

TUTORIAL GIMP



PHOTO EDITING

Filter Fantasies: Part 1

Wading through the GIMP menus can be daunting, and finding a filter that fits your needs can be near impossible. But help is on the way, as **Michael J Hammel** retreads some ground to consolidate your skills.

Up till now we've meandered in our tutorials, never really backtracking to the basics. The assumption is that you have found your way to *The GIMP* and have at least one text telling you where everything is (including that ever illusive Canvas Menu).

But perhaps its time to dig a little deeper into the one area most GIMP users would like to know more about: GIMP Filters. In this tutorial (and next month's one as well) we'll be looking briefly at the types of filters available, as well as examine some specific filters and why you might want to use them to solve particular problems or create attractive effects.

LAST CHANCE

Send in your GIMP questions

If you've been following the LXF GIMP tutorial series, and there's something that we've covered that you haven't understood or would like us to expand upon, please send an email outlining your concerns to our usual linuxformat@futurenet.co.uk

with 'GIMP Question' as the subject line. Or maybe you feel that there's an important topic that we've left out? Questions both large and small will be dealt with in a special Q&A episode in a few issues' time, so get in touch before it's too late...

ARTISTIC MYOPIA: DEPTH OF FIELD

Depth of field is the distance between the nearest and farthest points that appear to be in focus in a photograph. If an object is 10 feet away and the depth of field is between 8 and 12 feet, then the object would be in focus. Any objects outside that range would be out of focus.

If a photograph was taken using a large depth of field, then objects in both the background and foreground may be in focus, possibly making it difficult to distinguish the true subject of the photo. To draw attention to that subject we can use basic *GIMP* filters to fake a smaller depth of field. We start by scanning a photograph using *XSane* or *Quitelnsane*, open source applications that make use of the SANE drivers for scanners.

Original vs sharpened

1 Most scanned photographs tend to be a little out of focus to begin with, so we apply a the **Filters>Enhance>Sharpen** filter to clean up the scan. We could perform this step after changing the depth of field, but doing so would also sharpen the areas just taken out of focus. So sharpen first!



Quick Mask and feather

2 The next step is to make a loose selection around the subject of interest. In this case the dog in front is to be our focal point. We use the Quick Mask tool (lower left of the Canvas window) to paint over the subject – anywhere the image shows through the red veil will be the area to be selected. Don't worry about being exact here. After we're done painting, we convert the Quick Mask to a selection (the button next to the Quick Mask button) and then invert it (**Selections>Invert**). The selection is then feathered a modest amount (10 pixels in this example). The feathering here is why we did not need to be so exact while making our Quick Mask selection.



Gaussian blur = final image

3 With the background selected we choose a Gaussian Blur (**Filters>Blur>Gaussian Blur IIR**). Note that the IIR blur is better-suited to photographs than the RLE version (which is better suited for computer-generated and text images). The blur amount is subjective – choose the amount which takes the non-focal subject area out of focus. Any more than that becomes a lesson in artistic license.

TUTORIAL GIMP

RED IS GREEN, GREEN IS CLEAR: COLOUR MAPPING

Technically, colour mapping is the process of reassigning one colour value to another. Each colour channel (Red, Green or Blue) has 256 distinct levels in *The GIMP*. $256 = 8 \text{ bits} = 1 \text{ byte}$ per colour channel, which is convenient for the *GIMP* developers and extremely efficient for computers to handle. This is why *GIMP* is known as an 8-bit graphics app – 16 bits would give greater colour variation, though the average desktop user isn't likely to notice the difference.

Mapping colours doesn't have to be a one-to-one process – you can map 1000 colours down to 256. This is exactly what happens when you convert a JPEG image to a GIF, the former offering thousands of colours while the latter being limited to 256. In *GIMP* you can convert a Canvas from an RGB image (256 colours per channel) to an Indexed image, which has only 256 colours total, prior to saving it as a GIF image. This would be colour mapping in its simplest form. Colour mapping can also be artistic. Most of the options available under the *Filters>Colours* menu offer some form of colour mapping that can take ordinary images and turn them into something far more imaginative. There are many other ways to manipulate colour in *The GIMP* besides those filters found under *Filters>Colour*. Try working with the options under *Image>Colours*, especially the *Curves*, *Hue-Saturation* and *Filter Pack* options. These tools are designed more for colour correction than for artistic use, but with *GIMP* you're only limited by your own creativity...



Alien Map 2

2 While Gradient Map works on the brightness of an image, the Alien Map plug-ins (Alien Map and Alien Map 2) work on the RGB and HSV colour spaces. There are many colour spaces, such as CMYK and YUV, but *The GIMP* does not yet support them all. The RGB colour space is the one you work with in the *GIMP* most often – this is simply working with the Red, Green and Blue channels. HSV is a little different. The image has Hue, Saturation and Value levels than can be mapped directly to RGB. Applying similar methods to either colour space will produce different results. In this example, we've used Alien Map 2 with the same settings but applied first to the RGB colour space of the image and then to the HSV colour space. While the latter may look far more artistic, this is only because of the values chosen for the Alien Map 2 filter. Different values could very well produce better results for the RGB colour space.



Gradient map samples

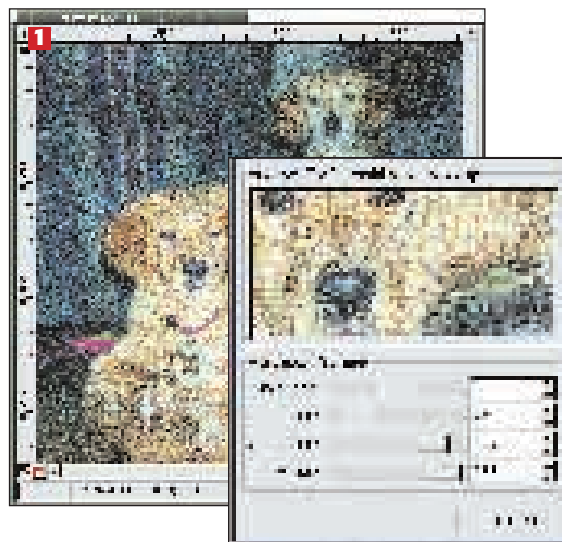
1 We start with the image we finished with in our depth of field exercise. Duplicate it. We want to apply two variations of a Gradient Map (*Filters>Colours>Map>Gradient Map*) to it. This filter will map the colours in the image (actually, their brightness) to the colours in the gradient chosen. In our first example we chose the 'German Flag Smooth' gradient. The second example we applied the 'Golden' gradient. You can see the great difference in the result when gradient to be used is chosen carefully. Try applying a gradient with lots of transparency, such as Burning Transparency.

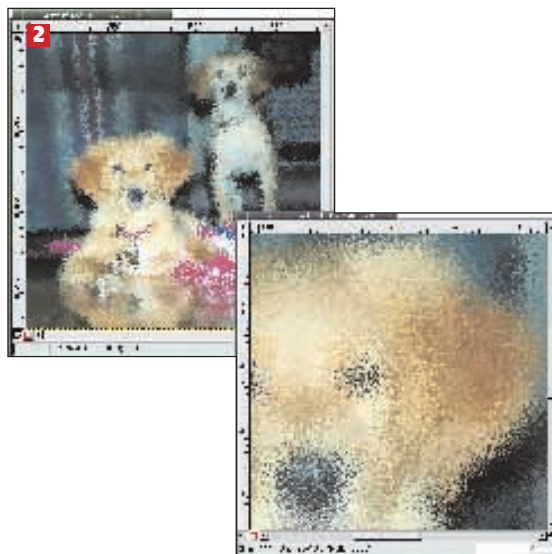
ADDING NOISE TO A CLEAR PICTURE

Noise is a random change in an image. Pixels are chosen and changed randomly by a noise filter, altering colour or brightness or some other aspect of the pixel. There are various reasons to add noise to an image. One of the most common is to remove banding (visible lines of solid colour) in gradients when an image is changed from RGB to Indexed mode. Noise can be used to blend image elements in a photograph such as melding the foreground into the background – opposite of the depth of field, you might say. Noise is also used to simulate movement in GIF animations. We'll look at two filters from the *Filters>Noise* menu in these next two examples.

Scatter HSV

1 The Scatter HSV filter is just one noise option available to *GIMP* users. Changes in Hue will vary the amount of colour change for the noise. Changes in Saturation will change the intensity of those changes in colour. Changes in Value will alter the brightness of the noise. The example here shows the Scatter HSV dialog and its settings along with the results of applying these values to add noise to the picture.





Spread

2 Another noise option is Spread. The effect produced by this filter is something between a oil painting done by dabbing the brush tip on the canvas repeatedly and viewing an image through translucent (as opposed to *transparent*) glass. In the example here we see the results of applying a Spread of 30 in both the horizontal and vertical directions to the original image along with a close up to show the detail produced by the filter.

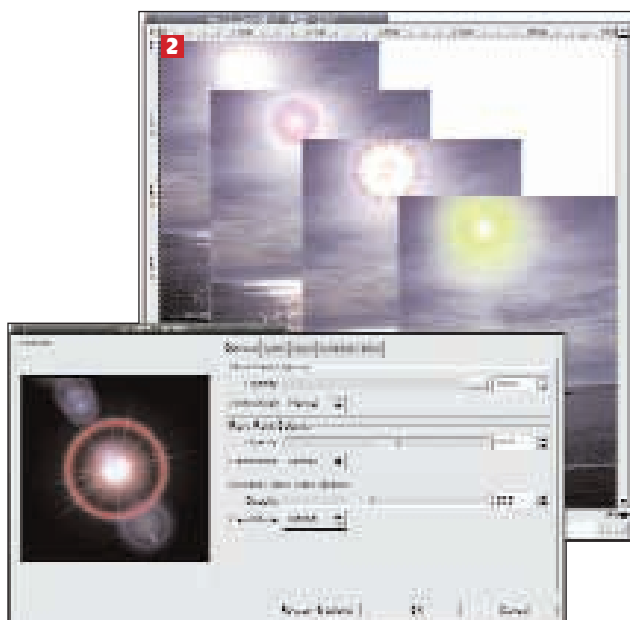
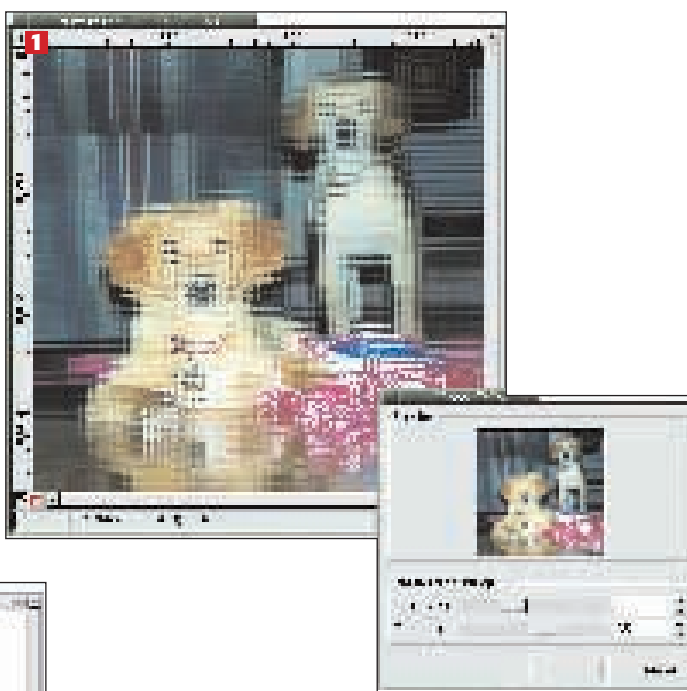


BENDING LIGHT: GLASS AND LIGHT EFFECTS

All photographs are frozen moments of reflected light. *The GIMP* can let you change the perceived direction of those reflections or add your own. The filters found under the Filters>Glass Effects menu change an image to make it appear the image was taken through special lenses or through semi-translucent glass windows. The filters under Filters>Light Effects, on the other hand, provide a means to generate new types of lighting, from point and spot lights to lens flares.

Glass Tile

1 The Glass Tile filter generates patterns similar to what you see with the Spread filter by generating images that appear distorted from diffracted light patterns. Light is diffracted when it hits an edge, so the patterns produced with the Glass Tile filter amount to viewing the image through a wall made of glass tiles of varying sizes. Such tiles are often used in windows for bathrooms to obscure the view inside from the outside, or in open-plan areas as a focal point or room divider. This example shows the Glass Tile filter dialog along with the results after applying it to the original image.



GFlare

2 A lens flare is what happens in photography when a light source (the sun or a light bulb, for example) reflects on a camera lens and causes ghost images in the form of spikes of light radiating from the light source. These spikes can be solid or come in the form of multiple circles of coloured light, depending on the complexity of the camera lens and even on dust particles on the lens. Most lenses and lens filters are designed to try to remove this effect, even though many photographers and software developers like to put them back in. Because a lens flare is produced on the lens it will always appear in front of the objects in an photograph. The GFlare filter can produce a wide variety of lens flares without regard for the existing image content. Note that you should generate these flares on a separate layer and keep this layer on top of your photos for the most realistic look. Lens flares with hot spots (small circles near but off-centre from the centre of the light source) are caused by dust and can be reproduced with multiple layers of GFlare renderings. **LXF**