look forward to future versions of Ubuntu and editions of this book wrought through the same community-driven process.

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Acknowledgments

SPECIAL THANKS TO Mark Shuttleworth, Jane Silber, and Lara Pinto for all their efforts to get this book out into the world for both new and veteran Ubuntu users. Thanks also to Marcus Haslam, Wunmi Solaja, David Planella, and Tom Callway at Canonical for their kind assistance with this edition.

Our thanks extend back to this group of reviewers and information sources for help with the previous editions: Philip Ballew, Amber Graner, Shannon Oliver, Jono Bacon, Kyle Rankin, Ashley Rose, Allen Dye, Isabelle Duchatelle, Joe Barker, Alan Pope, Jorge O. Castro, Jonathan Riddell, Oliver Grawet, Dennis Kaarsemaker, Matthew East, Quim Gil, Dinko Korunic, Abhay Kumar, Jaldhar Vyas, Richard Weideman, and Scott Ritchie.

And finally, we appreciate the efforts of the Prentice Hall team, including Debra Williams Cauley, Kim Boedigheimer, Julie Nahil, and Mark Taub.

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About the Authors

Matthew Helmke has been an Ubuntu user since April 2005 and an Ubuntu Member since August 2006. He served from 2006 to 2011 on the Ubuntu Forum Council, providing leadership and oversight of the Ubuntu Forums, and spent two years on the Ubuntu regional membership approval board for Europe, the Middle East, and Africa. He has written articles about Ubuntu for magazines and Web sites, is the lead author of *Ubuntu Unleashed*, and has written several books and articles on other topics.

Elizabeth K. Joseph is a professional Linux Systems Administrator currently working at Hewlett-Packard, with a focus on managing the infrastructure for the OpenStack project. She has been working with Linux and around Linux communities since 2002. Elizabeth began contributing to Ubuntu in 2006 and currently contributes to various teams, including Documentation, News, Quality Assurance, and Classroom. Over the years she has served on the Ubuntu Membership Board and is now serving her third term as a member of the Ubuntu Community Council. At home in San Francisco, she serves as one of the leaders of the Ubuntu California team and is on the board of a nonprofit that provides Ubuntu-based computers to schools in need.

José Antonio Rey is a community contributor who has been actively participating since 2011. He is a student residing in Peru, whose contributions include helping with the News and Classroom teams, managing Ubuntu On Air!, and being the contact of the Ubuntu Peru team and a member of the LoCo Council. Even though he is not a developer, he has helped with Juju Charms and is the author for the Postfix and Mailman charms.

Benjamin Mako Hill is a long-time free-software developer and advocate. He was part of the founding Ubuntu team whose charge at Canonical was to help grow the Ubuntu development and user community during the project's first year. Mako is an Assistant Professor at the University of Washington and a fellow at the Berkman Center for Internet and Society at Harvard University. He holds a Ph.D. from MIT's Sloan School of Management.

Introduction

WELCOME TO *The Official Ubuntu Book, Ninth Edition!*

In recent years, the Ubuntu operating system has taken the open source and IT world by storm. From out of nowhere, the Little Operating System That Could has blossomed into a full-featured desktop and server offering that has won over the hearts of users everywhere. Aside from the strong technical platform and impressive commitment to quality, Ubuntu also enjoys success because of its sprawling community of enthusiastic users who have helped to support, document, and test every millimeter of the Ubuntu landscape.

In your hands you are holding the official, authorized guide to this impressive operating system. Each of the authors selected to work on this book has demonstrated a high level of technical competence, an unbridled commitment to Ubuntu, and the ability to share this knowledge in a simple and clear manner. These authors gathered together to create a book that offers a solid grounding to Ubuntu and explains how the many facets and features of Ubuntu work.

About This Book

At the start of every book, on every bookshelf, in every shop, is a paragraph that sums up the intentions and aims for the book. We have one very simple, down-to-earth aim: to make the Ubuntu experience even more pleasant for users. The Ubuntu developers and community have gone to great lengths to produce an easy-to-use, functional, and flexible operating system for doing, browsing, and creating all kinds of interesting things. This book augments that effort. With such an integrated and flexible operating system, this guide acts as a tour de force for the many things you can do with Ubuntu.

The Scope of the Book

With so much to cover, we had our work cut out to write a book that could cover the system in sufficient detail. However, if we were to write in depth about every possible feature in Ubuntu, you would need to buy a new bookcase to store the sheer amount of content.

Part of the challenge in creating *The Official Ubuntu Book* was selecting the topics and content that can be covered within a reasonably sized book. We have identified the most essential content and written only about it. These chosen topics not only cover installation, use of the desktop, applications, multimedia, system administration, and software management, but also include a discussion of the community, online resources, and the philosophy behind Ubuntu and open source software. As a bonus, we expanded our discussion of projects related to Ubuntu that will be of interest to you. We believe this book provides an ideal one-stop shop for getting started with Ubuntu.

The Menu

Here is a short introduction to each chapter and what it covers.

- **Chapter 1: The Ubuntu Story.** This spirited introduction describes the Ubuntu project, its distribution, its development processes, and some of the history that made it all possible.
- **Chapter 2: Installing Ubuntu.** We walk through the installation process one step at a time to clearly describe how anyone interested may begin using Ubuntu on their own computer.
- **Chapter 3: Getting Started with Ubuntu.** This is an informative and enjoyable introductory tour of Ubuntu, and the reader's first introduction to the more practical content of the book.
- **Chapter 4: Finding and Installing Ubuntu Applications.** Here you will learn about the vast contents of the Ubuntu software repositories and discover how to take advantage of them. Several examples of useful software that is not installed by default are highlighted.

- **Chapter 5: Customizing Ubuntu for Performance, Accessibility, and Fun.** Learn how to bend Ubuntu to better fit your needs or whims.
- **Chapter 6: Becoming an Ubuntu Power User.** We explore some of the advanced ways to use Ubuntu. This is the chapter for users who want to move up from basic use, but who do not intend to become programmers or professional systems administrators.
- **Chapter 7: Welcome to the Command Line.** Begin to take advantage of the power and efficiency of the command line with the clear, easy-to-use examples in our brief introduction.
- **Chapter 8: The Ubuntu Server.** This introduction to Ubuntu Server installation and administration includes coverage of command-line package management, basic security topics, and advanced installer features like logical volume management and RAID.
- **Chapter 9: Ubuntu-Related Projects and Derivatives.** There are a number of Linux distributions based on Ubuntu that you will find interesting and possibly useful. We discuss some of these as well as projects that are integral to the creation of Ubuntu, such as Launchpad and Bazaar.
- **Chapter 10: Ubuntu, Convergence, and Devices of the Future.** A significant effort is under way to make Ubuntu more useful not only on devices such as phones, but also in some surprisingly useful and cool ways.
- **Chapter 11: The Ubuntu Community.** The Ubuntu community is larger and more active than many people realize. We discuss many of its facets, including what people like you do to build, promote, distribute, support, document, translate, and advocate Ubuntu—and we tell you how you can join in the fun.

The Ubuntu team offers several installation options for Ubuntu users, including CDs for desktop, alternate install, and server install. These three CD images are conveniently combined onto one DVD included in the back of this book, allowing you to install Ubuntu for different configurations from just one disk. There is also an option to test the DVD for defects as well as a memory test option to check your computer.

The first boot option on the DVD, “Start or Install Ubuntu,” will cover most users’ needs. For more comprehensive information, check the Help feature by selecting F1 on the boot menu. You can also refer to Chapter 2, which covers the Ubuntu installation process in detail.

You can find the DVD image, the individual CD images (for those users who don’t have a DVD drive), and Kubuntu and Ubuntu Server on www.ubuntu.com/download.

Register your copy of *The Official Ubuntu Book, Ninth Edition*, at www.informit.com for convenient access to downloads, updates, and corrections as they become available. To start the registration process, go to informit.com/register and log in or create an account. Enter the product ISBN (9780134513423) and click Submit. Once the process is complete, you will find any available bonus content under “Registered Products.”

CHAPTER 5

Customizing Ubuntu for Performance, Accessibility, and Fun

- **Unity Terminology**
- **Appearance Tool**
- **Unity Tweak Tool**
- **Compiz Config Settings Manager**
- **Unity Lenses and Scope**
- **Additional Resources**
- **Summary**

ONE OF THE MOST APPEALING ARGUMENTS for the adoption and use of Linux is the fact it can be customized according to users' personal preferences. In this chapter, we look at the many ways the Unity desktop can be adapted to different users. Unity is a relatively new desktop, so we start by reviewing the terminology for the desktop. We then look at the default settings, including various ways to tweak them. Lenses were introduced in the Ubuntu 11.04 release; in the 16.04 LTS, a wide variety of Lenses are available. We examine some popular Lenses and how to use them. Different people use their computers in different ways, and for that reason we want to help you discover how to tweak your Unity desktop to best suit your needs.

While tweaking your desktop is a fun way to personalize your desktop experience, we also want to caution you about making changes without understanding what those changes will do. If you are unsure about making those changes, take some time to research them. At the end of this chapter, we identify some more resources to further your understanding of the Unity desktop.

In this chapter, we show you just a few of the Lenses that are available and explain how you can install them. At the end, we point out the resources that will get you started writing those Lenses as you go from novice to superuser. Let's get ready to supercharge your Unity desktop!

Unity Terminology

When the Unity Launcher was introduced in the Ubuntu 11.04 release, a number of design goals were established. Specifically, the icons needed to be easy to find, running applications needed to be always visible, the focused application needed to be easily accessible, and the interface needed to be touch friendly. The Unity desktop certainly met with a mixed range of highly charged emotions from early adopters, and due to their passion and feedback, the desktop and its functionality have improved. Providing user feedback is one of the most important things an Ubuntu user can do for the project. At the end of this chapter, you will be given a list of resources to get you started on providing the developers with feedback.

In Ubuntu 16.04 Unity desktop, many new Unity Scopes are installed by default. These new Scopes allow the Dash to search in many more places, and they provide you with results from a wide variety of sources.

Unity also features the HUD (Heads Up Display) that users can use to search the menus of a focus (active) window or full application. HUD doesn't replace your global menu, but rather is a feature that can be accessed by pressing the Alt key.

As we look at the parts that make up the Unity desktop, we'll also explore the Unity Tweak Tool (Figure 5-1). Unity Tweak Tool is a third-party tool that allows users to configure and tune their Unity desktops. It also allows users to return to the default desktop settings, thereby undoing changes made earlier. To install Unity Tweak Tool through the GNOME Software

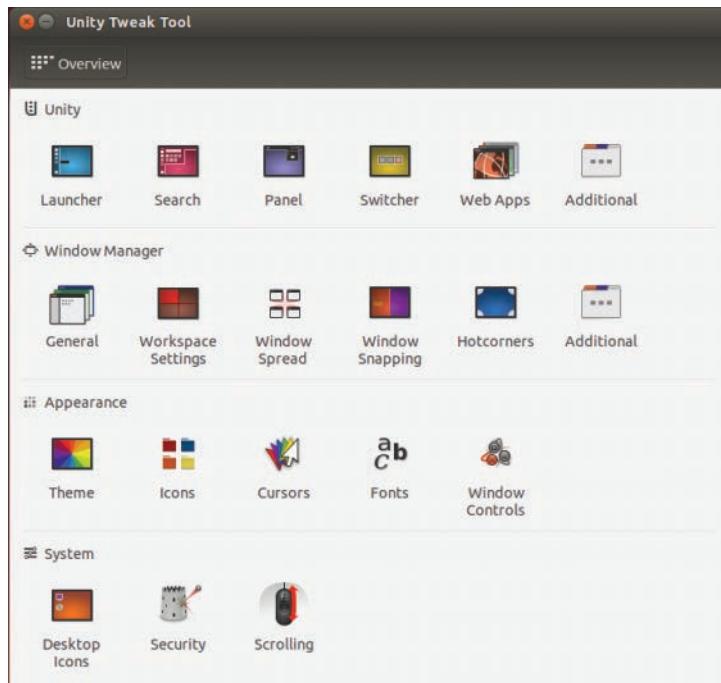


Figure 5-1 Unity Tweak Tool

Center, click the Software icon located in the Launcher. Once the software center opens, type *Unity Tweak Tool* into the search box and click Install (Figure 5-2).

You can also install the Unity Tweak Tool from the command line with the command `sudo apt-get install unity-tweak-tool`.

Following is the list of user interface (UI) terms for the parts of your Unity desktop; numbers 1 to 7 correspond to the numbers in Figure 5-3 and the words to Figure 5-4. Finally, Figure 5-5 shows the HUD.

1. Windows Tile
2. Application Menu
3. Dash Icon, which opens what is shown in Figure 5-4, including:
 - a. Applications Lens
 - b. Files and Folders Lens
 - c. Videos Lens
 - d. Music Lens
 - e. Photos Lens
 - f. Social Network Messages Lens
4. Launcher Icons
5. Launcher
6. Trash
7. Indicators
8. HUD



Figure 5-2 Installing Unity Tweak Tool from the GNOME Software Center

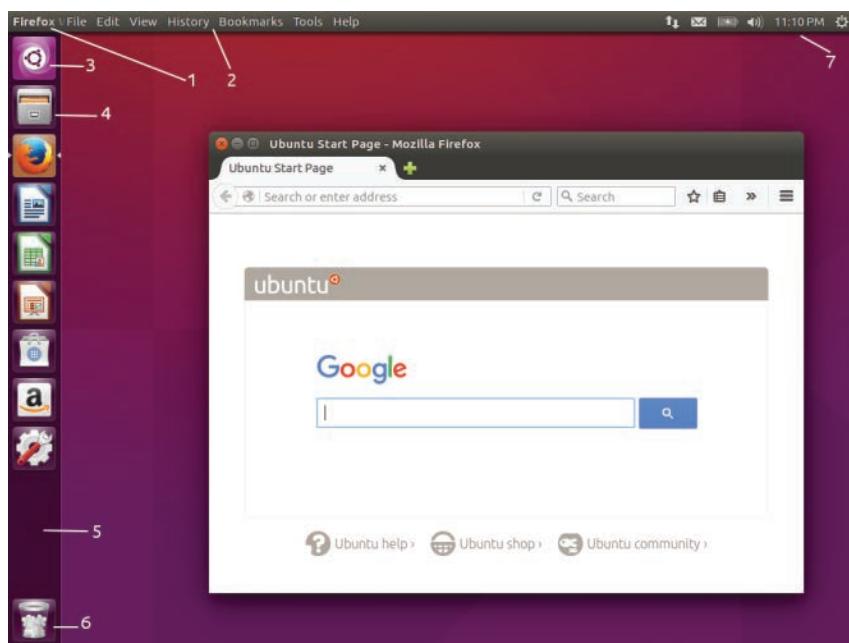


Figure 5-3 Diagram of the Unity desktop

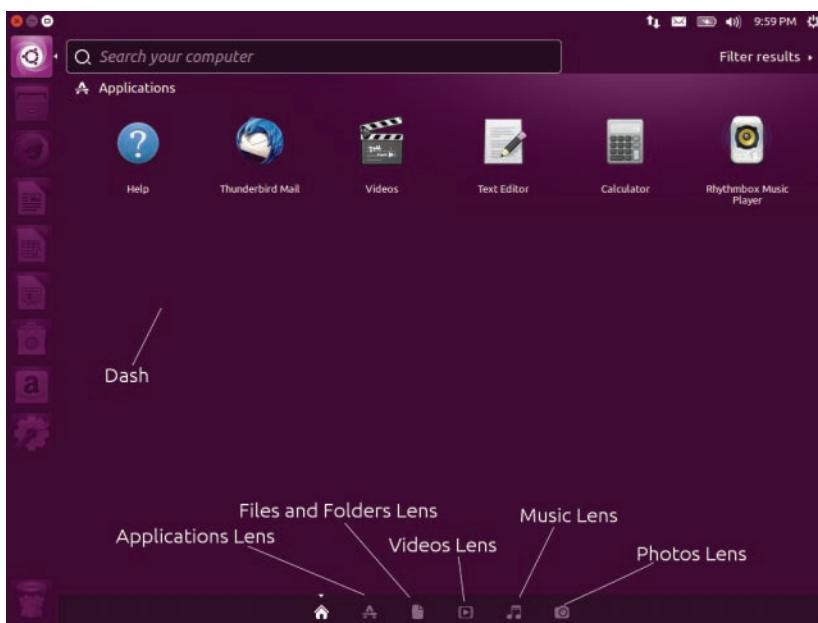


Figure 5-4 Diagram of the Dash

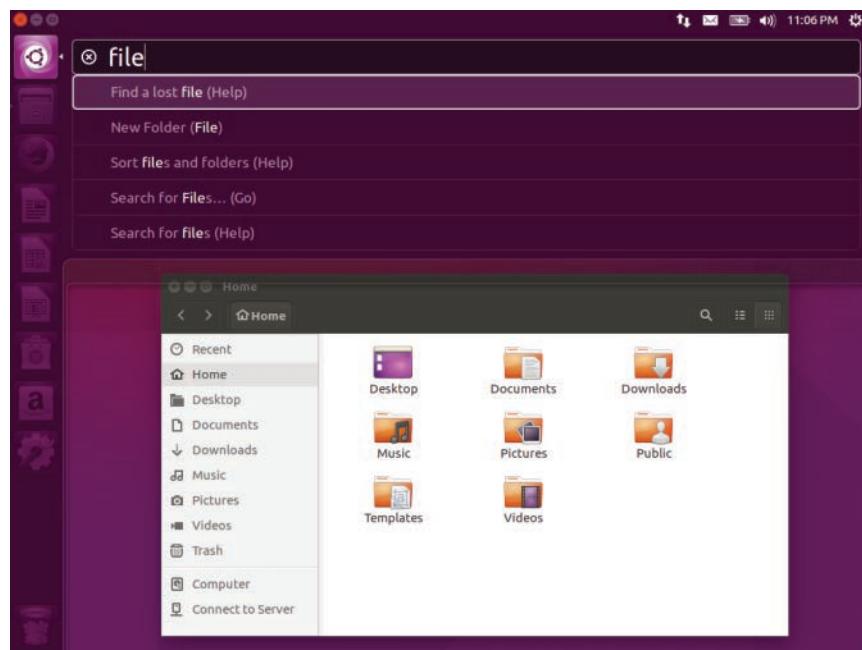


Figure 5-5 Diagram of the HUD

Now that we have reviewed the terminology for your desktop, let's look at those default settings.

The Ubuntu 16.04 release uses the 4.4 Linux kernel, based on the 4.4 upstream stable kernel.

The applications included in this release by default, but not necessarily locked to the Launcher, are Nautilus, GNOME Software Center, Firefox, Thunderbird, LibreOffice, Rhythmbox, Deja Dup Backup Tool, Shotwell, Transmission, Remmina (remote desktop client), GNOME Control Center (system settings), Gedit, and Totem.

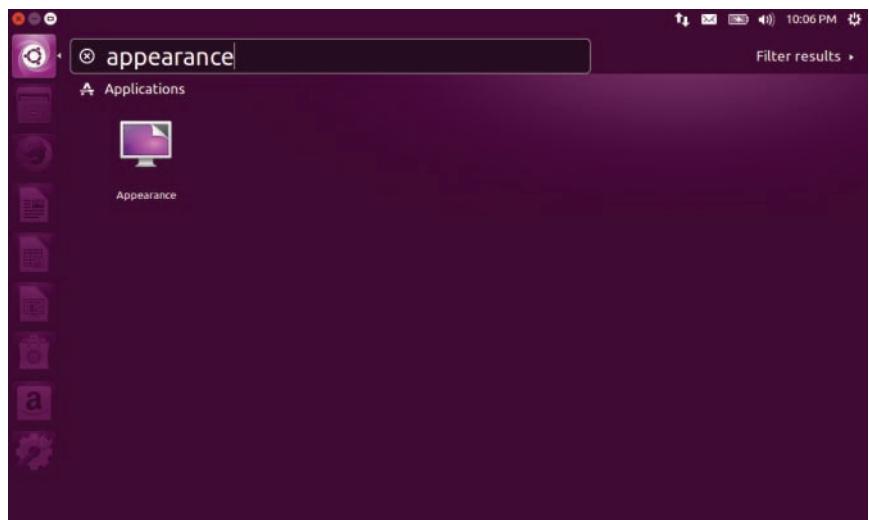


Figure 5-6 Locating the Appearance icon from the Dash

As mentioned earlier, tweaking your Unity desktop can be done easily with tools like the Unity Tweak Tool, and some tweaks can be made using the Appearance tool. To get to the Appearance tool, click the Super key once and the Dash will open. In the search box, type “Appearance,” and then click on the Appearance icon to open this tool (Figure 5-6).

Appearance Tool

The Appearance tool is available by default and allows users to change the look and behavior of their Unity desktop. It opens to the Look tab (Figure 5-7) and allows you to change the background, theme, and Launcher icon size. The Behavior tab (Figure 5-8) allows you to change autohiding of the Launcher, the reveal location (where you need to put your mouse for the Launcher to reappear), and the reappear sensitivity levels. It also allows you to enable Workspaces as well as add a Show Desktop icon to the Launcher.

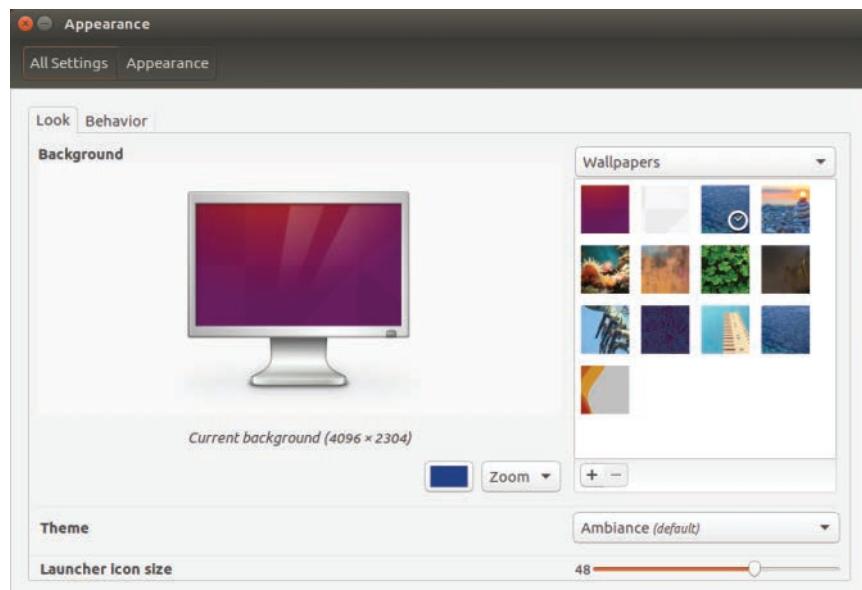


Figure 5-7 Appearance tool: Look tab

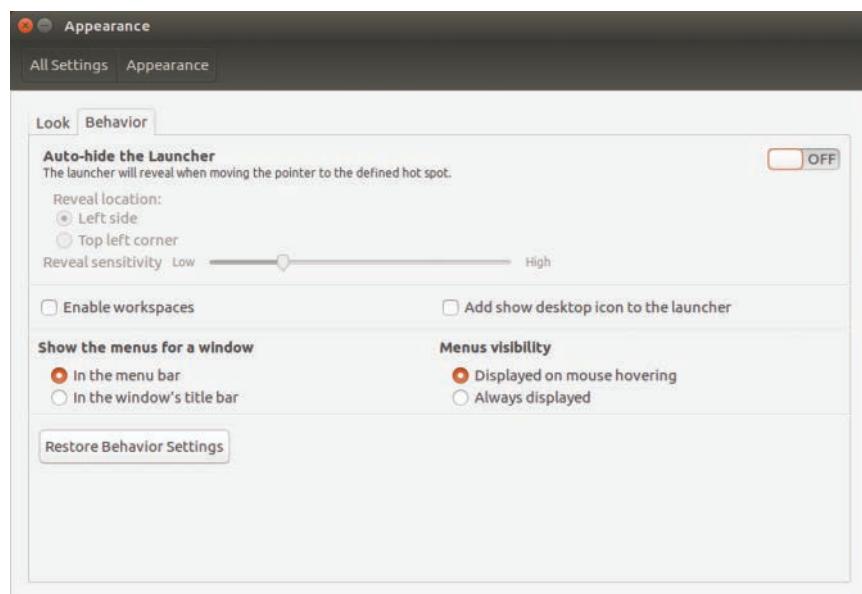


Figure 5-8 Appearance tool: Behavior tab

Unity Tweak Tool

As mentioned earlier, Unity Tweak Tool is a third-party tool, which was created by the Freyja Development Team. To find out more about the team, go to <https://launchpad.net/~freyja-dev>.

If you followed the instructions to download the Unity Tweak Tool earlier in this chapter, great. If not, you may want to do so now. This tool allows users to tweak four different areas of the Unity desktop.

Unity

Here, you will be able to change settings for the Launcher, Search, Panel, Switcher, Web Apps, and more.

The Launcher tab (Figure 5-9) allows you to change the color, transparency, icon size, autohiding, animations, and more.

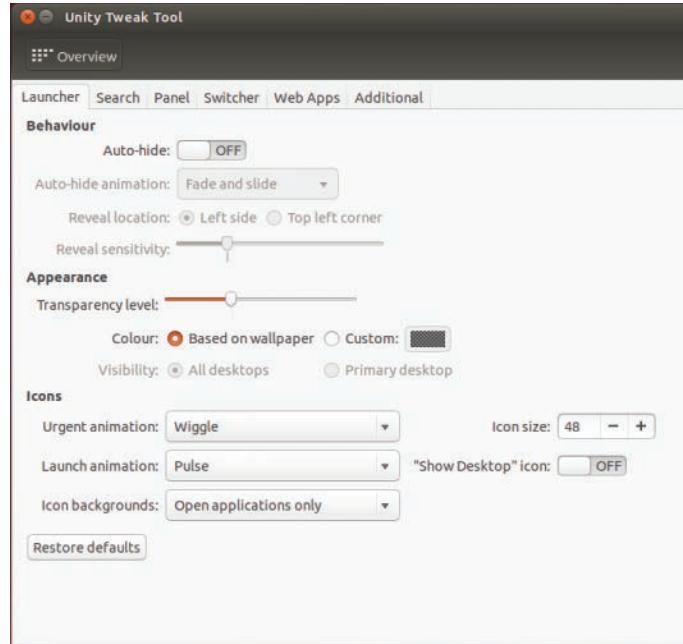


Figure 5-9 Unity Tweak Tool: Launcher tab

The Search tab (Figure 5-10) allows you to change the blur of the Dash, and some other features as the display of suggestions, as well as recently used applications.

The Panel tab (Figure 5-11) allows you to change settings for the top panel. It includes transparency and the display of certain system-based indicators.

The Shifter tab (Figure 5-12) allows you to specify settings and shortcuts for the applications switcher.

On the Web Apps tab (Figure 5-13), you can decide whether you want to enable prompts for Web Apps and specify the preauthorized domains.

The Additional tab (Figure 5-14) allows you to change keyboard shortcuts as well as enable the HUD to remember previous commands.

Window Manager

The Window Manager allows you to customize how Ubuntu manages windows.

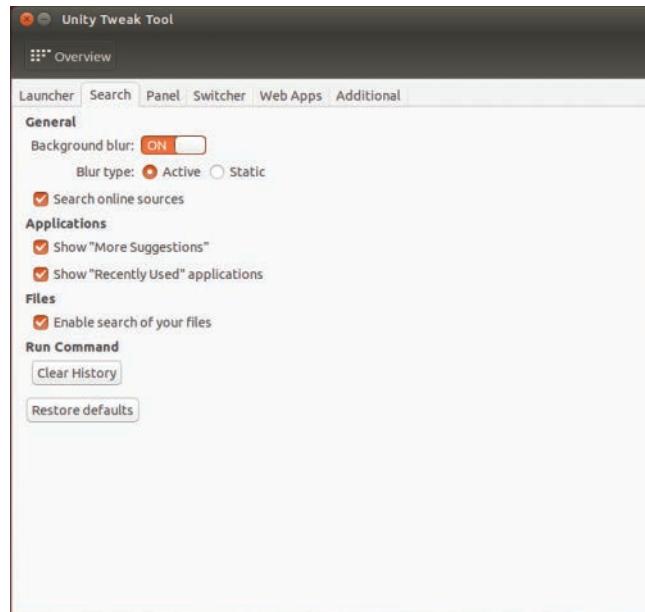


Figure 5-10 Unity Tweak Tool: Search tab

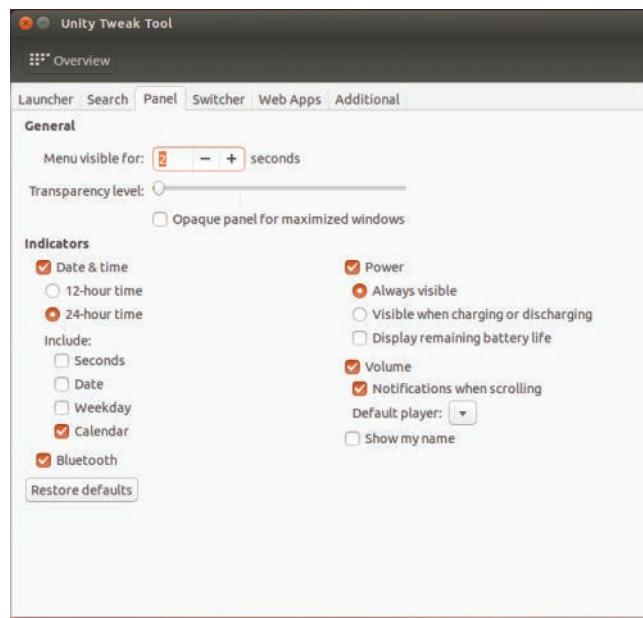


Figure 5-11 Unity Tweak Tool: Panel tab

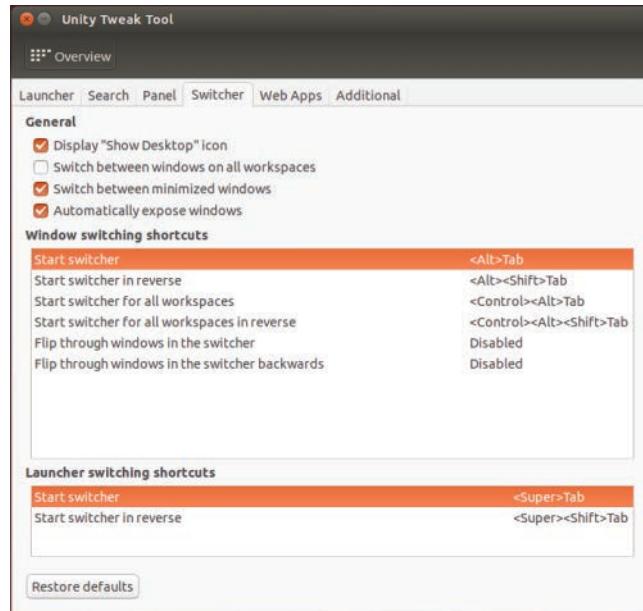


Figure 5-12 Unity Tweak Tool: Shifter tab

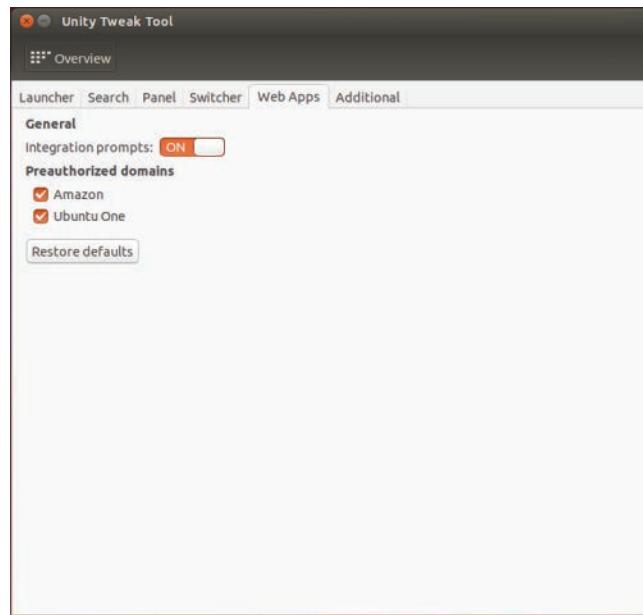


Figure 5-13 Unity Tweak Tool: Web Apps tab

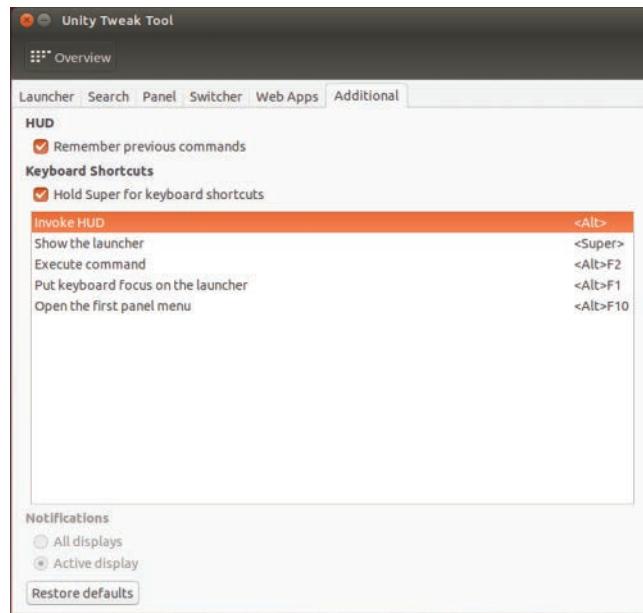


Figure 5-14 Unity Tweak Tool: Additional tab

Appearance

The Appearance section allows you to change the system theme, icons, cursors, and default fonts, as well as the side where the *close*, *minimize*, and *maximize* buttons are located.

System

The System section allows you to set the default desktop icons, disable some features for security reasons, and set some scrolling options.

Play around with all these settings. Unity Tweak Tool is a very forgiving tool. If you don't like the tweaks you are making, simply click the Restore Defaults button found on every tab, and you'll be able to start your tweaking adventure all over again.

Compiz Config Settings Manager

Compiz Config Settings Manager is a configuration tool for Compiz with which you may want to become familiar. To get started with the Compiz Config Settings Manager, you will need to install it from the GNOME Software Center, launch it from the Launcher by clicking the Super key to bring up the Dash, and type "Compiz." Click on the Compiz Config Settings Manager icon to launch this tool. The first time you open this manager, you will get a warning (Figure 5-15). Although it is an incredible tool, Compiz Config Settings Manager is not as forgiving as the Appearance and Unity Tweak tools. Users are cautioned to use Compiz (Figure 5-16) with care, as you may end up with an unusable desktop if you make too many errors.

When you open Compiz Config Settings Manager, you'll notice that some of the categories have the boxes beside them checked. This is because those areas have been integrated with the Unity desktop.

Let's take a closer look at the features offered with Compiz Config Settings Manager.

In the upper-left corner of the Main view, you'll notice a search box (Figure 5-17). It can be used for quick and easy filtering of the plug-ins list



Figure 5-15 Compiz Config Settings Manager warning

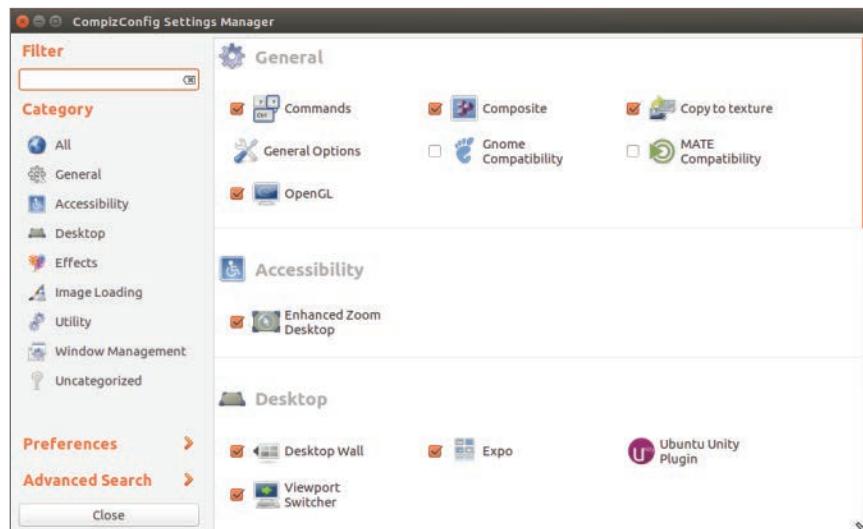


Figure 5-16 Compiz Config Settings Manager main view

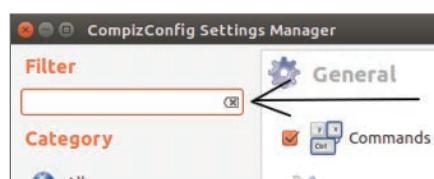


Figure 5-17 Compiz Config Settings Manager search box

using the text you type in the search box. The search box can also be used like a filter for the options on various plug-in pages.

The Advanced Search button at the lower-left corner of the Main view (as seen in Figure 5-18) allows you to filter through all the options of all the plug-ins. Please note this may take a while to load. Advanced Search allows you to search by name, long description, and the values you have set. Once you have a list, you can click on the plug-in and see which groups contain the option you searched for.

The plug-ins for the Compiz Config Settings Manager are divided into eight categories:

1. **General:** Contains the core plug-ins (Figure 5-18).
2. **Accessibility:** Contains plug-ins to make the desktop easier to use, especially for those individuals who have a reading or viewing disability (Figure 5-19). The Enhanced Zoom plug-in magnifies the whole screen on demand.
3. **Desktop:** Contains plug-ins to configure how the desktop behaves (Figure 5-20).

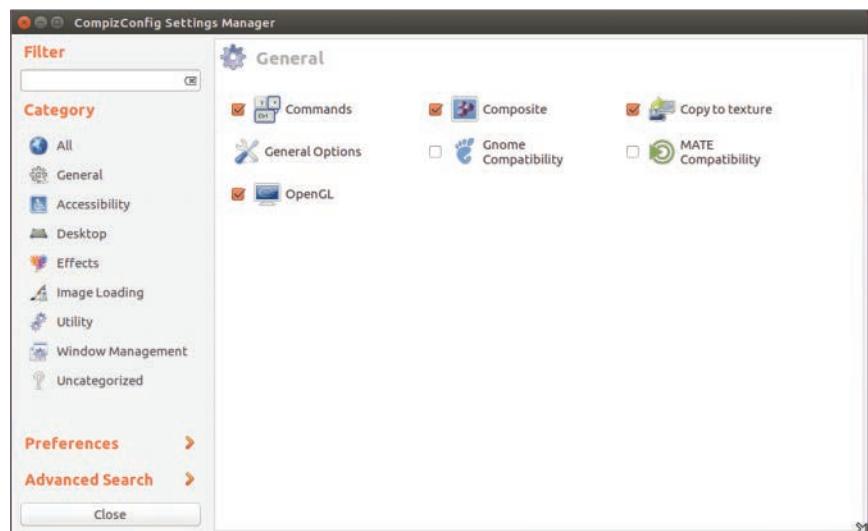


Figure 5-18 Compiz Config Settings Manager General category

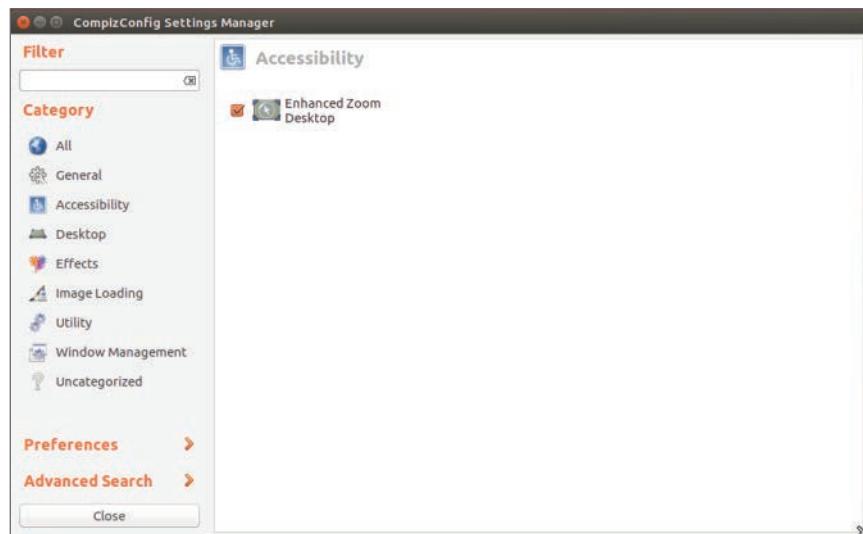


Figure 5-19 Compiz Config Settings Manager Accessibility category

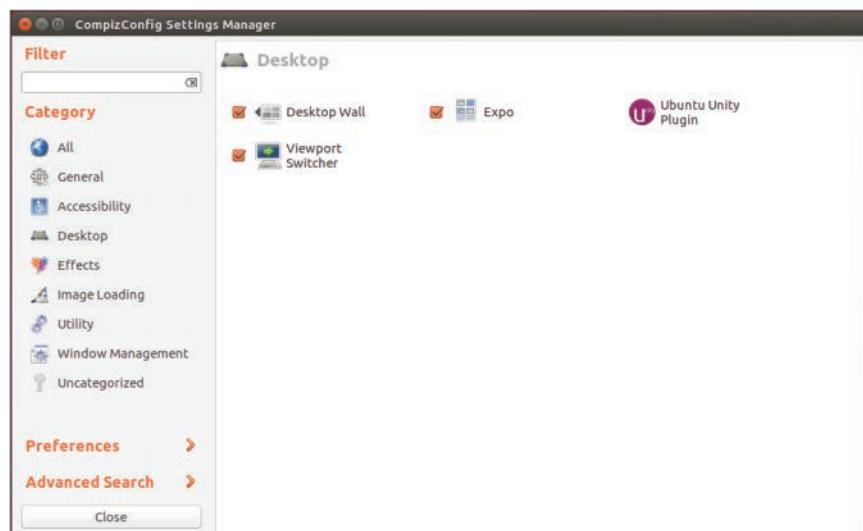


Figure 5-20 Compiz Config Settings Manager Desktop category

4. **Effects:** Contains plug-ins to configure various animations and effects, such as Fading Windows (Figure 5-21).
5. **Extras:** Contains plug-ins that serve a minor or ambiance purpose like annotate.
6. **Image Loading:** Contains plug-ins that allow various image formats to be loaded (Figure 5-22).
7. **Utility:** Contains plug-ins that provide internal functionality like Regex Matching (Figure 5-23).
8. **Window Management:** Contains plug-ins that provide basic to advanced window treatment functionality, like moving windows (Figure 5-24).

NOTE Use caution when working with Compiz Config Settings Manager because you can render your desktop unusable. Make sure you are familiar with how to recover your desktop from the command line.

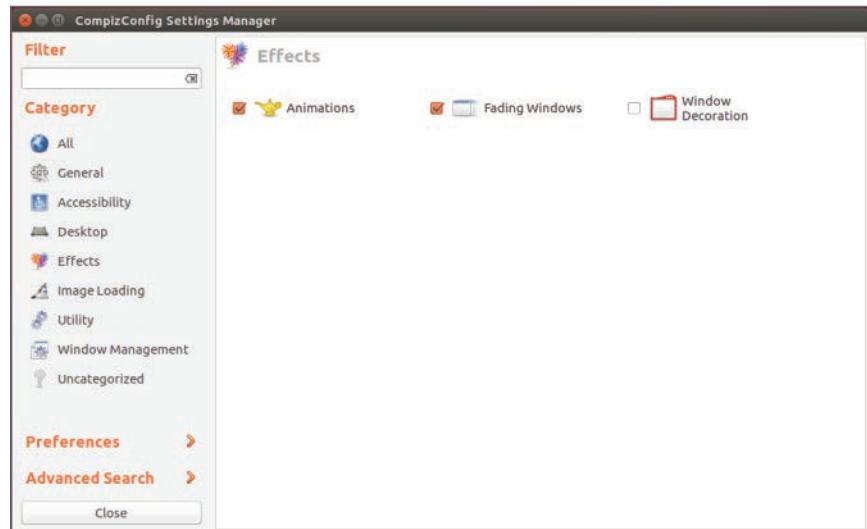


Figure 5-21 Compiz Config Settings Manager Effects category

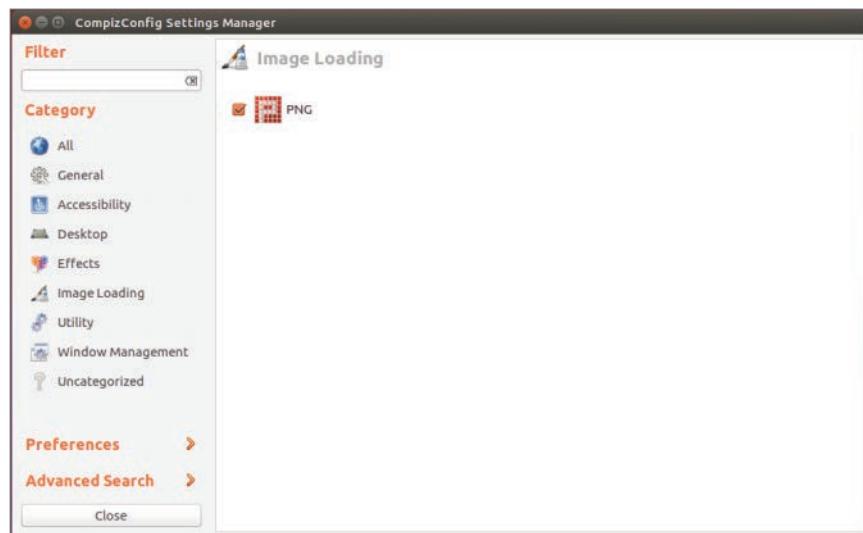


Figure 5-22 Compiz Config Settings Manager Image Loading category

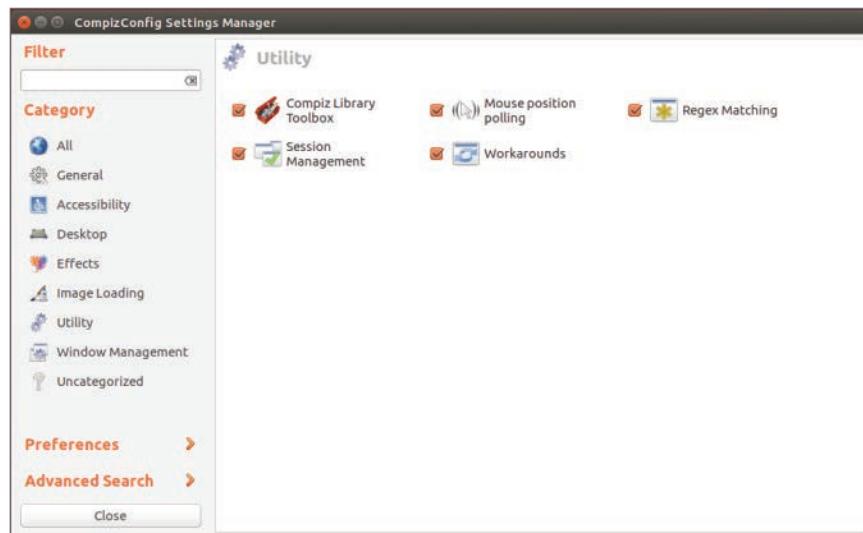


Figure 5-23 Compiz Config Settings Manager Utility category

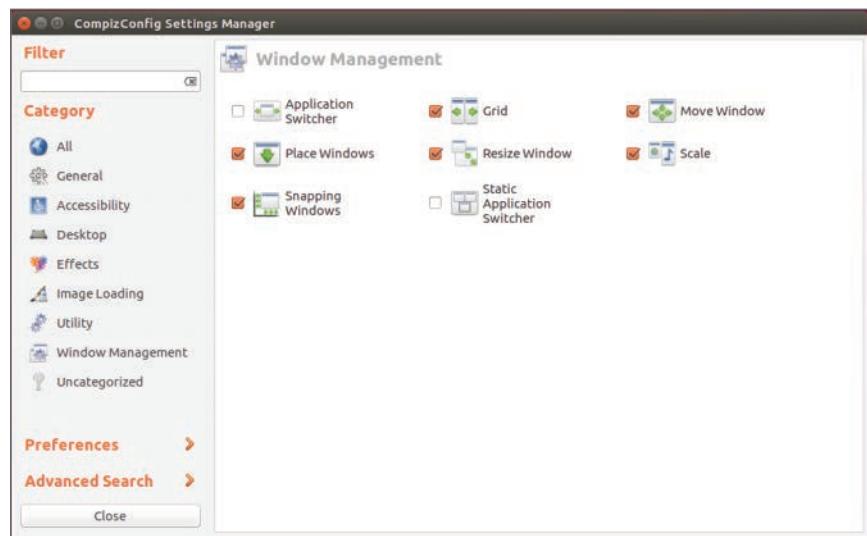


Figure 5-24 Compiz Config Settings Manager Window Management category

To become more familiar with Compiz and the Compiz Config Settings Manager, go to www.compiz.org.

Unity Lenses and Scopes

The Dash is one of Unity’s main features. It allows users to search for information both locally and remotely using Lenses. Each Lens is responsible for one category of search results for the Dash.

By itself, the Lens is not very useful, because it doesn’t perform the search. Instead, the Lens relies on one or more *Scopes*, which are the actual search engines, to return the search results.

In the terminology section of Chapter 3, we looked at the music Lens. This Lens has two Scopes, which means that four processes are involved in searching the music category for content: the Dash, the Lens daemon, first Scope daemon, and second Scope daemon.

As a user, you won't even notice the complex process the Lens performs to keep everything in sync. You can just enjoy the benefits of being able to quickly search various categories of information.

NOTE For more information on how Lenses work and are created, see the Lens Guidelines wiki at <https://wiki.ubuntu.com/Unity/Lenses/Guidelines>.

It seems that everyone has a favorite Unity Lens. By default, Unity comes with the following Lenses: Applications, Files, Music, and Video.

Additional Resources

In this chapter, we looked at three tools you can use to tweak your Unity desktop: Appearance, Unity Tweak Tool, and Compiz Config Settings Manager. Other tools and resources are available to help you personalize your desktop environment. A wealth of help and documentation is also available online. If you ever find yourself stuck, take a look at the Ubuntu Web site at www.ubuntu.com or the Ubuntu documentation at <https://help.ubuntu.com>, and make use of Ask Ubuntu, the forums, wiki, mailing lists, and IRC channels.

Summary

In this chapter we outlined several ways to customize your Ubuntu experience. Changing the Unity desktop from its default settings is not something everyone will want or need to do, but knowing how to do so is both useful and sometimes necessary.

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