

Touring The GIMP: The GNU Image Manipulation Program

Whether you're working on the family album or an art-house masterpiece, there is one tool no Linux user should be without: The GIMP.

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The GNU Image Manipulation Program is the most powerful interactive image processing application for Linux. Its user interface is based loosely on the Adobe Photoshop image editing package. Recent releases of GIMP have taken it to levels both amateur user and expert artist will appreciate.

The GIMP provides many of the same features as Photoshop, from layers and vector paths to blend modes and text manipulation. It also goes beyond Photoshop by providing cross-platform versions (Linux, Mac, and Windows) as well as support for multiple scripting languages, which makes GIMP perfect for Web-based animation production. And, the wealth of image filters—from blurs to clouds to impressionistic generators—that come standard with the base GIMP distribution can handle editing tasks both large and small.

GIMP supports very large images through the use of a configurable tiling scheme that makes optimum use of available memory. The native XCF format allows you to save all your work in layered format. Plugins are available that allow GIMP to integrate easily with your digital camera, scanner, and printer. Add Inkscape, a vector graphics pro-

gram, and Scribus, a Quark Xpress-like layout program, to your editing pipeline to make any print publication a thing of beauty.

Most recent Linux distributions now include GIMP version 2.0. Though GIMP is not built using the KDE environment, it works happily under it.

In this article, I introduce you to the what and where of GIMP to provide a road map to the user interface. In future articles and tutorials, I'll dig deeper into the how and why of GIMP to show not only how various effects and tasks are performed but also why they are needed.

THE ENVIRONMENT

The working environment for GIMP consists of three main pieces: the Toolbox, image windows, and the working dialogs. The Toolbox is the main window and the only window in The GIMP that remains open all the time. It contains a set of icons for activating basic features such as selections, painting, and transforming images. It also holds a menu at the top, the foreground and background color selectors, the active brush, pattern and gradients, and an optional window dock.

Image windows are where all the editing takes place. Many image windows can be open at any time. Each window is a composite view of an image, based on which layers in that image currently are marked visible. Image windows have many features. I cover these in more depth a little later in this article.

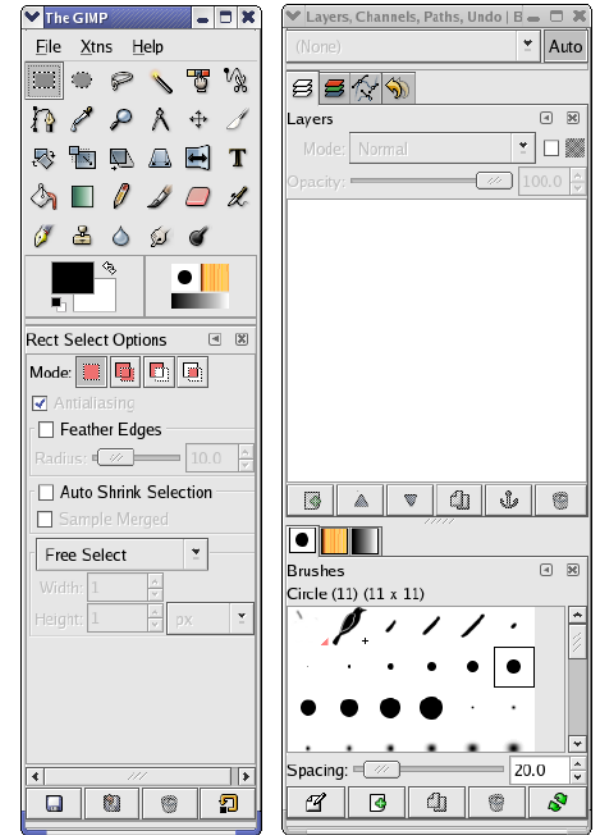


Figure 1. The first time you start GIMP, it runs through a number of setup windows. Once that finishes, this layout is displayed: The GIMP Toolbox and a vertical set of dock windows.

Working dialogs are windows that let you work with a variety of GIMP tools, many of which are not directly accessible from the Toolbox icons. This includes layers, channels, paths, the undo history, and the document history.

GIMP offers plenty of configurable preferences: full-screen mode, conservative memory use for resource-limited systems, tear-off menus, even

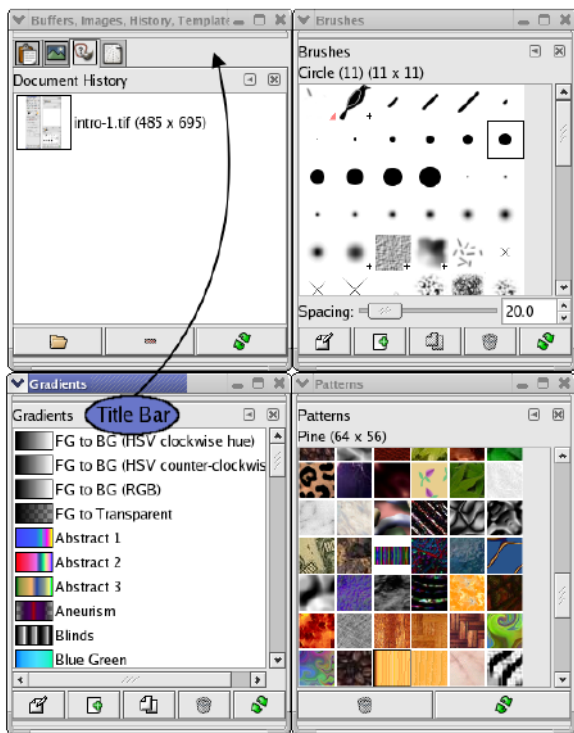


Figure 2. Any dialog box can become a dock. Simply drag dialog title bars onto a another dialog title bar. This adds a tab with an icon to the dock. Using docks, you can keep multiple dialogs open and accessible with a click of a tab while freeing up desktop real estate.

dynamic configuration of keyboard shortcuts. Most of these options can be set using the Preferences dialog (File→Preferences from the Toolbox). Full-screen mode for any image window can be toggled on or off by pressing F11 or by using the View→Fullscreen menu option from the Image Window menu bar.

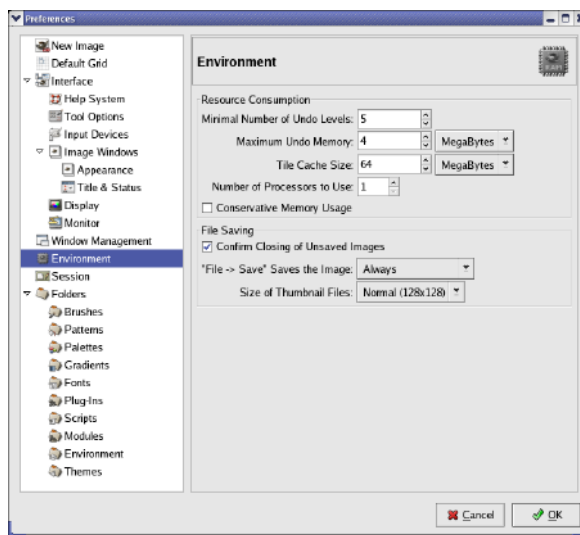


Figure 3. A slew of configurable options are available in the Preferences dialog. For slow machines or ones with memory under 256MB, be sure to look at the Environment options. For example, setting fewer undo levels reduces memory consumption.

THE TOOLBOX

The Toolbox is initially a vertical window of icons attached to a single dock. The icons represent the basic set of artist tools. These include tools for drawing and painting; creating and editing selections; performing various transformations such as scaling, shearing, and adding perspective; and choosing the active colors, patterns and brush types. Clicking on an icon in the toolbox activates the tool and, if the Tool Options dialog is open or docked, displays the Tool Options for that tool.

The Toolbox also has a menu bar with three

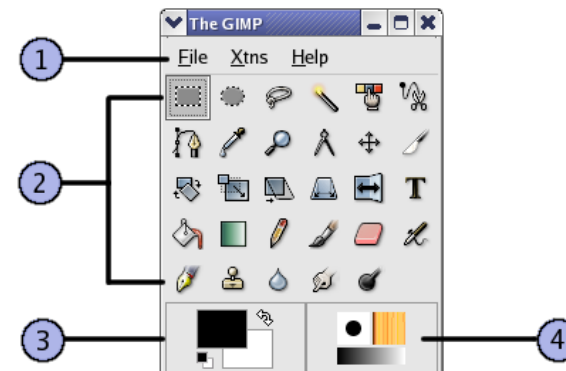


Figure 4. The GIMP toolbox consists of four main areas: 1) the menu bar, 2) the tool icons, 3) the foreground and background colors, and 4) the active brush, pattern, and gradient indicators. GIMP 2.2 adds an additional preview, showing the currently active image window to make it easier to identify at a glance which window will be modified by the next change you make.

menus: File, Xtns, and Help. Xtns is primarily for plugin developers, although you also can generate predefined text logos using the Xtns→Script Fu→Logos menu. The built-in Help system is thorough, but be sure you have The GIMP Help files installed for your language.

The layout for The GIMP Toolbox is configurable. Stretch the window vertically and horizontally to suit your needs. Attach more docks or detach them—the design intent was to make GIMP’s environment as comfortable as you need it to be.

A window dock allows you to group multiple dialogs into a single window. Dialogs (see File→Dialogs from the Toolbox main menu) are available for many of GIMP’s features not

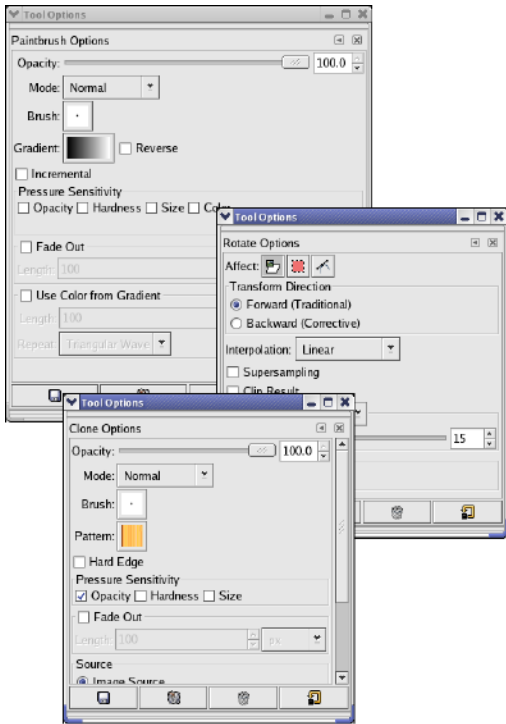


Figure 5. Tool options allow you to configure tools. The options are kept between uses, so using a tool and making a change, then switching to another tool, does not cause the first tool to reset to its default settings.

directly accessible through the Toolbox. You can drag the dock handle (where the dialog title is displayed) in any dialog and drop it into any dock. The Tab menu (left-pointing arrow icon) in a dock allows you to detach dialogs.

The first time you start GIMP, you get

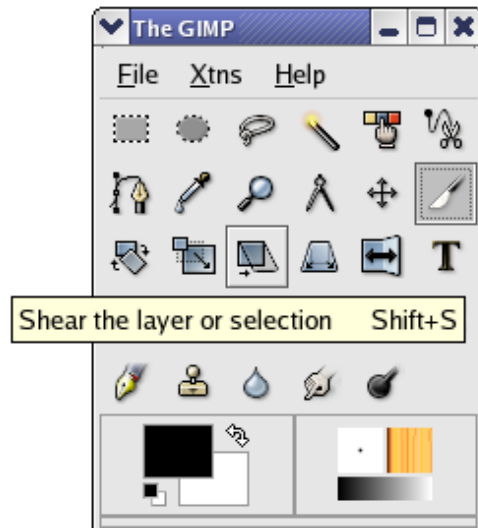


Figure 6. The toolbox tooltips describe the icons. Tooltips are offered up in various other places in GIMP, though these can become annoying after you're familiar with the program. Disable them in the Preferences when the time is right.

both the toolbox and an additional dock window containing two docks. This window safely can be closed if you need the extra screen space. The tabs in the docks can be dragged to the dock in the toolbox if you prefer to keep them available at a mouse click. All the tabs are dialogs that also can be accessed at any time from the File→Dialogs menu in the toolbox.

Leaving the mouse cursor over a tool for a few seconds pops up a tip window, better known as a tooltip, explaining that tool's basic purpose and use. Tooltips are active

on many features in GIMP. Experienced users can disable tooltips from the Preferences dialog.

THE IMAGE WINDOW

The toolbox, dialogs, and docks are tools for doing work. The place you actually do that work is an image window. Image windows consist of a menu bar and a menu button, scrollbars, rulers, a status area, and the image display area. The image display area shows a composite image. Composite means all layers and channels that currently are marked visible are combined, in order from bottom to top, to create the visible image. Changes made to any layer or channel are displayed immediately in the composite image.

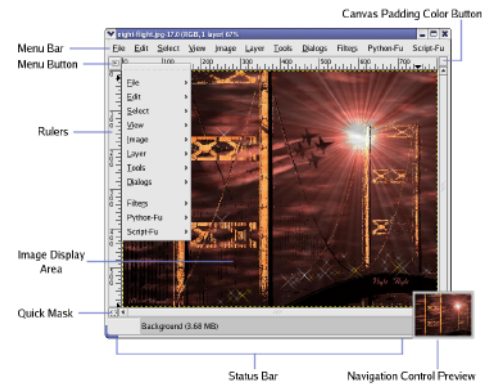


Figure 7. The GIMP image window can hide all of its features except the image display area. It also can be displayed in full-screen mode, which is useful for large print projects.

NOTE:
In this article, I often refer to the image window as a canvas window. The term image is somewhat abused by The GIMP community and easily can cause confusion when not put in the proper context. Canvas window is fairly unique and easily references the GIMP image window as a whole, including all associated layers and channels. The on-line documentation for GIMP, however, still refers to this as the image window.

NOTE:

All visible features of an image window (except the image display area) can be hidden from view. Check out the options under the View menu in the image window menu bar.

Because not all images you create will be wide enough to show the entire menu bar, you might not want to use it. It can be hidden from view using the View→Show Menubar option in the image window. Once it's hidden you still can get to the same menus by using the menu button or by pressing and holding the right mouse button while the mouse is in the image display area. Having multiple ways of reaching the same menus is another way The GIMP allows you more control of your working environment.

Rulers are provided that show the width of an image in pixels. The rulers play a double role in that you drag guides from them. A guide is straight line, horizontal or vertical, that can be used for alignment of layers or as straight edges for drawing and selection tools. Dragging a guide back into a ruler removes it from the image window.

The status bar lives at the bottom of the image window. It can display a variety of useful information in a configurable format (see the Preferences dialog under the Interface→Image Window→Title and Status section, and check out the on-line documentation for configuration options).

To the right of the status bar is the navigation control. The icon is a double arrow. When the image is zoomed or larger than what the image window can display, you can use the

scrollbars to navigate around the image. Alternatively, the navigation control lets you move around the image interactively. If you work on large images, such as those destined for print publications, the navigation tool tends to be a much easier way to bounce around the image than the scrollbars.

THE FILTERS

Most image editing programs provide basic tools for drawing lines, changing colors, and scaling images. What makes tools like The GIMP exciting is the use of filters, also known as plugins. Filters add features to GIMP either by providing some functionality that doesn't exist in the core GIMP toolbox or dialogs—say mapping an image to a 3-D shape, such as a cube or cylinder—or that exists only as a series of steps with existing tools.

Image scaling, rotating, and desaturating (that is, removing all the color and leaving an image black and white) can be applied to a series of images in a directory. If the same process needs to be applied to every image, it would be a time-consuming project to do it all one step at a time. Filters let you turn this process into a single dialog with a point-and-click interface.

GIMP comes with a large set of basic filters. These are divided into menus of closely related filters with titles such as blurs, artistic, distorts, and render. Filters are either programs or scripts, the latter coming in flavors of Perl, Python, and Scheme. Filters written as scripts are similar to Photoshop actions but far more versatile. If you expect to do much work with animations (such as those used on the Web) chances are good that you'll want to learn at least one of the

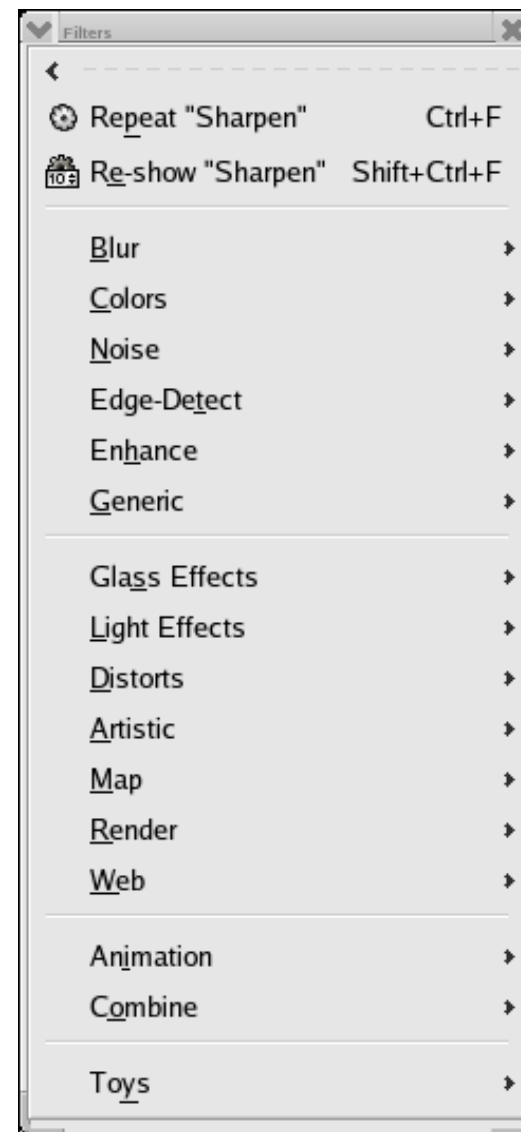


Figure 8. The Filters menu is where you find editing tools that are less interactive in general, but more sweeping in effect, than the toolbox tools.

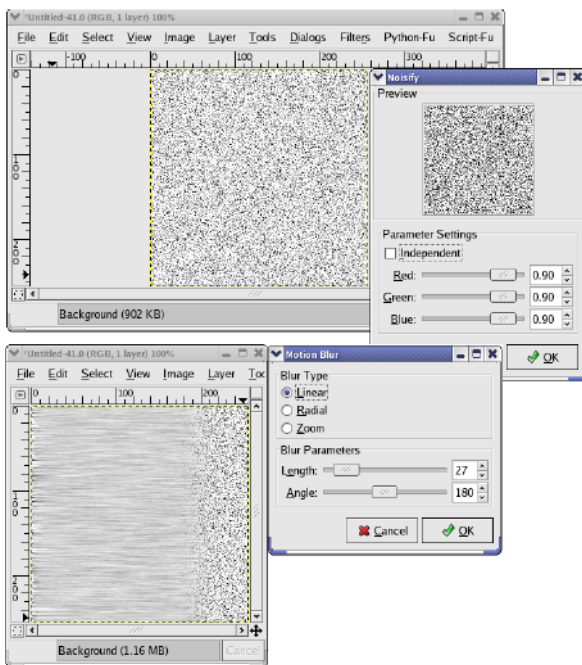


Figure 9. Noise is a good starting place for textures. Add a motion blur and you get the beginnings of a brushed metal effect.

available languages.

Some of the most commonly used filters include the Gaussian Blur (Filters→Blurs→Gaussian Blur RLE) to simulate depth in photographs, Noisify (Filters→Noise→Noisify) for aging photographs or as the seed for complex effects, and Sharpen (Filters→Enhance→Sharpen) for use with scanned photos.

When you're in need of a specialized effect or a good starting point for an image, try looking at the Render filters. The Plasma filter (Filters→Render→Plasma) is often used for cre-



Figure 10. What could be more fun than going from good to evil with only a few mouse clicks? The iWarp filter lets you do exactly that.

ating clouds in a sky, and the Solid Noise (Filters→Render→Solid Noise) filter is good for simulating smoke.

Emboss (Filters→Distorts→Emboss) can turn a 2-D image into 3-D with little effort on your part. Page Curl and Wind also often are used and are easy-to-understand Distort filters. Probably the most fun of the bunch is iWarp, which can distort family photos into the true aliens we see in our relatives.

RESOURCES

The primary source of information for The GIMP is the Web site, <http://gimp.org>. Here you'll find an on-line manual (in multiple languages) as well as tutorials and various helpful tips. A developer site (<http://developer.gimp.org>) is available for anyone needing information on writing filters for GIMP. Various on-line tutorials also are available from users with their own Web sites, as well as a slew of GIMP mailing lists for both end users and developers.

All the currently available books on the GIMP are based on a previous version. Expect to see new books on the GIMP 2.x series later this year.

The truly nice thing about The GIMP is that, although it isn't an exact feature clone of Photoshop, the basic functionality is quite similar. This means many of the tutorials you can find on-line for Photoshop and in texts easily are mapped to features found in GIMP.

Then again, if you'd rather read tutorials written specifically for The GIMP, stay tuned to this column. I'm just getting started! ■

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