Part I

Meet GIMP

IN THIS PART

CHAPTER

1

What Is GIMP?

GIMP, GIMP, GIMP... oh what a name for an image editing program! With a name that's an acronym for GNU Image Manipulation Program, GIMP is the foremost application for raster graphics in the Free Software world. It's used for a variety of tasks ranging from photo editing and digital painting to batch image processing and traditional-style animation. If you have any interest in creating digital images, chances are good that you've at least heard of GIMP and perhaps even tried using it.

Whether you're a digital artist on a budget, an aspiring student, or just someone who needs a graphics program with more advanced features than those found in the simple paint program that may have come with your computer, GIMP is well-suited to helping you turn your ideas into images. You can start with a digital photograph, artwork from a scanner, or work from a blank canvas and create complete graphics from scratch. It's a great tool for getting the job done.

GIMP was born as a university project for two developers, Peter Mattis and Spencer Kimball, to fill the need for an advanced image editing program in the Unix and Linux environments when none existed. It has since grown to be an extremely influential force in the Linux world. In fact, the toolkit that was used to create GIMP's interface has been extended and expanded to become the basis for one of Linux's most popular desktop environments, GNOME. But although GIMP is included by default on nearly all popular distributions of Linux, you don't have to be a Linux user to take advantage of it. GIMP is a truly multiplatform program also available to Microsoft's Windows and Apple's Mac OS X users.

IN THIS CHAPTER

Understanding GIMP's capabilities and limitations

Becoming familiar with GIMP's interface

Looking at preferences and customization

Perhaps GIMP's most valuable feature is its free and open nature. Not only is GIMP "zero money-out-of-pocket" free, but it's also "free speech" free. That is, GIMP is developed by an international team of volunteer programmers who have agreed to keep the program's source code freely available for anyone to see, modify, and extend. Not only does this produce solid, powerful software, but it also provides a level of customization that makes GIMP very appealing to independent artists, small graphics companies, and computer graphics researchers, to name a few. With GIMP, you have the advantages of your own in-house graphics program without having to hire a team of programmers to lay the groundwork for you. This means that if GIMP doesn't have a feature and you need it, you have the option to add that feature yourself (or hire only one programmer to do it). That's from an artist's point of view. From a developer's perspective, having GIMP as a base starting point allows you to focus on creating the unique features that *you* need.

What Are GNU and Free Software?

If you're coming from the world of Windows or Macintosh, then the concept of Free Software may not be something you're too familiar with. Simply put, *Free Software* is software that you can use, modify, and share with virtually no restrictions. Although it's often distributed free of charge — occasionally referred to as ''free as in beer'' — Free Software is not to be confused with ''freeware.'' This is because of the all-important freedom to modify Free Software programs to do whatever you like. This is commonly referred to as being ''free as in speech'' and it's the primary thing that sets Free Software apart from software that's merely given away for free. For a program to be considered Free Software, users must be allowed unrestricted access to that program's source code. It is for this very reason that programs like GIMP can exist.

At this point, you may find yourself wondering why any software developer would ever give away their work for free. The answer to that question is surprisingly simple, but it varies from person to person. For some people, it's the idea that your computer (and everything on it) belongs to you and you should be allowed to use your computer as you see fit, without restriction. For others, it's a philosophy that stems from the belief that software is information and information should be freely available to everyone. And still other people approach it more pragmatically, noting that freely accessible source code is under the scrutiny of more eyes, ultimately leading to more stable software with fewer bugs and a lower probability of doing malicious things to your computer. Oftentimes, a Free Software developer's ideals involve a combination of these perspectives. The one commonality, though, is that they do this because they enjoy it. It's fun!

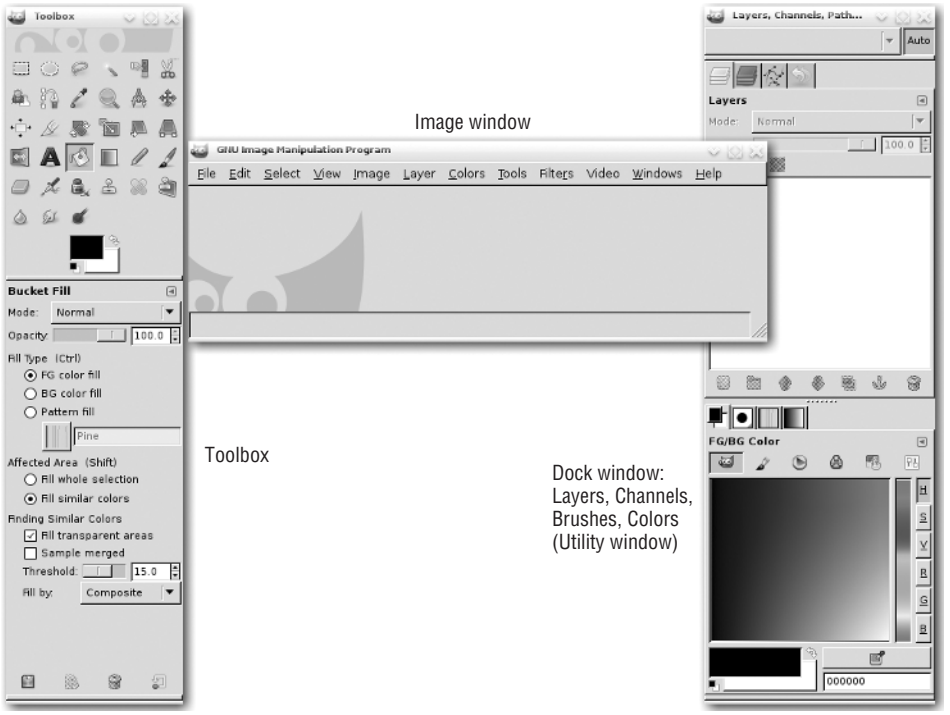
At the core of most Free Software projects — GIMP included — is a software license called the *GNU General Public License*, or GPL. This license is a clever use of copyright law that says you're free to modify a program and redistribute it, so long as you also make the source code to your changes freely available. Because this is basically using copyright law against itself, the GPL is often referred to as a *copyleft* license. The GPL was originally written by the founder of the Free Software Foundation, Richard Stallman, for the GNU Project. GNU is an acronym that stands for ''GNU's Not Unix'' and it was Stallman's project, which he started in 1983, to create a Free Software operating system. By 1992, the GNU Project had all of the necessary elements for this operating system with the exception of one thing: a central core to interface with hardware and manage processes, known as a *kernel*. Serendipitously, it's right around this time that a Free Software kernel developed by a Finnish programmer by the name of Linus Torvalds began reaching a usable level of maturity.

This kernel, Linux, filled in that last gap and gave the GNU Project (and the world), a working Free Software operating system. Because of this, the operating system's proper name is GNU/Linux. However, for the sake of simplicity and common discourse, this book will simply refer to it as Linux. The GNU is implied.

Of course, it's not all roses and cake. GIMP is often suggested as a replacement for Adobe Photoshop and, as a result, has received a fair amount of criticism based on the comparison; some of it well-deserved. Probably one of the most controversial subjects is GIMP's interface, shown in Figure 1-1. It's been called everything: unconventional, obtuse, brilliant, and some things I can't repeat in this book. GIMP gets a bit of an unfair shake due to the proliferation of Photoshop; its interface isn't so much bad — it's just different. That's not to say that it's perfect, though. There are certainly some interface quirks you need to deal with. Part of the purpose of this book, however, is to help you work *with* GIMP's interface rather than against it. Hopefully with this book as your reference, you'll find that you will be limited only by your imagination when working with GIMP.

FIGURE 1-1

What you're greeted with by default when you open GIMP



The remainder of this chapter lets you hit the ground running, introducing you to GIMP's interface and letting you play with it. Before doing that, though, you need to have GIMP installed on your computer. Fortunately, GIMP is completely free and available for you to download off the Internet. Regardless of whether you're running Linux, Mac OS X, or Windows, the place to find the latest and greatest version of GIMP is on its web site at `www.gimp.org`. Each operating system has its own set of installation instructions for GIMP. As a matter of fact, `www.gimp.org` actually links to other sites for downloading and installing on Mac OS X and Windows. Because of this, you may want to take a look at Appendix A in this book for clear instructions on installing GIMP for your specific operating system.

Knowing What GIMP Can and Cannot Do

So what exactly can this little program do? GIMP is an extremely capable piece of software that can do quite a few things other image editing programs can't do, but it's helpful to have a clear understanding of where its current limitations lie. This book focuses on the features planned for or available in GIMP's 2.8 series, and for general-purpose graphics work GIMP performs admirably. However, print professionals may miss some useful features that they would expect from a raster graphics program like Photoshop.

For example, GIMP supports RGBA (Red, Green, Blue, Alpha) images with 8 bits per channel, grayscale images, and images with a fixed color palette. However, it does not currently have native support for the more print-friendly Pantone or CMYK (Cyan, Magenta, Yellow, Black) color spaces or images with 16 or 32 bits per channel. This makes it less capable for use in print and film because the CMYK color space can't produce all of the colors available in RGB, and film image editing requires the refined detail of high bit-depth color.

That's not to say there aren't ways around this. GIMP can still do CMYK color separations and, with a plug-in, export images in CMYK. It can also read the raw image data from many digital cameras, although it can't save back to those formats. You may also be surprised to know that GIMP does support embedded color profiles and allows accurate on-screen print simulation using integrated color management tools.

GIMP also has an advanced layer system that allows for all sorts of complex compositing tricks and it supports an impressively extensive list of image formats, including Photoshop's native PSD format. That's not to say that the support is seamless. Because GIMP doesn't have adjustment layers like Photoshop, reading PSD files that utilize adjustment layers lets you see the data in that layer, but none of the adjustment layer tricks that were used.

Most of these limitations are technical and it's largely just a matter of time before GIMP overcomes them, thanks to the very active developer and user community around GIMP. And contrary to a fairly vocal minority, these limitations *don't* prevent GIMP from being usable for professional work. A few limitations, however, like support for the Pantone color matching system, are based on proprietary information and algorithms. This means that because of GIMP's developers' dedication to keeping its source code freely available, that feature cannot be legally implemented and distributed with GIMP. However, the flip side to this is that the

ability to extend GIMP is not limited to a small group of privileged programmers. *Anyone* can add to, improve, and even change GIMP to suit their specific needs. It cannot be overstated how valuable this extensibility is. It's one of the beautiful things about Free Software. It's that potential for anyone's specifically added feature to benefit everyone who uses the program. Like other creative software in the Free Software world, GIMP has benefited greatly from the contributions of artists who had never written code before in their life, but because of its openness, they were able to add a new feature that they needed.

However, perhaps the best way to understand what GIMP is capable of is to see the results for yourself. GIMP was used to capture all of the figures in this book. Along with downloading and using the program yourself, this is probably the best way to get an idea of what GIMP can do.

Working with GIMP's Interface

So let's get started with this and get your hands dirty. When you start GIMP for the first time, one of the first things that you might notice is the number of windows that it opens. This is especially noticeable to Windows users who are used to programs occupying a single space on their taskbar. This multi-windowed environment comes from GIMP's origin in Linux and Unix, with their unique and varied means of window management. Fortunately for the users who find this to be troublesome, this situation has been somewhat rectified as of GIMP 2.6.1 for Windows and Linux users and will continue to improve in future versions of GIMP. I cover this improved window behavior in more detail later in this chapter in the "Setting Preferences" section. The purpose of this chapter is to get you familiar with the main parts of GIMP so you can get up and running and then right to work quickly. Refer to Figure 1-1 to see the default layout of GIMP when you load it for the first time.

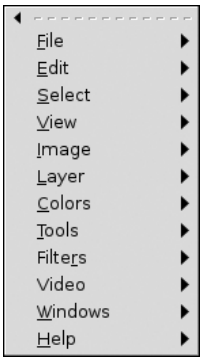
Windows and Menus

When you launch GIMP, you're greeted with a splash window that displays while GIMP preloads plug-ins and extensions into memory. This should only take a few seconds. Once GIMP loads, you typically have three visible windows on-screen: the Main Toolbox, shown in Figure 1-1, on the left, an image window at the center, and a dock on the right that includes dialogs for layers, brushes, and palettes. Each of these windows serves a specific important purpose in GIMP, but as you may have guessed, the main image window with the menu along the top is where all of the action starts. Practically all editing operations can happen directly from image windows and their menu options. When you do not have images loaded, all you have is a gray box with a silhouette of Wilbur, the GIMP mascot, and the menu bar at the top. However, when you load your first image in GIMP, it's placed in this window. If you have more than one image open, each one gets its own image window with its own accompanying menu options.

You will find the same menu options are available by right-clicking anywhere within the image area of any image window. When you right-click your mouse, you invoke a menu like the one shown in Figure 1-2. For users of other programs that do not supply this option, this may seem a bit strange, but I personally love it because I don't have to move my mouse as far to get to the menu item I'm looking for.

FIGURE 1-2

The menu that pops up when you right-click in the image window



Another thing that's a little bit different in GIMP from other software is that most of its windows and dialogs are functionally *non-blocking*. This means that just because you have the File Open, File Save, or Preferences windows up, GIMP does not prevent you from changing tools in the Toolbox or even doing edits on your image. This is incredibly useful in terms of productivity. You can be doing a time-consuming operation on one image and GIMP won't prevent you from working on another image while that happens. You can customize your preferences on the fly and change them while you're working to suit your needs as you roll along. Basically, GIMP sticks to doing what you tell it to do and does everything in its power to get out of your way while you're working.

The menu options available to you in the image window give you access to nearly every available action in GIMP. Here's a quick heads-up on what you can expect to find in each menu item:

- **File —** This is where most of GIMP's file operations live. From here you can open, close, create, save, and export images. This menu also gives you the ability to acquire images like screenshots and images from a scanner. You can find more on the items accessible via the File menu in Chapter 3.
- **Edit —** The Edit menu is where a lot of the basic work gets done on your images. From here you can copy, paste, undo, and do basic actions like filling and stroking.
- **Select —** From this menu, you can control your selections within the image window. Not only do you have control over what's selected, but you can also control what GIMP does with that selection.
- **View —** This menu has a big influence on how you interact with the image window. Not only can you control zoom from here, but you can also show and hide features like guides and layer boundaries as well as turn on snapping.
- **Image —** This is where a good portion of the "heavy lifting" happens when you're working on an image. Chapter 2 has a lot more detail on the options here, but this menu allows you to perform basic transforms, size adjustments, cropping, and even a little bit of minor layer management.

- **Layer —** Of course, the really extensive layer management tools are in this menu. Nearly all of the functionality of the Layers dialog can be accessed from here, although it may be a bit more difficult. Chapter 6 is all about layers and covers this menu extensively.
- **Colors —** If there's anything color-related that you need to do, chances are good that it's going to happen by way of this menu. A whole bevy of color operations live here and each one is helpful for enhancing your images. You can find out more about this menu and adjusting colors in GIMP in Chapter 9.
- **Tools —** This menu is basically the functionality of your Toolbox all in one menu.
- **Filters —** Probably one of the largest, most extensive menus in all of GIMP, the Filters menu has an almost excessive number of potential ways to perform semi-automated effects on your images. This menu is so extensive and has so many options that all of Part IV is devoted to its contents.
- **Video —** The Video menu isn't available in most default installations of GIMP. It's included as part of the GIMP Animation Package, or GAP, and has some incredibly useful functions for modifying video and animation frames from within GIMP. Chapters 19 and 20 cover this functionality in depth.
- **Windows —** GIMP offers the potential to have quite a few open windows on your screen simultaneously. It's in your best interest to be able to manage those windows effectively. This menu is your tool to do just that.
- **Help —** No matter how long you've used a program as full-featured and complex as GIMP, there's a good chance that you'll need help with something somewhere along the line. This menu is your route to finding the help you need.

Another important thing to note is that you're not limited to just the three default windows that appear when you first load GIMP. Nearly every part of GIMP's interface can be detached and turned into its own window, including the main menu! Take a look back at the right-click menu in Figure 1-2 and notice the dashed lines at the top of it. If you left-click this dashed line, it will create another floating window just for this menu. To remove this window, simply click the dashed line again. Furthermore, notice that each of the submenus also features this dashed line. They can also be detached and turned into their own windows. You might find yourself asking why you'd ever want to do something like that, but imagine that you're performing the same operation over and over again. Simply clicking the same option more than once in a persistent menu is a lot faster than having to navigate from the base of the main menu every single time.

Warning

It's important to note that if you close the last remaining image window, GIMP quits and you will have to relaunch it. This isn't the case with the Toolbox or dock window. You can freely close either of these. The Toolbox can be returned by going to Windows ➪ Toolbox (Ctrl+B) and the dock window can be brought back at Windows ➪ Recently Closed Docks ➪ Layers, Channels, Paths, etc. ■

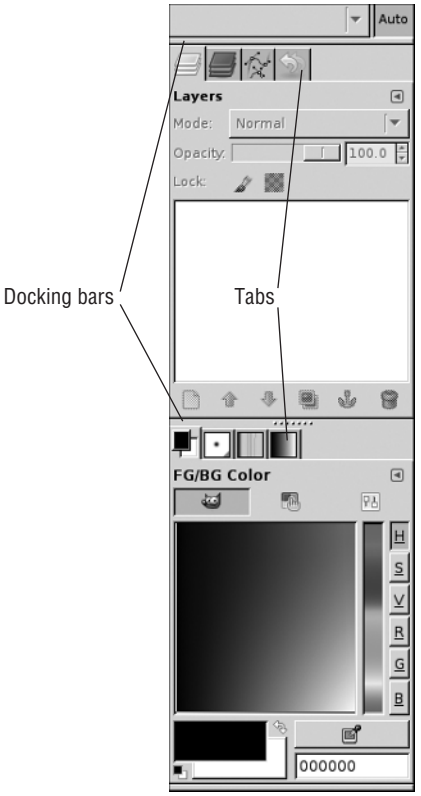
Docks and Dialogs

Of course, menus aren't the only thing that can be detached. Each of GIMP's other two main windows are composed of a set of dockable dialogs that work as panels and can be detached,

shuffled, and re-attached at will. This is most valuable in the dock window on the right-hand side with the layers, palettes, and brushes dialogs. By default, this window has two docks, separated by docking bars, as shown in Figure 1-3. The top dock holds dialogs for Layers, Channels, Paths, and GIMP's Undo History. The lower dock holds Brushes, Patterns, Gradients, and the Color Palette dialog. In each dock, the individual dialogs are accessible by the tabs at the top of the dock or by picking the dialog from Windows ➪ Dockable Dialogs. If the icon in the tab isn't enough to remind you what the dialog is, you can hover your mouse over the tab for a few seconds and wait for the tooltip that describes the dialog to pop up.

FIGURE 1-3

The right-side utility window with the two default docks



You can resize the docks by left-clicking and dragging the docking bar that separates them. This is useful with more complex GIMP files that have a fairly high number of layers because it allows you to see as many of them as possible at the same time. You may notice that the docking bars at the top and bottom of the dock window are not draggable. However, if you hover your mouse over any of these docking bars for a couple seconds, a tooltip appears saying "You can drop dockable dialogs here." To see how this works, left-click the tab for the Layers dialog and drag it up to the top docking bar. When your mouse pointer hovers over the docking bar, it should

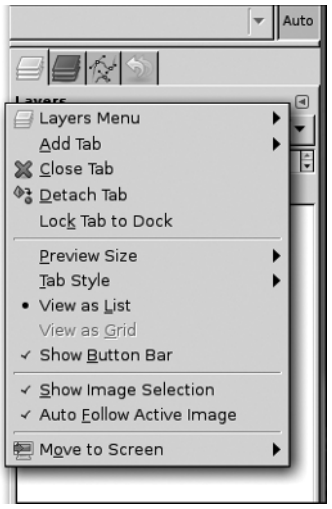
become highlighted. Release the left mouse button and you'll see that you've created a new dock at the top of this window. Notice that because this new dock has only the Layers dialog, there are no tabs at the top, just the word "Layers." You can move the Layers dialog back to its original position by left-clicking that word, Layers, and dragging it to the dock below. You should notice that as you drag your mouse around the dock, certain parts get an outline or highlight. This is so you can tell exactly where you're placing the dialog. You can even use this to customize the order of the tabs in a particular dock. Just left-click the tab in question and drag it forward or back in the arrangement of tabs.

You can also completely detach any dockable dialog and let it float independently in its own window. As an example of how to do this, left-click the Layers tab at the top dock and drag it off the window. When you release your mouse button, a new window is created with the Layers dialog in it. From here, you can re-dock the Layers dialog the same way you would if you'd put it in its own dock. Alternatively, because you've created a new window with its own new dock, you could also take some of the other dialogs and dock them here. This is a great way to customize your GIMP layout to match your specific work style.

Clicking and dragging aren't the only ways to customize your GIMP layout. Many of these functions can be controlled from a Tab menu at the top of each dockable dialog. In Figure 1-3, notice a left-pointing triangle in a box at the top right of each dock. This is the Tab menu. Clicking it gives you a menu similar to the one you see in Figure 1-4.

FIGURE 1-4

Options available in the Tab menu



This menu allows you to do most of what you can do by mouse-clicking and dragging, as well as offers some specific controls for the dialog that you're currently working in. Following is a brief explanation of what each option does.

- **Dialog-specific context menu —** Not all Tab menus have this one. However, for some dialogs, like Layers, Channels, and Paths, the first item of the Tab menu is a submenu to address specific features available to that dialog.
- **Add Tab —** This menu item brings up a submenu from which you can choose another dialog to add to the dock you're working in.
- **Close Tab —** Clicking this item removes the current dialog from the dock.
- **Detach Tab —** This item performs the same function as left-clicking and dragging the dialog off to create a new window and dock.
- **Lock Tab to Dock —** Enabling this option prevents you from detaching the current dialog from the dock. This is a good way to keep you from accidentally removing or moving a dialog.
- **Preview Size —** Like the dialog-specific menu, this option is only available on some dialogs, like Layers and Channels, which utilize small versions of the image you're working on. The options in this submenu allow you to control the size of those small images.
- **Tab Style —** By default, GIMP uses icons for all of the tabs. However, some people like having a little bit more clarity. The options available in this submenu allow you to customize how the dialog appears in the tab. You can have it show an icon, text, or both. Some dialogs, like Brushes and Patterns, also offer specialized options for Status, which shows an icon of the currently selected brush or pattern in the dialog.
- **View as List/Grid —** These options are only available on some dialogs and are mutually exclusive; you can use only one or the other. The best way to see it in action is to look at the Brushes dialog. By default, this is set to View as Grid. However, from the Tab menu, you can change it to View as List to get a little bit more information about each brush.
- **Show Button Bar —** By default, at the bottom of each dialog in the dock is a button bar with a set of quickly accessible buttons for doing common tasks with that dialog, such as saving presets or adding a new layer, channel, or brush. This menu item shows or hides the button bar for the dialog you're currently working in.
- **Show Image Selection —** At the very top of Figure 1-3 is a wide drop-down button with an image preview in it. This is the Image Selection drop-down and it allows you to pick the image that you want the dialog to give you information about. It's not available for all dialogs, but for the ones that use it, this menu item toggles its visibility.
- **Auto Follow Active Image —** By default, the Image Selection drop-down will automatically switch based on whichever image window is active, or in *focus*. However, there may be an occasion when you want to, for example, see the layers of one image while you're working on another. Toggling this option off will allow you to do just that. You can also do the same thing by clicking the Auto button next to the Image Selection drop-down.
- **Move to Screen —** If you're using GIMP in Windows, you may not see this option. This menu item takes advantage of a multi-display feature of the X Windowing System used on Linux and Unix machines. It allows you to do cool things like run GIMP on one computer and control it from another. In a case like that, each computer is considered a screen. This submenu allows you to send a GIMP dockable dialog to another screen. As of this writing, this feature is currently experimental and may crash GIMP. There's a chance it may not be in GIMP 2.8.

If you look in the Add Tab item of the Tab menu, you can get a good idea of the different dockable dialogs available to you. You can see this same menu if you go to an image window and click Windows ➪ Dockable Dialogs. Each of these dialogs has a specific use and purpose that can really help your productivity when used effectively. The following list is a quick run-down of each dialog and what it can be used for.

- **Tool Options —** For whichever tool you have selected, this dialog will show available options for it. By default, this dialog is the dock beneath the tools in the Toolbox window.
- **Device Status —** This dialog is most useful for users with a drawing tablet. It not only shows if you're currently using the mouse, stylus, or eraser, but also which tools are assigned to each of these. If you have a drawing tablet, check out Appendix B to see how to configure GIMP to recognize it.
- **Layers —** From this dialog, you can see the layers in the file you're working on as well as add, rearrange, merge, and remove layers. Because this dialog is so frequently used, there's a default keyboard shortcut for it: Ctrl+L. Chapter 6 covers layers in detail.
- **Channels —** This dialog serves dual purposes. Its primary use is to allow you to select and visualize the individual color channels in your image. However, if you are using selection masks, this dialog is also where those masks call home. You can find more on channels and this dialog in Chapter 7.
- **Paths —** Paths are curves that you can create in GIMP and use to create selections, masks, and even draw with. This dialog allows you to manage the paths you create. You can find out more about paths in GIMP by looking at Chapter 5.
- **Colormap —** If you're working with an image that has an *indexed color palette*, such as a GIF, where the image consists of a small number of discrete colors rather than the full RGB color range, you can use this dialog to see these colors and modify them.
- **Histogram —** When working with images, a histogram is a chart that shows the distribution of the values in that image. This is a good statistical way to check the color balance of your image. Note that you cannot edit the histogram from here. To do that, you'll need to use the Levels tool from the Color menu. For more on this, see Chapter 9.
- **Selection Editor —** This is a cool little dialog that comes in handy when you're making selections in GIMP. Not only does it display any current selection, but it also offers a quick way to outline that selection or save it to a channel or a path.
- **Navigation —** The Navigation dialog offers a quick and painless way to zoom in and see specific parts of your image. It's particularly helpful on very high-resolution images.
- **Undo History —** This dialog shows a list of each of the actions you perform on an image in chronological order and allows you to undo and redo them. Two things to note here, though. First, when you close a file, its undo history is not saved with it; you lose that data. Also, you cannot arbitrarily undo just one action in a series of actions. If you undo something, you basically go back to the last action you did before it.
- **Pointer —** The Pointer dialog is a lot more useful than you might think. It gives you immediate and exact feedback about where your mouse is in your image. This is useful not only for picking colors, but also for determining where something is, down to the pixel.
- **Sample Points —** This dialog is similar to the Pointer dialog, but it allows you to pick four specific points in an image you're working on and gives you feedback about them in

real time as you work. This is helpful if you know a specific part of your image is supposed to maintain certain color values and you want to monitor that.

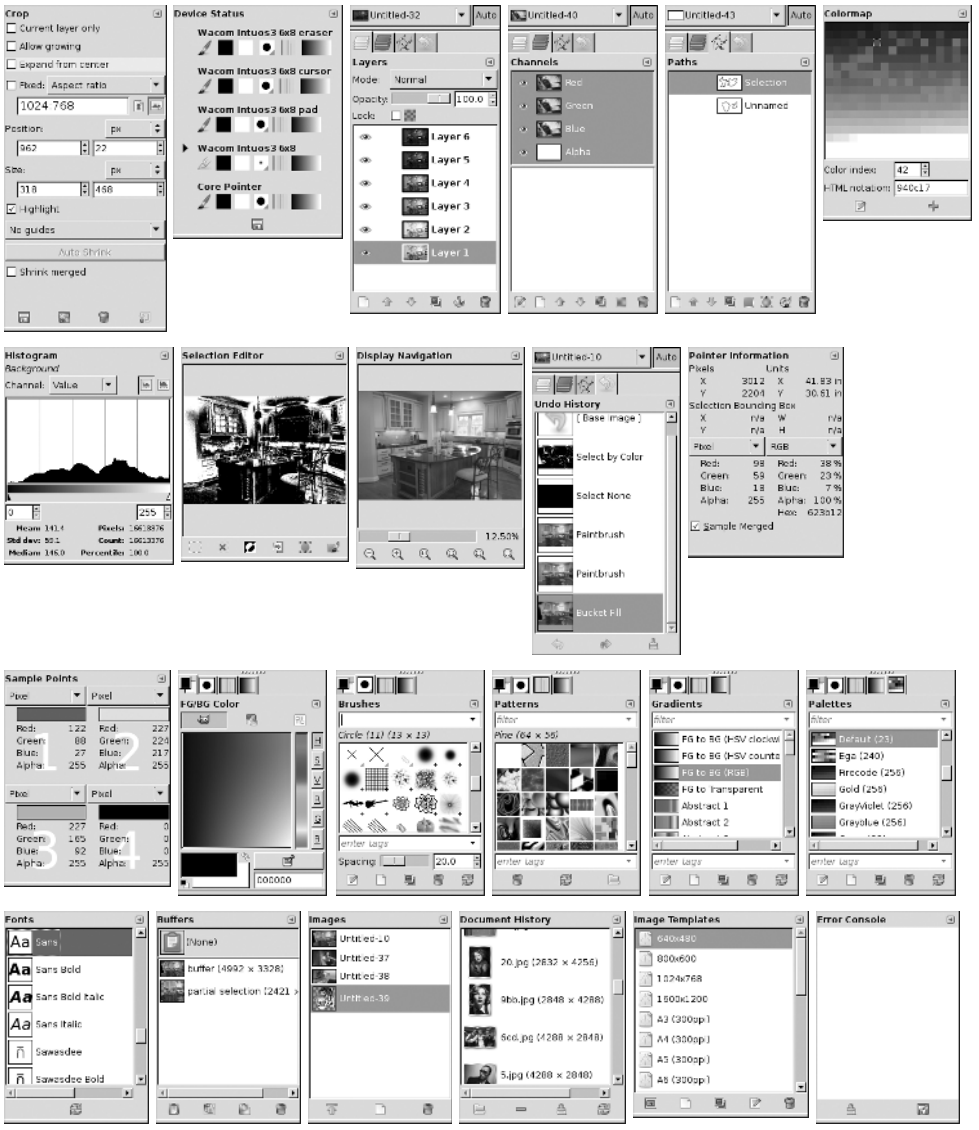
- **Colors —** These are the colors GIMP can use. From this dialog, you can set your foreground and background colors from a variety of color selectors, including the GIMP default, watercolor, wheel/triangle, CMYK, color swatches, or a set of sliders.
- **Brushes —** This dialog is extremely useful when you are painting in GIMP. It allows you to select, edit, and manage your GIMP brushes. Because it's used frequently, its default keyboard shortcut is Shift+Ctrl+B. You can find more information on brushes in Chapter 11.
- **Patterns —** When doing color fills and other automated tasks, patterns can be quite helpful. This dialog helps you manage your patterns from within GIMP. You can access it quickly by using the keyboard shortcut Shift+Ctrl+P. You can find out more about creating patterns in Chapter 11.
- **Gradients —** Gradients are very helpful tools when you are creating images in GIMP and this dialog, which you can quickly access with the Ctrl+G shortcut, is where you manage and modify preset gradients. Chapter 11 shows some tricks on how to get the most out of gradients.
- **Palettes —** Like with the Colormap dialog, this one is specifically useful for images with an indexed color palette. From here, you can choose from a set of preset palettes or create your own.
- **Fonts —** This dialog is specifically meant for the Text tool (see Chapter 10), but it's a good, quick way to see what fonts you have available from within GIMP. Also, if you've added a new font to your system while working, this dialog will allow you to update the list of available fonts without having to restart GIMP.
- **Buffers —** Buffers are pretty useful little things in GIMP. You can take a selection and save it as a buffer by navigating to Edit ➪ Buffer ➪ Copy Named. This adds the buffer to the list in this dialog. From there, you can create a new image with the buffer or paste it back into the image whenever you like. Note, however, that like the Undo History, buffers do not get saved with a file. So if you close GIMP, those buffers are gone forever.
- **Images —** Often when working in GIMP, you may have a large number of images open at the same time. Some image windows may be minimized and others may be hidden or overlapped by larger image windows. This dialog helps you manage the image files that you have open and provides you with a quick way to bring a specific image window into focus.
- **Document History —** This is similar to the Images dialog, except rather than showing the images you're currently working on, this dialog shows the images that you've worked on in the past. This is also like the File ➪ Open Recent menu, but much more extensive and it allows you to remove items from the list or clear it altogether.
- **Templates —** When you create a new image in GIMP, you can custom-set new parameters for the width, height, and default layout of an image or you can choose from a series of preset templates. This dialog allows you to create, modify, and remove templates from that list. It also allows you to quickly create a new image based on any of the available templates in this dialog.
- **Error Console —** The Error console will give you detailed feedback of all the errors, if any, that occur while you're running GIMP. This is helpful for two purposes. The obvious use is if you run into a bug and need to report some detailed information to the GIMP

developers. A less obvious reason, though, is for feedback if you're writing your own scripts to automate processes in GIMP. You can read more about this in Chapter 22.

Figure 1-5 shows what each of these dockable dialogs looks like.

FIGURE 1-5

The dockable dialogs available to you in GIMP



Another useful feature while you're working in GIMP is the ability to quickly get these docks out of your way and simply let you work on the image. You have two primary ways to do this.

The fastest way is to simply press Tab when an image window is your focused window. Pressing Tab hides the Toolbox and any other visible docks. To bring them back, just press Tab again. The other way to get the docks out of your way is to expand the image window to full screen. To do this left-click View ➪ Fullscreen or use the F11 keyboard shortcut. If you're having trouble getting the Fullscreen option to work, make sure you actually have an image open in the image window. An image window without an image cannot be made full screen.

Images and Canvases

In any GIMP project that you work on, it's important to understand the workspace that an image window provides. Despite this window's rather minimalistic look, it provides you with an astounding amount of information. Figure 1-6 shows an image window with an image loaded in it.

FIGURE 1-6

The image window

Parts of the Image Window

As previously mentioned, you can right-click anywhere on an image window and get the same menu as those across the top of it. However, that's just the start. The bar that stretches across the bottom of the window is functional and informational. First you see the Pointer Coordinates box, which gives you real-time feedback about the exact position of your mouse in the image.

By default, these coordinates are given in pixel units. However, you can use the drop-down button next to the Pointer Coordinates to select any other types of units you would like to use, including real-world measurements like centimeters and inches as well as typographical units like points and picas. Of course, for non-pixel units, it's helpful to know what resolution your image is and you should probably disable Dot For Dot in the View menu (View ➪ Dot For Dot). There's more information on this in Chapter 2.

Notice also that when you change units they don't just change in the Pointer Coordinates. The rulers that are along the top and left sides of the image window also adjust for the new units you've chosen. These rulers are pretty useful. Besides giving you a visual cue as to where your mouse cursor is in the image window, they also allow you to create *guides*. Guides are useful for helping you line things up in your image either horizontally or vertically and they're even more useful if you have Snapping enabled (View ➪ Snap To Guides). To add a guide, left-click either of the rulers and drag your mouse over the image. When you release your mouse, a blue dashed line — the guide — appears over your image. Pulling from the top ruler gives you a horizontal guide and pulling from the right-side ruler gives you a vertical guide. You can adjust the location of any guide by left-clicking it again and moving it around. GIMP lets you know that you can select a guide, because it changes the guide from a blue dashed line to a red one when your mouse gets near it. To remove a guide, simply drag it off of the image.

Tip

To adjust or remove guides, make sure you're using the Move tool (M). You can find more on this tool in Chapter 4. ■

Next to the Units drop-down at the bottom of the image window is a Zoom field. This field lets you know how much you're zoomed in or out of your image and the drop-down arrow to the right of it allows you to choose among specific presets. You can also left-click in this number field and explicitly type in any arbitrary zoom percentage that you would like to use.

To the right of the Zoom button is the main Status Area of the image window. When you're not working in the image window, this Status Area shows the active layer and roughly how much of your computer's RAM is being used by keeping this image open. When you are working in the image window, though, the Status Area gives you helpful information on the tool you've selected, including feedback on what you're doing with it or extra tips on how to utilize it better. Also, when you're doing a time-consuming operation like a filter or even saving a large file, the Status Area shows a progress meter that indicates how soon the operation will complete.

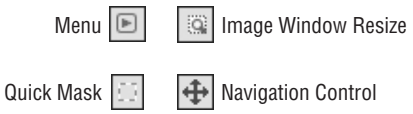
Tip

The amount of system RAM you're using to work on an image does not necessarily reflect the size of the image file when you save it. Chances are good that the saved file will be much smaller than the "working version." The main reason for this is that when images are saved, they are compressed to save space. To work on the images, though, GIMP has to decompress them and let the full uncompressed image sit in memory. Chapter 2 has more information on image compression. Another reason for the difference in saved file size and the amount of RAM usage is that GIMP also stores additional information in memory while you work, such as the Undo History and any buffers you have stored. This information is not included in a saved file, but it's quite useful while you're working. ■

Looking at the corners of the image window, you should notice an icon at each one. Each of these icons is actually a button that gives you quick access to some useful functions. Figure 1-7 shows the four icons at each corner of every image window.

FIGURE 1-7

Clockwise from the top left: icons for the Menu button, the Image Window Resize toggle button, the Navigation Control button, and the Quick Mask toggle button



The easiest is the top-left icon of a right-facing triangle in a box, shown in Figure 1-7. This is another quick way to access the menu for the image window. Some people who work with a drawing tablet find this to be a quicker way to navigate the menu. You can also bring up this menu by pressing Shift+F10.

The top-right icon features a small magnifying glass. This is the Image Window Resize toggle button and it's disabled by default. If you enable it, the image you're working on will also resize when you resize the image window. This can be helpful for tablet users or if you're just focused on a certain area and are more comfortable zooming in by adjusting the window size. The default behavior is that when you resize the image window, the image itself does not change in scale and you have to use the Navigation Control button or scrollbars to navigate to parts of your image.

Speaking of the Navigation Control button, that is the crosshairs icon on the bottom-right of the image window. If you left-click this icon, a small preview of your overall image will appear and you'll be able to navigate to specific parts of the image you're working on. Incidentally, this is the exact same functionality that you have with the Navigation dockable dialog mentioned earlier in this chapter.

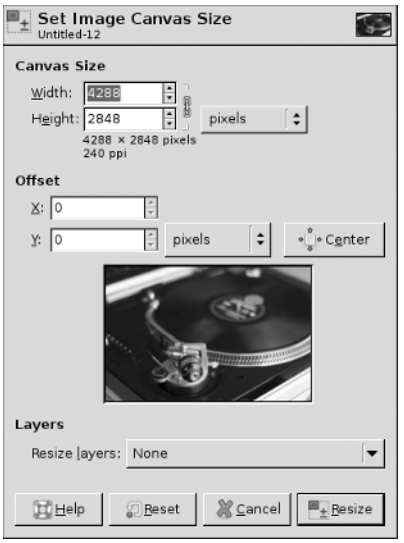
The last icon is the dashed rectangle at the bottom-left of the image window. Left-click this button and it enables GIMP's Quick Mask (Ctrl+Q). This is a quick way to see exactly what you have selected and it's particularly useful if you have partial or fuzzy selections. Right-clicking this button allows you to choose whether the Quick Mask highlights selected or unselected areas. You can also customize the color and opacity of the Quick Mask from this menu. Chapter 6 gives you more information on creating and using masks.

The Concept of a "Canvas"

Like many other image editing programs, GIMP makes use of a *canvas* in the image window. Think of the canvas as your working area; the "drawing surface" that you're working on. The image, in contrast, is the final graphic that you're creating. It's the canvas plus the image data. This means that modifications to the canvas won't stretch, distort, or scale your final output, but that same kind of modification to the image will cause those distortions. To adjust the size of your canvas, click Image ➪ Canvas Size from the image window's menu and you'll get a dialog that looks like the one in Figure 1-8.

FIGURE 1-8

The Set Image Canvas Size dialog



As Figure 1-8 shows, the Set Image Canvas Size dialog allows you to enter values for the new width and height of your canvas in any of the units available in GIMP. Take special notice of the chain-link icon that's to the right of the Width and Height values. This constrains, or links, the Width and Height values so adjusting one causes the other to automatically change its value to make the canvas maintain the same proportions. If you would rather explicitly enter your own values for Width and Height, simply left-click this chain-link icon and GIMP breaks the link so the values are no longer constrained to one another. If you're used to Photoshop, this is the same as enabling and disabling the Constrain Proportions check box.

Beneath the Width and Height values for the canvas is a set of offset values. Adjusting these numbers shifts your image data on the canvas in the X and Y directions. Rather than typing in numbers here, though, you may find it easier to simply left-click and drag the preview image below these values. If you need to center the image data on the canvas, there's a convenient Center button to the right that automatically adjusts the X and Y offset to ensure that everything is centered up.

The Layers portion of the Set Image Canvas Size dialog enables you to automatically resize the layers of your image to match your new canvas size. Unlike many other programs, layers in GIMP have their own explicit sizes that you can adjust independently of the image or the canvas. If you're not used to this concept, it can be a bit disorienting. Chapter 6 goes into this and other layer-related topics in more detail. The default behavior for resizing layers in the Set Image Canvas Size dialog is to do nothing keep the layers to their own sizes. However, if you do want to resize your layers to match the new canvas size, you can use the Resize Layers drop-down menu to stipulate which layers to do this to. Besides the option to not resize any layers, you can

choose to resize all layers, only the layers which are currently the same size as your image, only the visible layers, or only layers that are linked together.

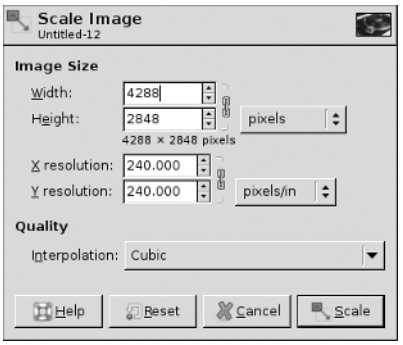
Warning

If you change your canvas size to be smaller than the image data that you're working with, be careful. Chapter 3 goes into image formats more deeply, but most standard image formats don't differentiate the canvas from the image, so if you export to something like JPEG or PNG, any image data that's not on the canvas will simply be cropped away and not saved. GIMP's native XCF format and Photoshop's PSD don't have this problem, but it's still worth taking note of. This is particularly true if you choose to take advantage of the Resize Layers functionality. Resizing the layers permanently crops any of that extraneous image information that's not within the canvas size. If you make a mistake and do this unintentionally, you can always use the Undo (Ctrl+Z) function, but this will also undo the change to your canvas size. Personally, I typically keep the default behavior and choose not to let GIMP resize my layers to match the canvas. If I want to do that, I do it separately. ■

In contrast to adjusting the size of your canvas, changing the size of your image is something quite different. Resizing the image will actually scale the data to fit the new size you've chosen. To see this in action, click Image ➪ Scale Image and you get a dialog that looks like the one in Figure 1-9.

FIGURE 1-9

The Scale Image dialog



This dialog looks similar to the Set Image Canvas Size dialog, but because you're scaling the whole image, there's no need for any offset values. Instead, you're provided with resolution values and an Interpolation setting for controlling how GIMP adds or removes pixels when scaling your image. For more on image resolution, have a look at Chapter 2. The Interpolation setting is pretty important to the final outcome of your scaled image and like most things in computer graphics, it's a trade-off between the time it takes your computer to generate a result and how good that final result ultimately looks. GIMP offers four different types of interpolation:

- **None —** As its name implies, this doesn't interpolate anything. It just scales and moves the individual pixels. Of the available options, it's the fastest, but the results typically don't look very good.

- **Linear —** Linear interpolation is a basic form of interpolation that's a fair balance between speed and quality.
- **Cubic —** This interpolation method usually yields the best results. It's slower than Linear interpolation, but the results are usually worth it.
- **Sinc (Lanczos3) —** This is the newest interpolation method added to GIMP. It competes with Cubic interpolation for slowness, but the results are generally a bit less fuzzy.

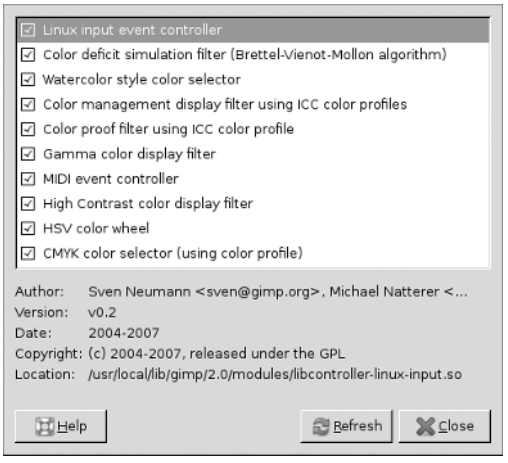
After scaling your image or changing the size of your canvas, you may want to have the image window fit the size of your newly resized image. There's an option for doing this by default in the image windows category of GIMP's Preferences. However, if you don't want GIMP to do it automatically after a resize, you can do it manually by clicking View ➪ Shrink Wrap or using the Ctrl+R keyboard shortcut.

Setting Preferences

GIMP has a remarkably customizable interface, and not just in appearance. You can also control a fairly large chunk of its behaviors in two primary places: the Preferences command and the Module Manager. Both of these options are at the bottom of the Edit menu. Of the two, the Module Manager has the simpler set of options, as you can see in Figure 1-10.

FIGURE 1-10

The Module Manager dialog



The Module Manager

The Module Manager is simply a set of check boxes that enable or disable the modules that GIMP has available to it. Modules are typically related to color selection, display filters, and event controllers for external input devices. Typically GIMP has all modules enabled. You may want to

disable a module if you know you're not going to use it and you want GIMP to start up faster or utilize less of your system's RAM. For example, if you don't have any MIDI devices on your workstation or you rarely use the Watercolor Style Color Selector, you can disable them here.

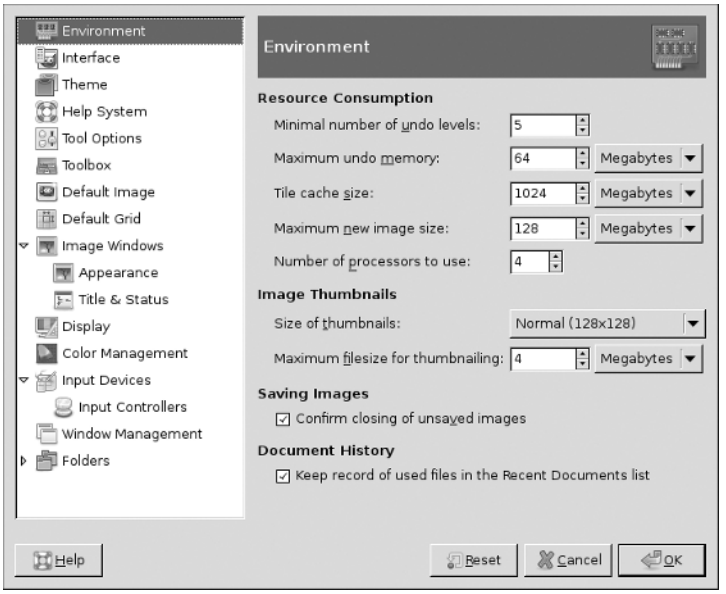
At the bottom of the dialog is detailed information about the module you have highlighted, including the module's author, its version, when that was completed, the module's copyright and license information, and where it lives on your computer. If you download a new module for GIMP or write one yourself and place it in the folder where GIMP looks for modules (this is configurable in the Preferences; more on this in a bit), or if you decide delete a module from your computer, you can update the list of available modules by clicking the Refresh button. Note that the Refresh button does *not* restart GIMP; it just updates that list. So if you've enabled or disabled a module, you'll still have to close GIMP and start it up again for the change to take effect.

GIMP Preferences

The bulk of GIMP's customization happens in the Preferences dialog (Edit ➪ Preferences). When you click this item in the Edit menu, you get a window that looks like the one in Figure 1-11. On the left of the window is a list of categories that you customize in GIMP. Some of these categories have subcategories for more refined control. On the right of the window are the specific preferences that you can adjust in each category. The Preferences dialog should open by default to the Environment preferences.

FIGURE 1-11

The Preferences dialog



Tip

Changes you make in the Preferences dialog are instantaneous. Unlike what you may be used to in other programs, there is no Apply button here. If you change the size of your icons or the size of the default grid or whether or not GIMP displays tooltips, those changes take effect immediately. You can set them back to what they were by clicking the Reset or Cancel buttons at the bottom of the dialog. The cool thing about this, though, is that you can get immediate feedback on the changes you make. You can test preferences or, because the Preferences dialog is non-blocking, simply change them on the fly without having to wait. How's that for cool? ■

Environment

Figure 1-11 shows the Environment preferences, which is the default preferences category that shows when you first open the dialog. These preferences give you a large amount of control over how GIMP performs on your computer. In particular, they control how much system memory that you allow GIMP to use while you work. If you're running GIMP on an older machine with a limited amount of RAM, you may want to reduce the Minimal Number of Undo Levels and decrease the Maximum Undo Memory.

To get a rough idea of how GIMP's undo system works, think about it like this: Each time you perform an action in GIMP, it saves a copy of the last version of your image before that action and stores it in RAM. And each action that you perform causes GIMP to save another copy. It will keep doing this until it gets to the limit that you stipulate in the Maximum Undo Memory value. Bear in mind that this is a bit of an over-simplified explanation of the undo system. It's a bit more efficient than saving full copies of the image, but the concept is still pretty much the same.

Other key settings that you can change to fine-tune GIMP's performance to your computer are the size of GIMP's tile cache and the number of processors it uses (helpful for newer multicore computers). The tile cache is how much system RAM you'll allow any open image in GIMP to use. Typically the default value works well here, but if you have a lot of memory on your machine, you should be able to set this value to at least half the amount of RAM you have pretty comfortably. If an image needs to take up more space than you allowed here, it swaps the overflowing data to your hard drive. Because your hard drive reads and writes data much more slowly than your system memory does, this has a heavy negative impact on performance. Keep this in mind if you're trying to reduce the Tile Cache Size.

The Image Thumbnails settings control the size of the thumbnails that get displayed when you open files in GIMP. You can find more on opening files in Chapter 3, but basically GIMP can give you a preview of an image before you load it. These settings control the size of that preview. The Maximum Filesize For Thumbnailing sets an upper threshold for which files GIMP automatically creates previews. Basically, if a saved image takes up less space than this value, GIMP builds a thumbnail without asking. The idea here is that it takes GIMP more time to process and create a preview of larger files. This setting is so you don't have to wait for that thumbnail to be created if the file is too large.

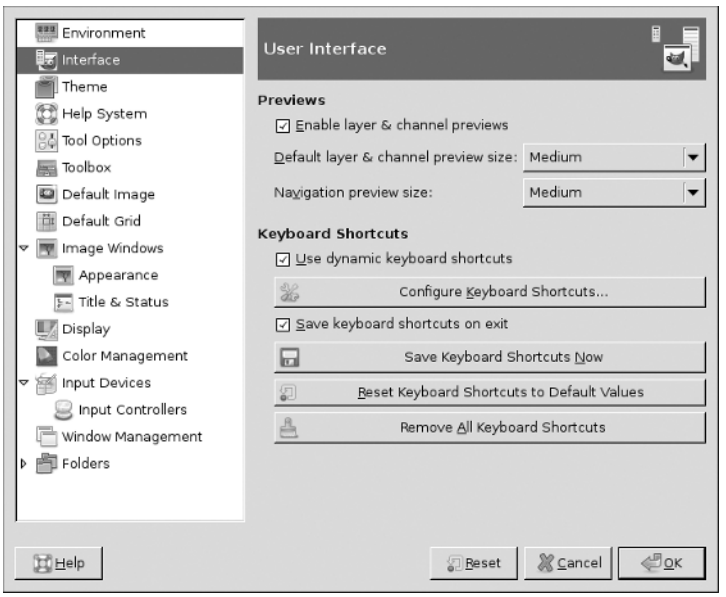
The other two settings in this category are pretty self-explanatory. If the Confirm Closing Of Unsaved Images option is enabled, GIMP will pop up a warning dialog if you try to close an image that you haven't yet saved. The Document History option controls whether or not GIMP keeps a chronological record of all of the images you've worked on.

Interface

Figure 1-12 shows preferences settings for GIMP's user interface.

FIGURE 1-12

User Interface settings in the Preferences dialog



The first part of this category deals with how previews show up in GIMP's interface. By default, previews are enabled because they tend to make it easier for you to choose layers and channels. However, if you don't need previews or need to run GIMP on a slower machine, you can disable previews from here. If you have previews enabled, though, you can change the default size of these previews from this section. Earlier in this chapter, you saw an option in the Tab menu of dockable dialogs that allows you to adjust the size of previews. The option in that menu overrides the default value that you set here in GIMP's Preferences.

The other half of this category is devoted to keyboard shortcuts. There's more detailed information on this topic at the end of this chapter covering how you assign shortcuts, but it's worth mentioning here that what this category gives you is the ability to restore the "factory default" keyboard shortcuts by clicking the Reset Keyboard Shortcuts to Default Values button.

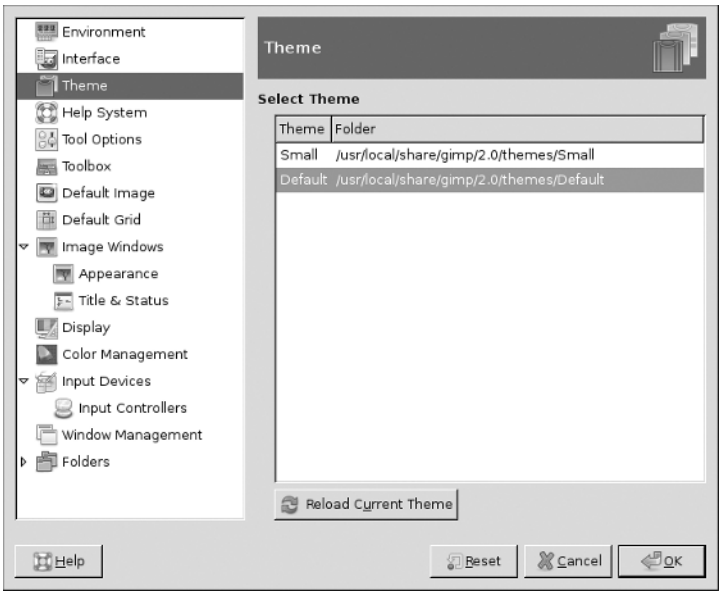
Theme

GIMP's interface is themeable, including its icons and interface colors. GIMP doesn't offer a way to interactively create or modify these themes; they're a combination of images and text files that are saved on your hard drive. See Appendix C for more information on using themes. However, GIMP ships with two different themes for use — Default and Small — and you can download

custom GIMP themes from a few places on the Internet. Some of those resources are listed in Appendix D. Figure 1-13 shows the Theme settings in the Preferences dialog.

FIGURE 1-13

Theme settings in the Preferences dialog



To change the theme, simply left-click the theme you want to use. If you've created a new theme for GIMP to use, all you need to do is put it in the folder that GIMP looks in for themes (more on this later) and it should appear in this list. If you modify the theme that you're currently using, the Reload Current Theme button reloads that theme into GIMP so you can see the results of your changes without actually restarting.

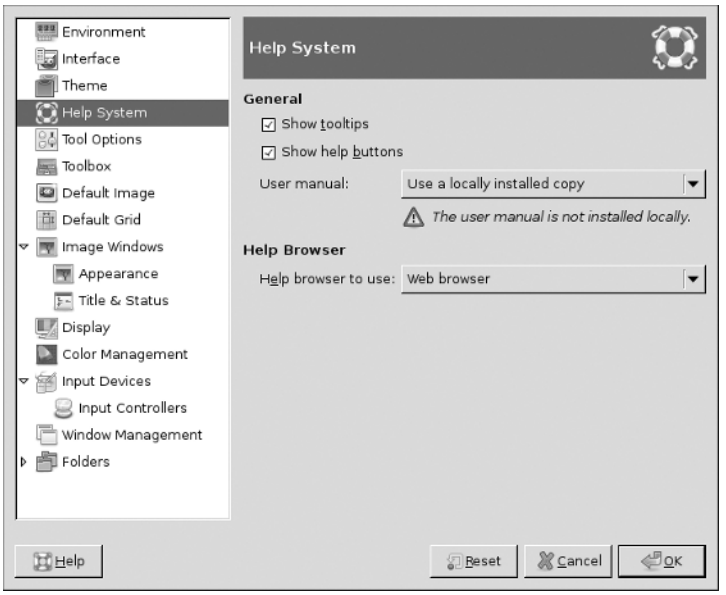
Help System

The Help System settings, shown in Figure 1-14, control how you can get interactive help while working in GIMP.

If you're a GIMP master genius, you can go here to disable the Show Tooltips and Show Help Buttons options. This gets GIMP out of your way and lets you work. Of course, GIMP is a complex program. So even if you disable the help buttons, you might consider keeping tooltips active. If you keep the help buttons active, though, you can bind them to use a local copy of the GIMP user manual installed on your hard drive or you can have GIMP jump on the Internet and let you look at the online version of the manual. The former is great when you need quick access or if you don't have an Internet connection. The latter is helpful because the online manual tends to be a bit more up-to-date than the installed version of the manual. You can even choose between the integrated GIMP Help Browser or the more familiar interface of your web browser of choice.

FIGURE 1-14

Help System settings in the Preferences dialog



Tool Options

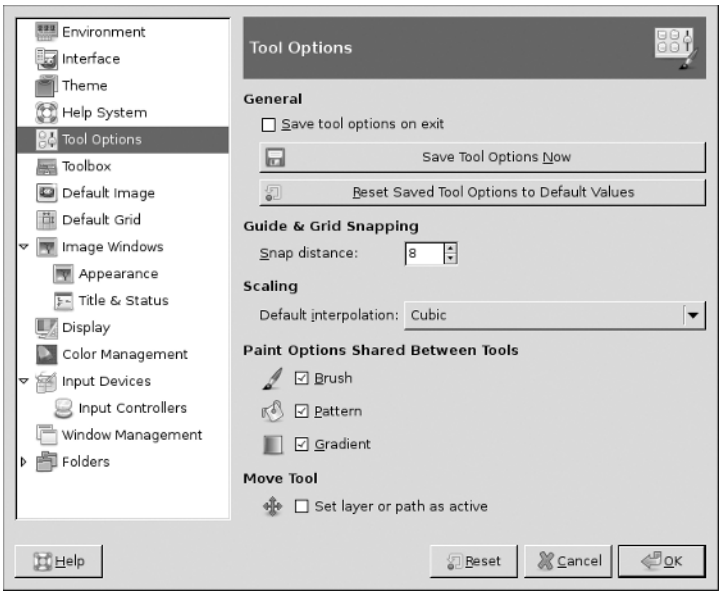
Figure 1-15 shows the preferences available for your tool options. The General settings are pretty straightforward, controlling when to save your tool options and allowing you to reset them back to GIMP's defaults.

The Snap Distance setting works for when you have Grid or Guide snapping enabled. The value here is in pixels, so when you're moving an object around, if it comes within this threshold (default is 8 pixels) of a guide or the grid, that object will be snapped to align with it. The Default Interpolation setting under Scaling lets you choose which interpolation you want GIMP to go with by default when doing scaling and other transformations, such as Rotate or Perspective. Look at the end of the "Images and Canvases" section of this chapter for more information on these interpolation methods.

The check boxes under Paint Options Shared Between Tools allow the various tools to share the same settings. For instance, if you have the Brush check box enabled, all of the tools that use brushes, such as the Paintbrush, Pencil, Airbrush, and Eraser, will use the same brush settings. If you're using the Paintbrush and then use the Eraser, they'll both use the same settings. And if you change brushes while erasing, when you go back to the Paintbrush, the brush you used for erasing will still be in use. However, if you disable this check box, each "brushable" tool retains its own independent brush settings between uses. Many artists tend to prefer this behavior because they rarely use the same brush to paint as they do to erase. However, it's usually more useful to keep the Pattern and Gradient check boxes enabled because that's something you typically want to stay consistent from tool to tool.

FIGURE 1-15

Tool Options settings in the Preferences dialog



The Set Layer Or Path As Active option at the bottom of this category is particular to the way the Move tool works. More on this is in Chapter 4, but when you're using the Move tool, if you click the image data for any layer, you can move it. You're not restricted to just the active layer. So while moving, GIMP temporarily makes the layer with the data you're moving the active layer. With this option disabled, after you finish the move, GIMP reverts the active layer to the layer you were on before the move. If this option is enabled, GIMP simply keeps this newly moved layer as the active layer.

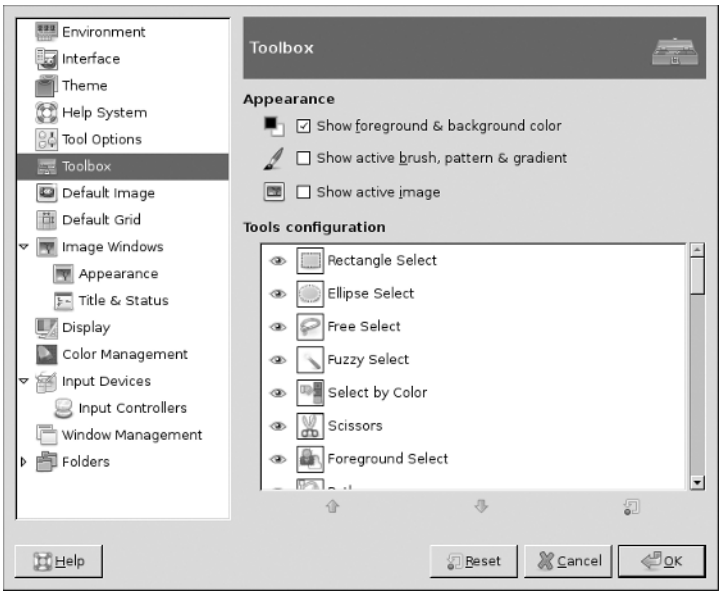
Toolbox

The Toolbox options, as shown in Figure 1-16, control the visibility of some features in the Toolbox. You can enable and disable the foreground and background color widget, the active brush, pattern, and gradient icons, as well as a preview of the active image.

The lower half of the Toolbox settings gives you control over which tools get shown in the Toolbox and what order they're shown. The eye icon next to each tool shows whether the tool is visible in the Toolbox. If you want to hide the tool, just left-click on its eye icon. If no eye icon is visible, then the tool is hidden and you make it appear by clicking the space where the icon would be. Beneath the list of tools are three additional buttons. The green up and down arrows allow you to control the order of the tools in the Toolbox. To use them, click the tool you want to move and then click these arrows to adjust that tool's location. You can also simply drag and drop a tool to a new location. The third button beneath the list of tools resets the order and visibility to the defaults.

FIGURE 1-16

Toolbox settings in the Preferences dialog



Default Image

The options in this category allow you to define the default settings that GIMP gives you when you create a new image. These settings, as shown in Figure 1-17, are basically the same settings that appear in the Create New Image dialog. There's more detailed information on this in Chapter 3, but if you read the "Images and Canvases" section about the Set Image Canvas Size dialog (refer to Figure 1-8), most of these settings should be familiar to you.

Default Grid

Figure 1-18 shows the Default Image Grid settings. These options control how the Image Grid appears on new images that you create. By default the image grid is hidden, but you can make it visible by clicking View ➪ Show Grid in the image window. These settings are the exact same as you'll find in the Configure Grid dialog (Image ➪ Configure Grid). Just know that changes to these values do not affect any of the images you currently have open in GIMP. These settings are specific to new images that you create. Most of these settings are self-explanatory, but it's worth noting that, like the Set Image Canvas Size and Scale Image dialogs, the Width and Height values have the little chain-link icon that constrains these values to change proportionally to one another.

FIGURE 1-17

Default New Image settings in the Preferences dialog

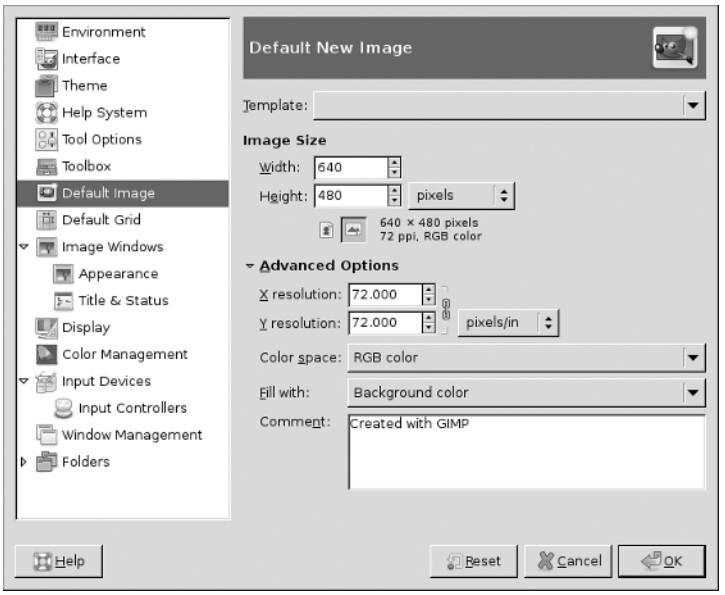


FIGURE 1-18

Default Image Grid settings in the Preferences dialog

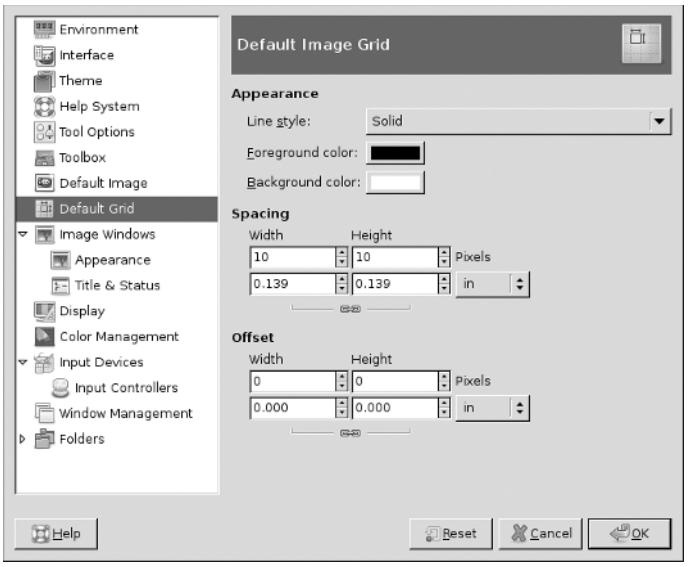
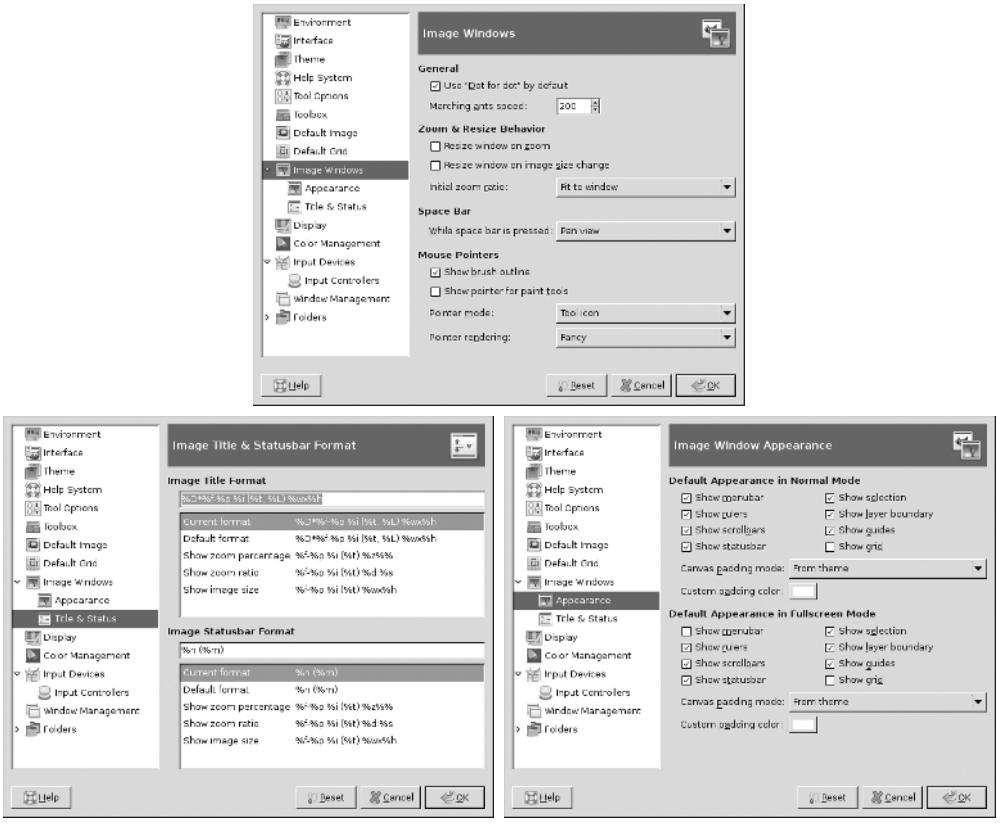


Image Windows

The Image Windows options control the behavior and appearance of the image windows in GIMP. This is one of the few categories in the Preferences dialog that has subcategories: Appearance and Title & Statusbar Format. Figure 1-19 shows the settings available for each of these categories and subcategories.

FIGURE 1-19

Image Windows, Appearance, and Title & Statusbar Format settings in the Preferences dialog



Most of the settings in the Image Windows category speak for themselves or, as in the case of Use "Dot For Dot" By Default, have already been explained in this chapter. The Marching Ants Speed refers an interface feature that occurs when you make a selection in the image window. Selection tools are covered in Chapter 4, but basically when you make a selection, that selection is outlined by a moving dashed line. The moving nature of this line is referred to as *marching ants*. The Marching Ants Speed value controls how fast those ants are moving in milliseconds. The smaller the value, the faster the ants move.

A couple other notable settings in this category are the Space Bar and Mouse Pointers settings. The Space Bar option controls what you want GIMP to do when you press the space bar in the image window. By default, this is set to Pan View, allowing you to move the view around and see image details better. Alternatively, you can make space bar a shortcut for the Move tool or disable the space bar altogether. The Mouse Pointers settings allow you to customize how your mouse cursor appears when working in GIMP. The defaults work nicely, but for more precision, you can change the Pointer Mode to Crosshair Only.

In the Image Window Appearance options, you basically have an array of check boxes to enable and disable viewable features in the image window. Most of these features are explained earlier in this chapter under the section "Windows and Menus," though it's worth pointing out the options on Canvas Padding. From that drop-down menu you can choose light or dark checks, the color defined by the theme, or a custom color from the color picker below it. Also notice that you can customize the image window's appearance to be different depending on whether it's in Normal or Fullscreen (View ➪ Fullscreen or F11) modes.

At first glance, the Title & Statusbar Format options seem to be daunting because of all the letters and percent signs. Fortunately, several presets are built in to allow you to customize the Title bar of the image window as well as the text that shows up in the Status Area. Of course, to completely customize things, you need to know what each of these variables means. Table 1-1 gives a description of each.

TABLE 1-1

Variables for Title and Status

Option	Variable
%f	Image filename
%i	View number, for if it is displayed more than once
%s	Source scale factor
%Cx	''Clean indicator'' — Show x if file does not need to be saved
%m	RAM used by image
%w	Image width (pixels)
%H	Image height (real-world units)
%%	A ''%'' sign
%F	Full path to file
%t	Image color mode
%d	Destination scale factor
%l	Number of layers

continued

TABLE 1-1 *(continued)*

Option	Variable
%n	Name of active layer/channel
%W	Image width (real-world units)
%u	Unit symbol
%p	Unique ID number
%z	Zoom factor
%Dx	''Dirty indicator'' — Show x if file needs to be saved
%L	Number of layers (long form)
%P	ID of active layer/channel
%h	Image height (pixels)
%U	Unit abbreviation

Display

Figure 1-20 shows the preference settings for Display in GIMP. The Transparency settings here are a bit of misnomer and would probably be better suited to be in the Image Windows settings, but it's not a huge issue for them to be here. What the Transparency settings do is control how GIMP displays transparent portions of an image you're working on in the image window. By default, GIMP does this by displaying a mid-tone checkerboard wherever there's a transparent portion of your image. From these settings you can choose darker or lighter checks, or remove the checkerboard altogether and just show a plain black, white, or gray background. You can also control how big the checks are on the checkerboard, should you decide to keep it.

Below the Transparency settings are settings for controlling how GIMP reacts to the resolution of your monitor. Chapter 2 has more information on resolution, but the short story is that having a proper resolution here is particularly important for print work. If the resolution is set properly, your images on-screen at 100% zoom should be the exact same size that they are when printed out. Generally speaking, most modern monitors can report their native resolution to your computer's operating system and GIMP can automatically get the information from there. However, in the event that the automatic values are incorrect or you have an older monitor, GIMP offers you the ability to manually enter a resolution or find out the proper manual settings by clicking the Calibrate button and measuring distances on-screen.

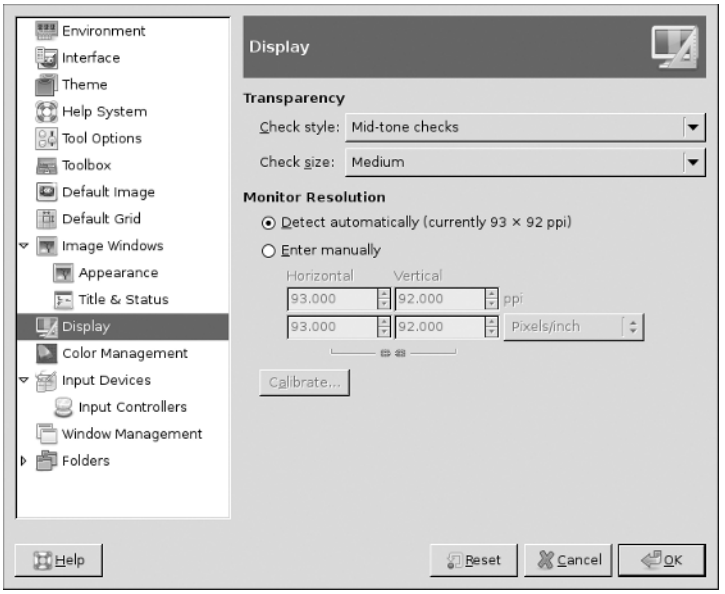
Color Management

Color management in GIMP is designed to get your graphics to appear on your monitor in colors that are comparable to what you'd see if those images were printed. Take special note, however, that this color management is not intended for use in printing directly from GIMP. Specialized

printing tools are available that handle that better and it's in your best interest to use those. Of course, that doesn't mean you should forgo accurate colors while you work, though. By default, GIMP ships with color management disabled. If you enable color management, you'll need to define some *color profiles*, or color definition standards that allow consistency between different graphics programs. Color profiles are defined in files that end with the `.icc` or `.icm` extension. Use the profile drop-downs in this set of preferences to make GIMP aware of where these profiles are on your computer. Figure 1-21 shows what the Color Management settings may look like after choosing your profiles.

FIGURE 1-20

Display settings in the Preferences dialog



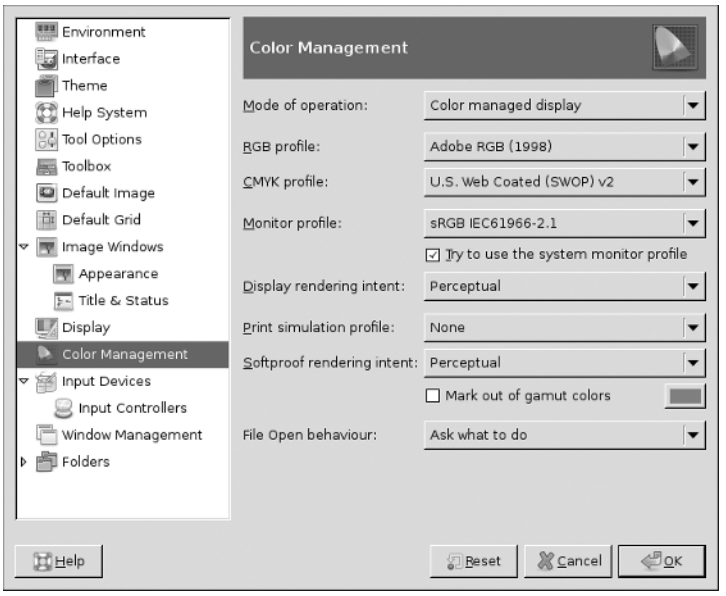
If you're doing color management, the *rendering intent* options are something you'll want to pay special attention to. The reason you need to define a rendering intent is because there are often situations where the color you want to produce is outside of the range, or *gamut*, of the color profile you want to use. So to deal with these out-of-gamut colors, the International Color Consortium (ICC) defined four standardized methods that GIMP provides to you as options:

- **Perceptual —** This method takes all of the colors from your image and scales their gamut until it fits in the gamut of the desired color profile. This is the intent that's usually used for photographs.
- **Relative colorimetric —** In this rendering intent, out-of-gamut colors are brought into the gamut of the destination profile by keeping their value the same, but adjusting the saturation. The typical application for this is when using spot colors.

- **Saturation —** This rendering intent is basically the opposite method to the relative colorimetric intent. This method tries to keep a color's saturation the same while adjusting its lightness to get it to fit in the destination gamut. This gets used most for business graphics.
- **Absolute colorimetric —** Use this method when you need to get an exact color to print. It's similar to the relative colorimetric intent, but it keeps the white point of your source image.

FIGURE 1-21

Color Management settings in the Preferences dialog



GIMP also gives you the ability to mark out-of-gamut colors with a color of your choice — gray by default — so you know where the color adjustments are going to take place in your image and you can adjust accordingly. Color management is a pretty heavy topic that's worth reading up on some more. There's a little bit more on how GIMP specifically handles colors and color management in Chapter 9.

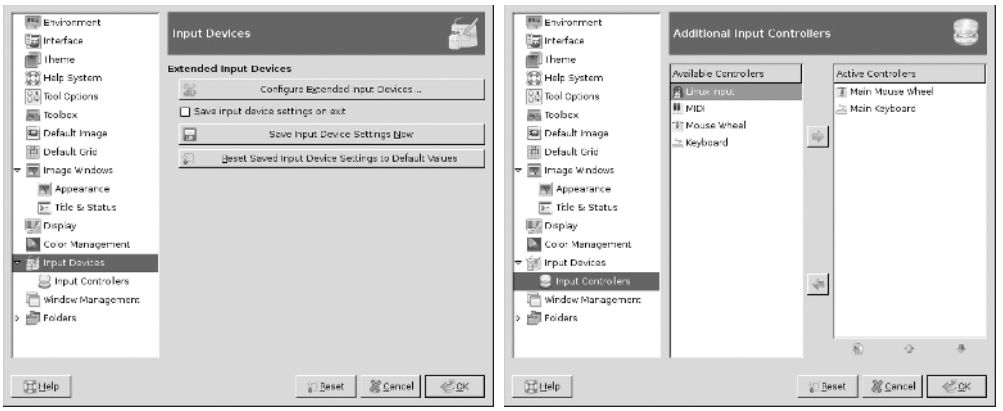
Input Devices

As you may note in Figure 1-22, the Input Devices section and its subcategory, Additional Input Controllers, in GIMP's preferences are deceptively sparse. This is the area where you define and set up Extended Input Devices like drawing tablets and MIDI controllers.

It's from these sections that you can customize the behavior of buttons on a drawing tablet or make GIMP aware of an external controller like the 3Dconnexion's SpaceNavigator or perhaps a musical keyboard. Configuration for some of these things can get pretty involved and specific. Details are included in Appendix B.

FIGURE 1-22

Input Devices and Additional Input Controllers settings in the Preferences dialog



Window Management

The Window Management options are settings that for years some GIMP users have clamored for, particularly GIMP users who work in Microsoft Windows. One of the complaints some users have with GIMP's interface is that it has so many floating windows. In the Windows operating system, this gets exacerbated by the fact that each GIMP window, including the Toolbox and docks, gets its own window and subsequent tab on the taskbar. This is cluttered and ugly and drove Windows users batty ever since GIMP was introduced on that platform. With the release of GIMP 2.6.1, GIMP for Windows was able to set a window-type "hint" on its Toolbox and dock windows. You can define what that hint is from this section of the Preferences, as shown in Figure 1-23.

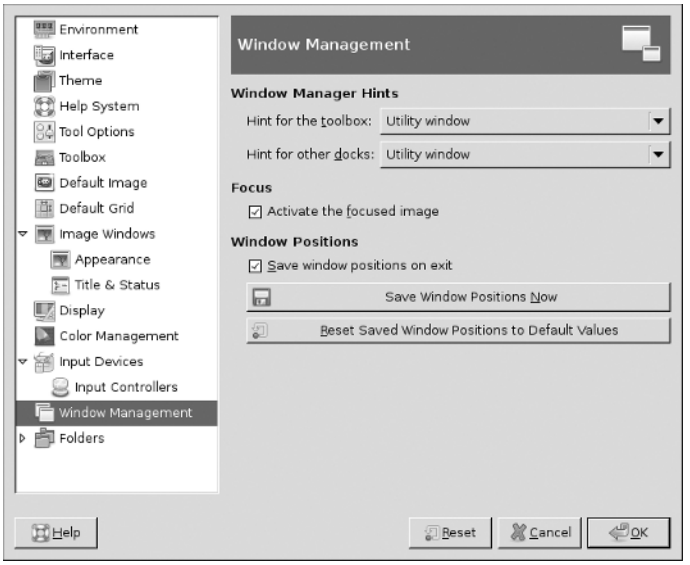
If you set the hint for the Toolbox and other docks to Utility Window, GIMP cleans itself up from your taskbar and gives you a single window interface that you can interact with, similar to Photoshop and other programs of this type. The GIMP developers are still refining this feature, but it works suitably well in both Windows and Linux and it's gone a long way toward making users happier. These drop-down menus also give you the ability to set the Toolbox and docks to Keep Above. This prevents image windows from obscuring the Toolbox or dock windows. The other settings in this section are pretty self-explanatory. Particularly useful is the Save window positions on exit option. It ensures that every time you open up GIMP, all of your tools and docks are exactly where you left them.

Tip

A slight bug in the Utility Window feature of GIMP is that when you try to minimize GIMP to your taskbar, the image windows will minimize, but the Toolbox and docks will remain on-screen. GIMP developers are working on a solution to make this work more cleanly, but in the meantime, an easy way to work around this issue is to press Tab in the image window prior to minimizing it. Pressing Tab, as explained earlier in this chapter, hides the Toolbox and docks. So now when you minimize, they're not left hanging. ■

FIGURE 1-23

Window Management settings in the Preferences dialog



Folders

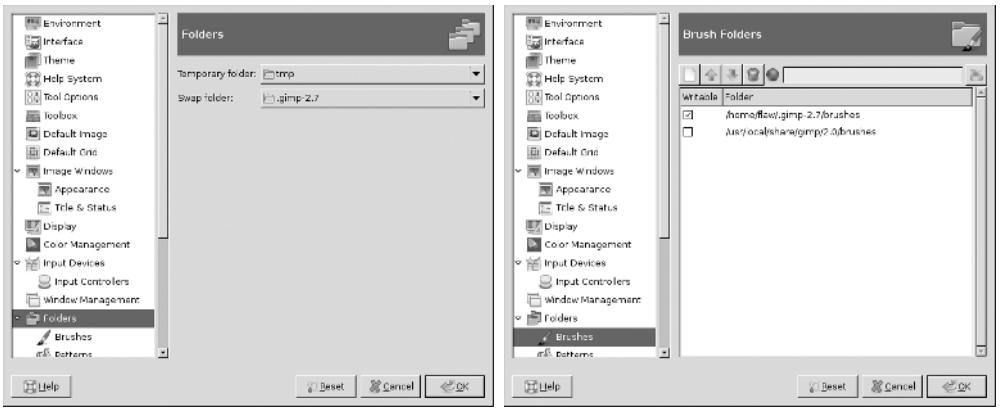
The final section in the Preferences dialog is Folders. Folders are typically where GIMP keeps data that can be used to customize and extend it. So if you create a custom brush or pattern or plug-in or theme, the best way to make GIMP aware of its existence is to put that thing you created into the folder where GIMP is looking for that data. As the left side of Figure 1-24 shows, GIMP has folders for storing brushes, patterns, palettes, gradients, fonts, plug-ins, scripts, modules, interpreters, environment variables, and themes.

Notice that the main Folders settings page has only two options: Temporary Folder and Swap Folder. These are folders that GIMP uses to hold transient data while you work. When you close GIMP, the information in these folders is cleared. It's a good idea to make sure that these folders are on a hard drive in your computer that has a fairly substantial amount of free space.

Also in Figure 1-24 are the settings for the Brush Folders. The interface here is pretty straightforward. The arrow buttons on the left move the selected folder up and down in the list of folders. The top folder in the list is the highest priority folder. If a brush by the same name exists in folders below it, it is superseded by the brush in the upper folder. You can also use this to add and remove folders from the list with the new page and trashcan icon buttons, respectively.

FIGURE 1-24

Folders settings and settings for the Brush Folders in the Preferences dialog



Customizing Keyboard Shortcuts

GIMP makes it very easy to customize keyboard shortcuts so you make your work environment comfortable for you. You can go about doing this in two primary ways. The fastest is to enable the Use Dynamic Keyboard Shortcuts option under the Interface settings of the Preferences dialog. By doing this, you're able to take nearly any menu command in GIMP and assign it a keyboard shortcut on the fly. As an example, here's how you would use this feature to get around one of my least favorite keyboard shortcuts in GIMP on a laptop: zooming in. By default, you can zoom out by pressing the minus, or dash (-) key while working on an image. And to zoom in, GIMP's default button is the plus key (+). This works great on a full keyboard with a numeric keypad. However, most laptop keyboards don't include the numeric keypad. So to get the plus sign, you have to press Shift+equal (=). This multi-key sequence can be bothersome if you're used to pressing one key and you want to quickly zoom in and out. To get around this, make sure you have dynamic keyboard shortcuts enabled and then use the menu in an image window to navigate to View ➪ Zoom ➪ Zoom In. Don't click Zoom In, though. Notice that to the right of it in the menu, you can see its shortcut, currently set to +. Well, with your mouse hovering over Zoom In, simply press the equal sign on your keyboard. You should see the keyboard shortcut hint instantly change from + to =. Now if you get out of the menu, you can immediately use that new shortcut. How's that for convenient?

So the generic steps to do this would be as follows:

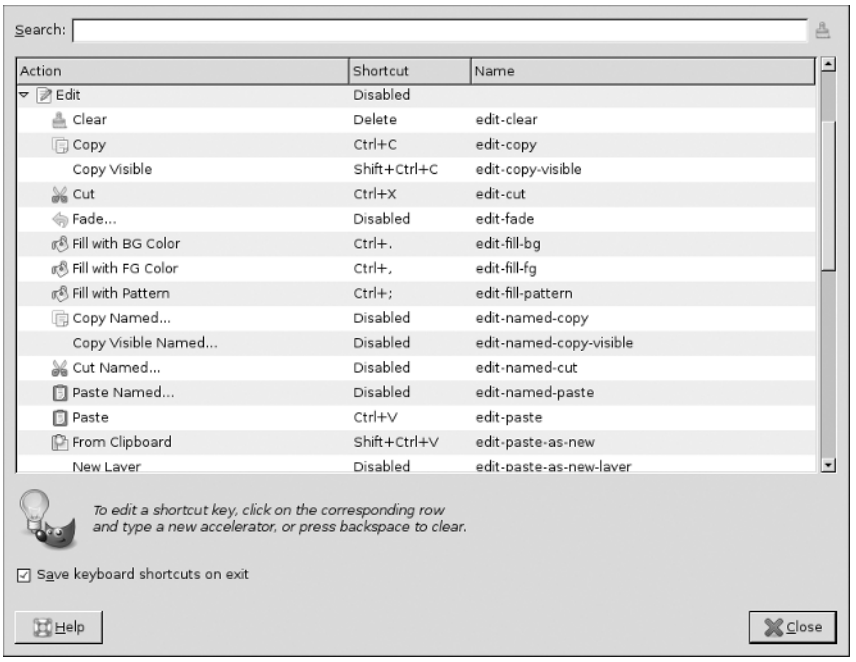
1. Verify that dynamic keyboard shortcuts is on (Edit ➤ Preferences ➤ Interface ➤ Use Dynamic Keyboard Shortcuts).
2. Use the menu to navigate to the action on which you want to assign or change the shortcut.

3. With your mouse hovered over the action, press the shortcut you want to use.
4. Get out of the menu and enjoy the use of your new keyboard shortcut. Woohoo!

Of course, that's a kind of "quick 'n' dirty" way of assigning keyboard shortcuts. There is another way that has its own dialog. To access it, click Edit ➤ Keyboard Shortcuts. When you do that, you'll get a dialog like the one in Figure 1-25.

FIGURE 1-25

The Configure Keyboard Shortcuts dialog



Using this dialog is pretty simple. Just navigate through the available actions or use the search bar at the top to type in the name of a specific action you're looking for. Then, when you find the action that you want, left-click it, and the item in the Shortcut column will say "New accelerator... " When you see that, press the new keyboard shortcut that you want to use and it is instantly applied. One of the nice things about using this interface to configure your shortcuts rather than the dynamic keyboard shortcuts is that this dialog will notify you if the shortcut you're trying to apply is already in use. Keeping you aware of conflicts helps ensure that you don't accidentally supplant another shortcut that you use more often.

Summary

GIMP is heavy-hitting Free Software that, despite the assertions of some detractors, is a popular and effective tool for digital artists. This chapter's purpose was to let you hit the ground running and not only get familiar with GIMP's capabilities, but also start getting to know its interface. The goal here is to get you familiar with GIMP and to get GIMP familiar with you by way of customizing it to work with you rather than against you. Onward!