MAGAZINE

BSD

FOR NOVICE AND ADVANCED USERS

Best of

GETTING TO GRIPS WITH THE GIMP

ROB SOMERVILLE

ALL 10 ARTICLES IN ONE ISSUE

VOL.4 NO.01

1898-9144

FREENAS MINI
STORAGE APPLIANCE

IT *SAVES* YOUR LIFE.

HOW IMPORTANT IS YOUR DATA?

Years of family photos. Your entire music and movie collection. Office documents you've put hours of work into. Backups for every computer you own. We ask again, *how important is your data?*

NOW IMAGINE LOSING IT ALL

Losing one bit - that's all it takes. One single bit, and your file is gone.

The worst part? **You won't know until you absolutely need that file again.**

Example of one-bit corruption

THE SOLUTION

The FreeNAS Mini has emerged as the clear choice to save your digital life. **No other NAS in its class offers ECC (error correcting code) memory and ZFS bitrot protection to ensure data always reaches disk without corruption and *never degrades over time*.**

No other NAS combines the inherent data integrity and security of the ZFS filesystem with fast on-disk encryption. No other NAS provides comparable power and flexibility. The FreeNAS Mini is, hands-down, the best home and small office storage appliance you can buy on the market. **When it comes to saving your important data, there simply is no other solution.**

The Mini boasts these state-of-the-art features:

- 8-core 2.4GHz Intel® Atom™ processor
- Up to 16TB of storage capacity
- 16GB of ECC memory (with the option to upgrade to 32GB)
- 2 x 1 Gigabit network controllers
- Remote management port (IPMI)
- Tool-less design; hot swappable drive trays
- FreeNAS installed and configured

iXsystems®

http://www.iXsystems.com/mini

intel® inside™ ATOM™

FREENAS CERTIFIED STORAGE

With over six million downloads, FreeNAS is undisputedly *the* most popular storage operating system in the world.

Sure, you could build your own FreeNAS system: research every hardware option, order all the parts, wait for everything to ship and arrive, vent at customer service because it *hasn't*, and finally build it yourself while hoping everything fits - only to install the software and discover that the system you spent *days* agonizing over **isn't even compatible**. Or...

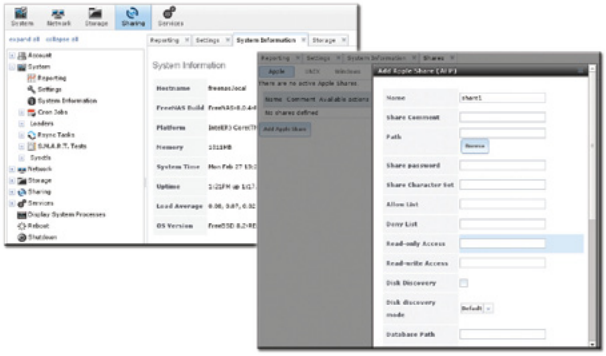
MAKE IT EASY ON YOURSELF

As the sponsors and lead developers of the FreeNAS project, iXsystems has combined over 20 years of hardware experience with our FreeNAS expertise to bring you FreeNAS Certified Storage. **We make it easy to enjoy all the benefits of FreeNAS without the headache of building, setting up, configuring, and supporting it yourself.** As one of the leaders in the storage industry, you know that you're getting the best combination of hardware designed for optimal performance with FreeNAS.

Every FreeNAS server we ship is...

» Custom built and optimized for your use case
» Installed, configured, tested, and guaranteed to work out of the box
» Supported by the Silicon Valley team that designed and built it
» Backed by a 3 years parts and labor limited warranty

As one of the leaders in the storage industry, you know that you're getting the best combination of hardware designed for optimal performance with FreeNAS. **Contact us today for a FREE Risk Elimination Consultation with one of our FreeNAS experts.** Remember, every purchase directly supports the FreeNAS project so we can continue adding features and improvements to the software for years to come. **And really - why would you buy a FreeNAS server from *anyone* else?**



FreeNAS 1U

- Intel® Xeon® Processor E3-1200v2 Family
- Up to 16TB of storage capacity
- 16GB ECC memory (upgradable to 32GB)
- 2 x 10/100/1000 Gigabit Ethernet controllers
- Redundant power supply

FreeNAS 2U

- 2x Intel® Xeon® Processors E5-2600v2 Family
- Up to 48TB of storage capacity
- 32GB ECC memory (upgradable to 128GB)
- 4 x 1GbE Network interface (Onboard) - (Upgradable to 2 x 10 Gigabit Interface)
- Redundant Power Supply

http://www.iXsystems.com/storage/freenas-certified-storage/

Dear Readers,

Getting to Grips with the Gimp *by Rob Somerville*

Now, you have the Best of BSD issue that is a collection of Rob Somerville's articles.

In the BSD series on image manipulation and design, you will read about graphic design basics, and how to use the most popular Open Source graphics software – The Gimp.

Enjoy reading,

Ewa & BSD team

MAGAZINE BSD

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FreeNAS

in an Enterprise Environment

By the time you're reading this, FreeNAS has been downloaded more than 5.5 million times. For home users, it's become an indispensable part of their daily lives, akin to the DVR. Meanwhile, all over the world, thousands of businesses universities, and government departments use FreeNAS to build effective storage solutions in myriad applications.

What you will learn...

- How TrueNAS builds off the strong points of the FreeBSD and FreeNAS operating systems
- How TrueNAS meets modern storage challenges for enterr

The FreeNAS operating systems is fre
the public and offers thorough doc
active community, and a feature-ric
the storage environment. Based on Free
can share over a host of protocols (SMB
FTP, iSCSI, etc) and features an intuitiv
the ZFS file system, a plug-in system
much more.

Despite the massive popularity
aren't aware of its big brother dut
data in some of the most demand
environments: the proven, enterp
professionally-supported line of

But what makes TrueNAS diffe
Well, I'm glad you asked...

Commercial Grade Suppo

When a mission critical stor
organization's whole operat
halt. Whole community-bas
free), it can't always get an
and running in a timely m
responsiveness and expe
dedicated support team
provide that safety.

Created by the sam
developed FreeNAS.

CONTENTS

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Getting to Grips with the Gimp – Part 1

In our new series on image manipulation and design, we will look at graphic design basics, and how to use the most popular Open Source graphics software – The Gimp.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

It might seem strange having a "non-technical" how-to series, but in this age of digital photography, graphics intensive website design and visual icons, more and more emphasis is being placed on imagery as a method of communication. Good graphic design is also useful for presentations, flyers, and publications; the list is endless. Some people just lift images from Google or make use of professional stock images, the latter being expensive and the former dubious from a copyright perspective. Wha can be more satisfying than manipulating and creating your own artwork?

I first became hooked on graphics programs in the mid-eighties when I got my hands on an Amiga and Deluxe Paint. Sadly no more, I spent years working with other vector based programs such as Corel Draw, Arts and Letters, etc. until I came across the Gimp in the early days of Open Source. While Adobe Photoshop has always been around, it was (and still is) prohibitively expensive for the

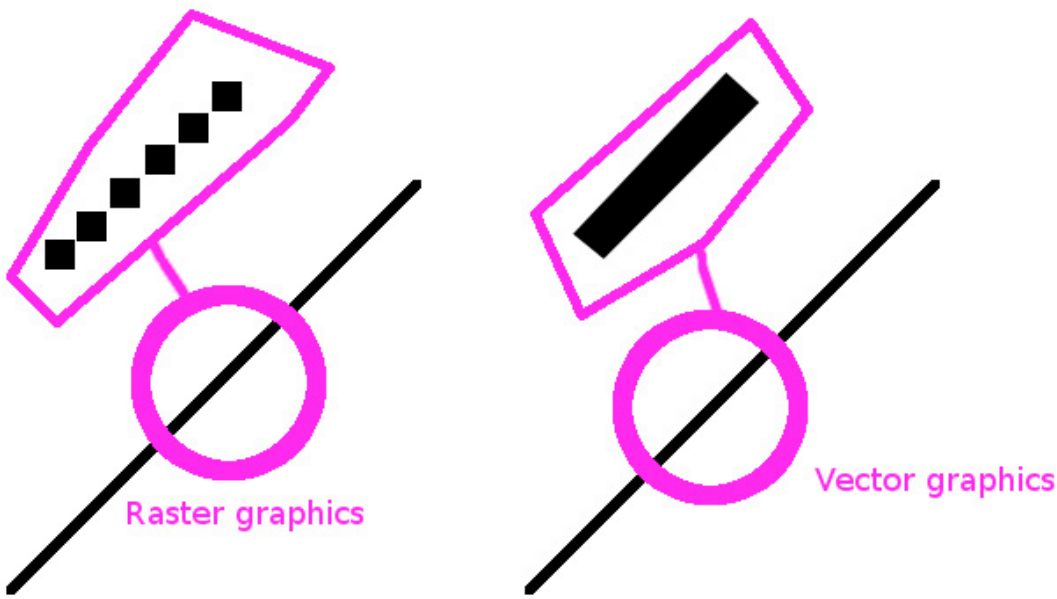

Figure 1. *Raster and Vector images*

amateur design enthusiast, and until the Gimp arrived there was no real raster based alternative.

The Gimp (the GNU Image Manipulation Program) can be used for photo retouching, image authoring and a host of other functions including creating animated GIFs, etc.

While both vector and raster based programs have their uses, the former is mainly used for posters, logos and artwork that requires high definition at high resolutions. Gimp on the other hand works at the pixel level and therefore is suitable for image manipulation. For vector graphics manipulation, Inkscape is an excellent Open Source tool. [See Figure 1 – Raster and Vector graphics].

Requirements

The Gimp is available for Mac (OSX), Windows and virtually every flavour of Linux and *BSD. While version numbers may vary slightly across platforms, I will be using 2.8.4 for this tutorial though some platforms may still be on 2.6.x. There are some subtle differences between the two versions (e.g. window docking, file import and export, etc.) but the majority of functions are the same. What is more important than the version is the PC you run the software on. You will need plenty of RAM if you are going to be working with large images. A good quality graphics card and monitor are also important, but most modern kits will be fine. The biggest issue is colour drift and lighting – editing an image on a CRT monitor under flourescent light will be a different visual experience from using an LCD or LED monitor under tungsten lighting. One of the reasons why graphic designers are fanatical about Mac's is the excellent colour balance and font support, something that is not consistent across different manufacturers.

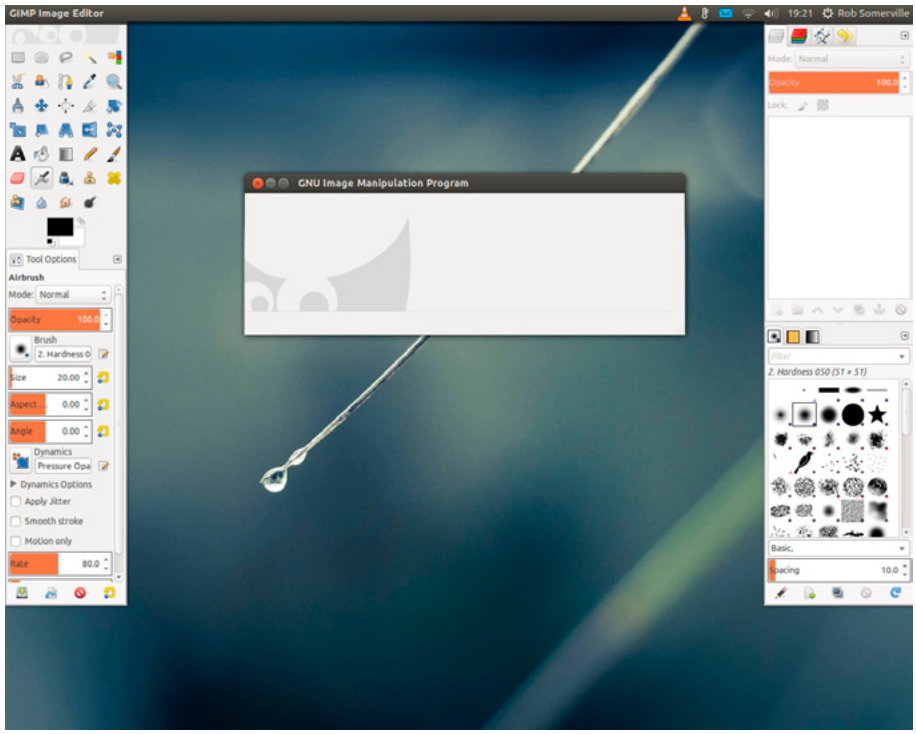

Figure 2. *Default Gimp layout*

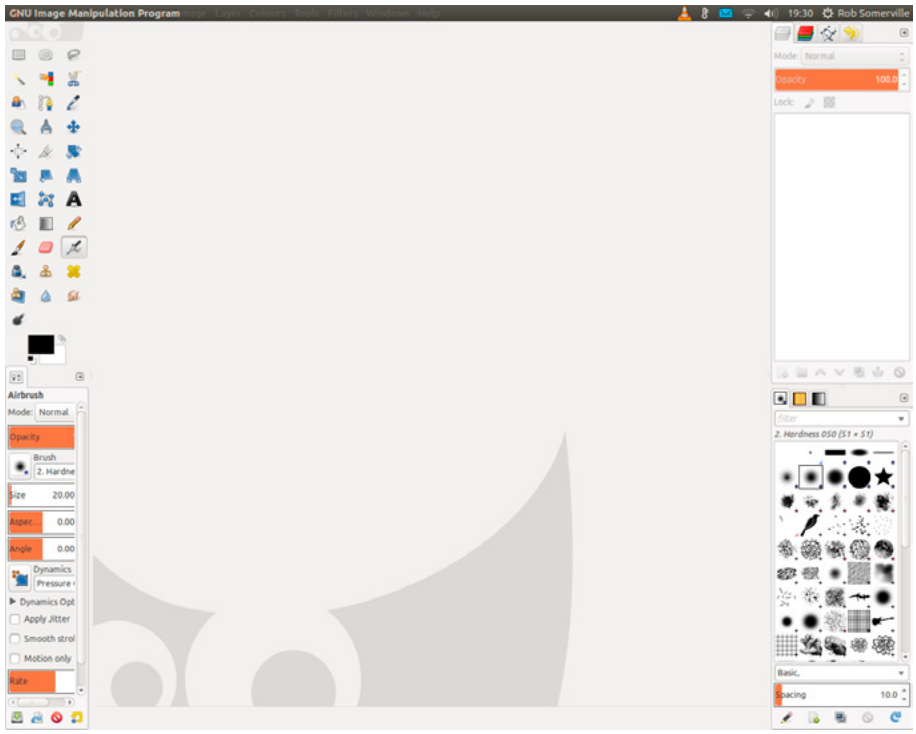

Figure 3. *Single window mode*

Also, it is important to respect copyright and attribute credit where it is due. All images used in this series will either come from the author's own collection, royalty free from *http://www.sxc.hu* or under a Creative Commons licence.

Your Chance to Contribute

If you have an image you would like manipulated, or have some ideas for the series, please contact me via BSD magazine. While my favourite task is taking mundane images and applying liberal doses of satire, surrealism or atmosphere, I am open to suggestions and any commissions from readers.

Let's get started

Install Gimp on a PC and platform of your choice, either via your package management system or by download from *www.gimp.org/downloads*. Upon opening the Gimp, you will be presented with multiple windows [Figure 2]. As I am left handed and I don't like multiple floating windows cluttering my desktop, I have selected Windows → Single-Window mode [Figure 3]. I have also moved all the tabs from Layers, Brushes, Gradients etc. across to the left hand side dock, and expanded the width slightly so all the controls are visible [Figure 4]. You may want to tweak the default settings as well [Figure 5 – 8].

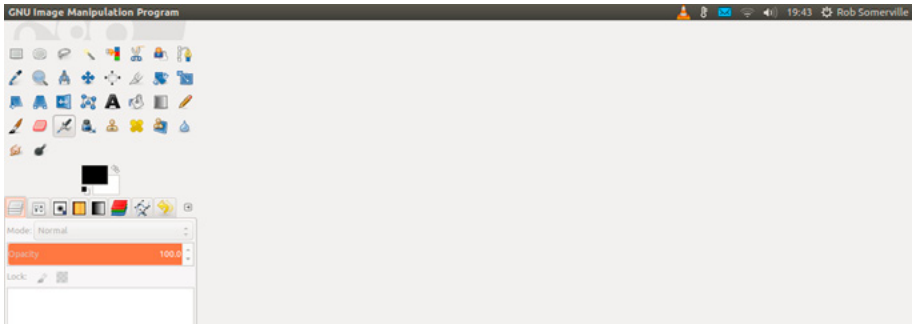

Figure 4. *Controls moved to the left hand side*

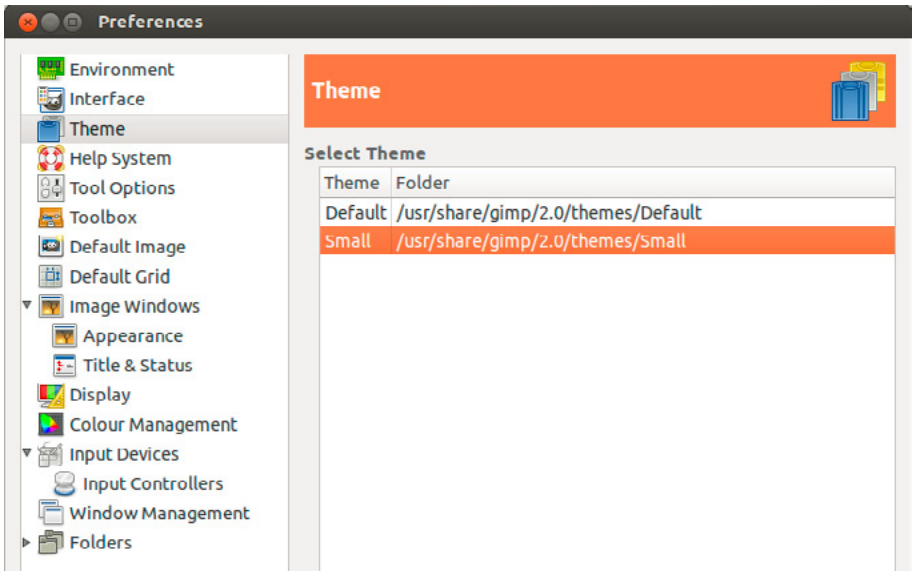

Figure 5. *Use a smaller theme to increase desktop real estate*

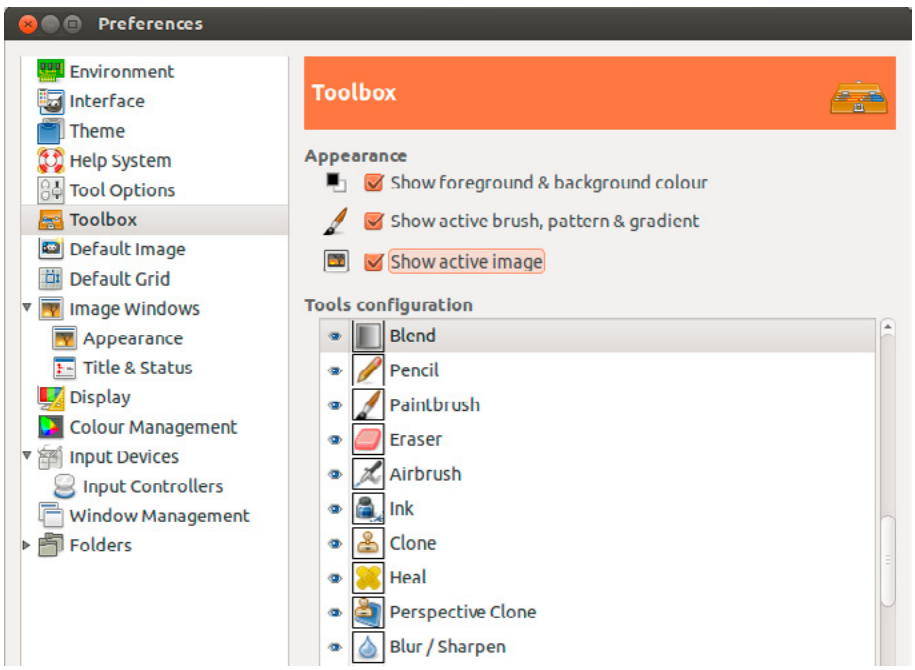

Figure 6. *Show brushes and images*

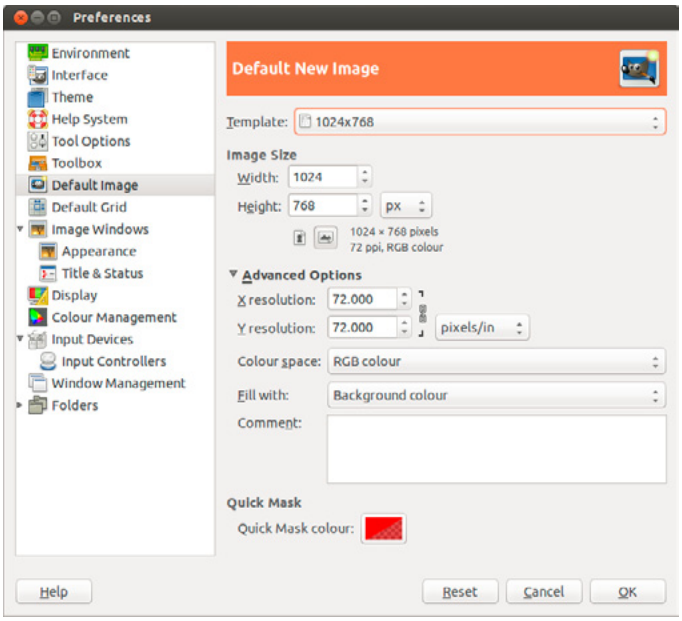

Figure 7. *Set the default template size*

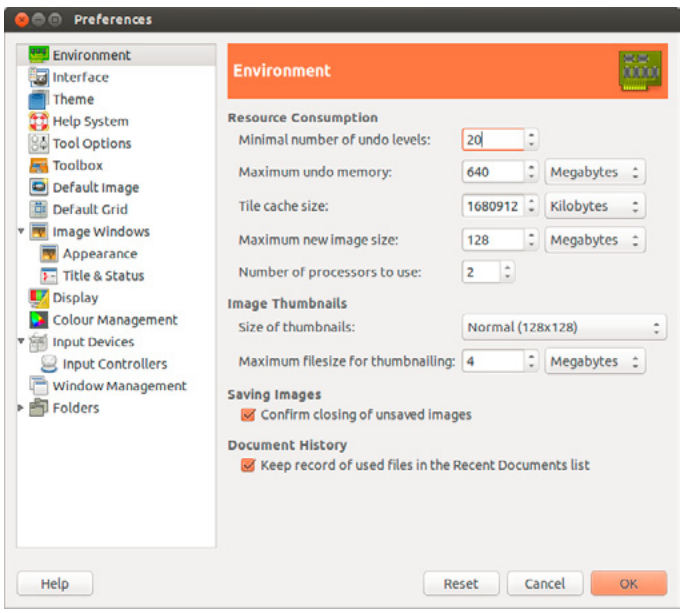

Figure 8. *Increase undo levels and undo memory*

Editing an image

A list of the major tools and functions is listed in Table 1. In the belated spirit of St Valentines day, we will modify a picture of a rose and add a shadow using a mask and multiple layers to produce the resulting Image 2. These two tools are very powerful, and quickly allow the designer to transform an image with ease.

Image 1. *rose-with-bud-ii-1436558-m.jpg*

Image 2. *The final picture*

Step 1
Download rose-with-bud-ii-1436558-m.jpg (Image 1) from the website listed in Table 2. Open in the Gimp using *File → Open*

Step 2
Rotate the image with *Image → Transform → Rotate 90 Degrees anti-clockwise*. Zoom in by pressing + a couple of times or click on the image with the Zoom tool [Figure 9].

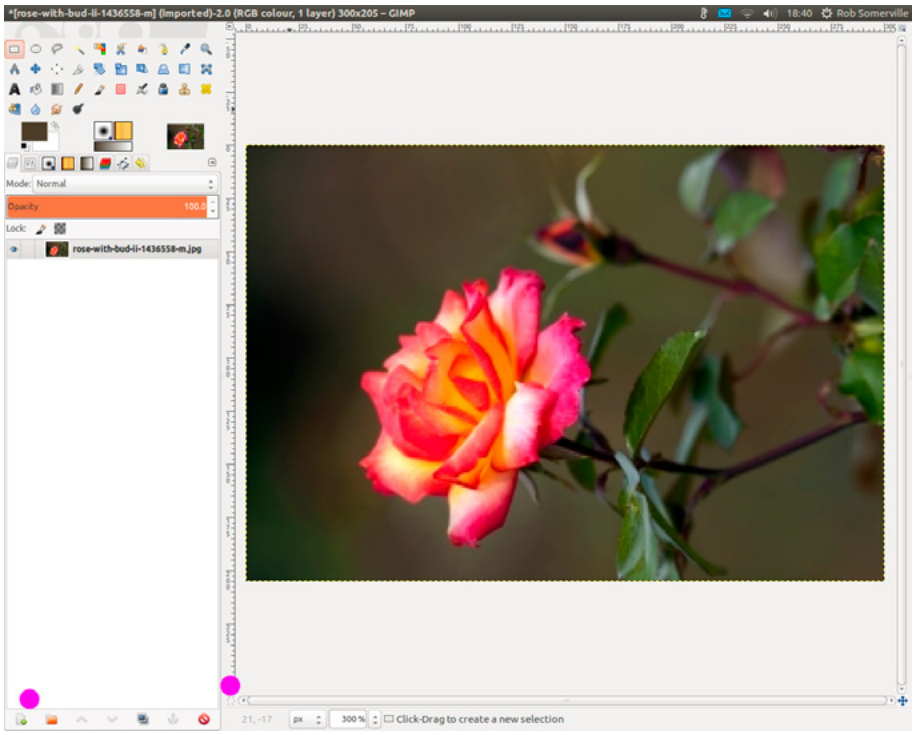

Figure 9. *Image loaded into the Gimp. New layer and mask icons highlighted*

Step 3
Using the fuzzy select tool, click on the image at position 100px x 50px to make a selection. You will see a boundary of "marching worms" [Figure 10].

Step 4
Click on the *Toggle quick Mask* icon just to the bottom Left Hand Side of the image or press *Shift Q*. A red mask will cover the areas that will not be affected by our changes [Figure 10].

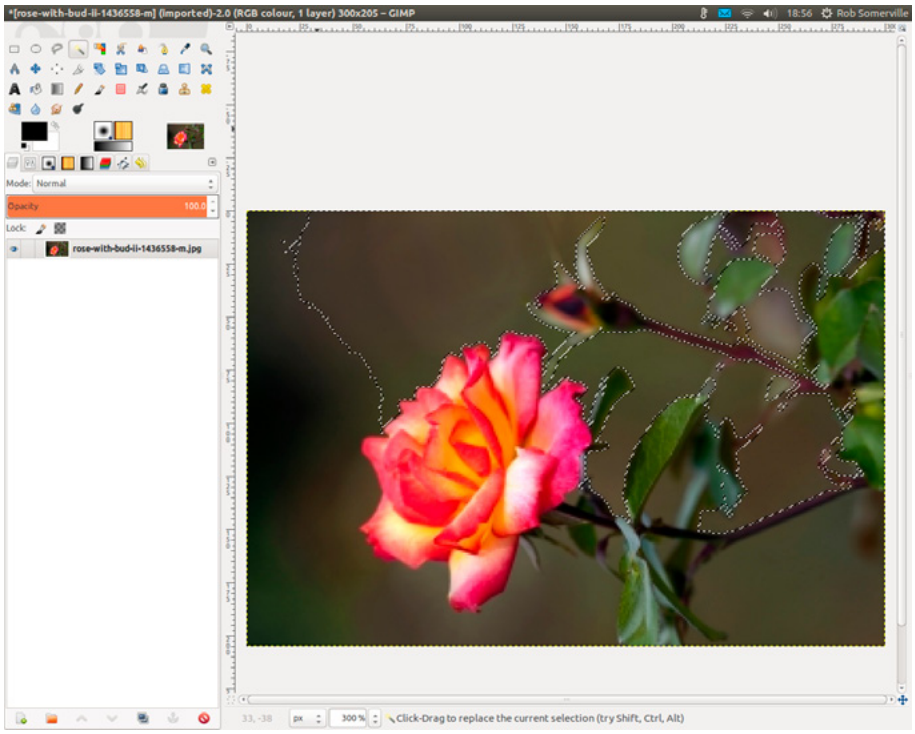

Figure 10. *Fuzzy select*

Step 5

Using the erase tool, and increasing / decreasing the size of the brush as required, remove the mask from the background to leave the rose, the stem and a few leaves. Zoom in and out as required (+ / –), and don't worry if you overshoot slightly. Either press *Ctrl Z* to undo, or retouch with the paintbrush tool. I used the 2. Hardness 025 brush circular, but choose a brush you feel comfortable with. The final result should look like Figure 11. [Figure 11 – 12].

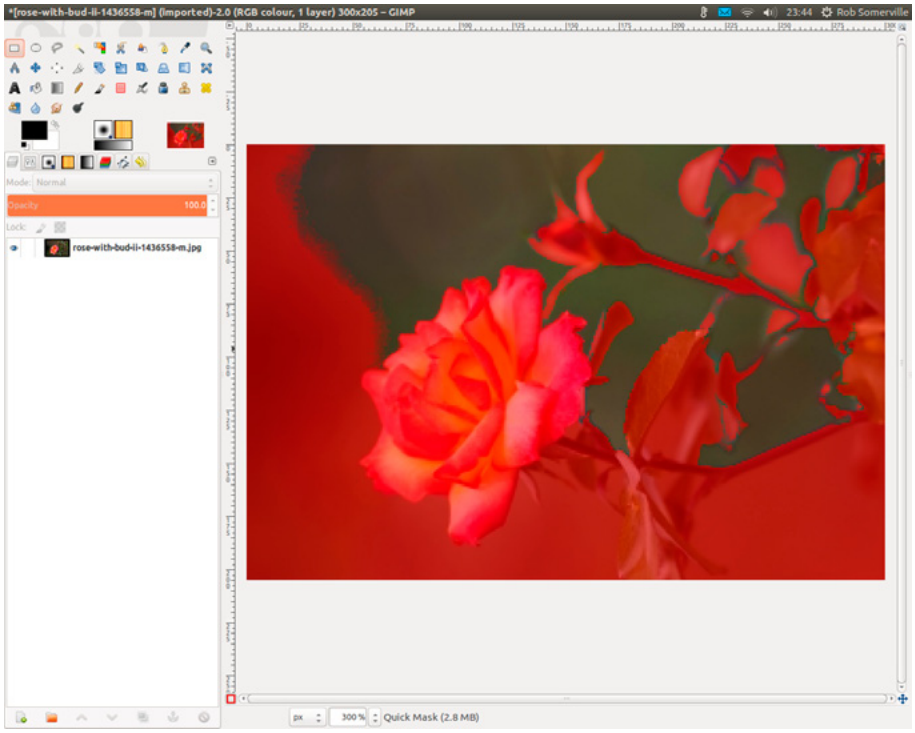

Figure 11. *Mask toggled on*

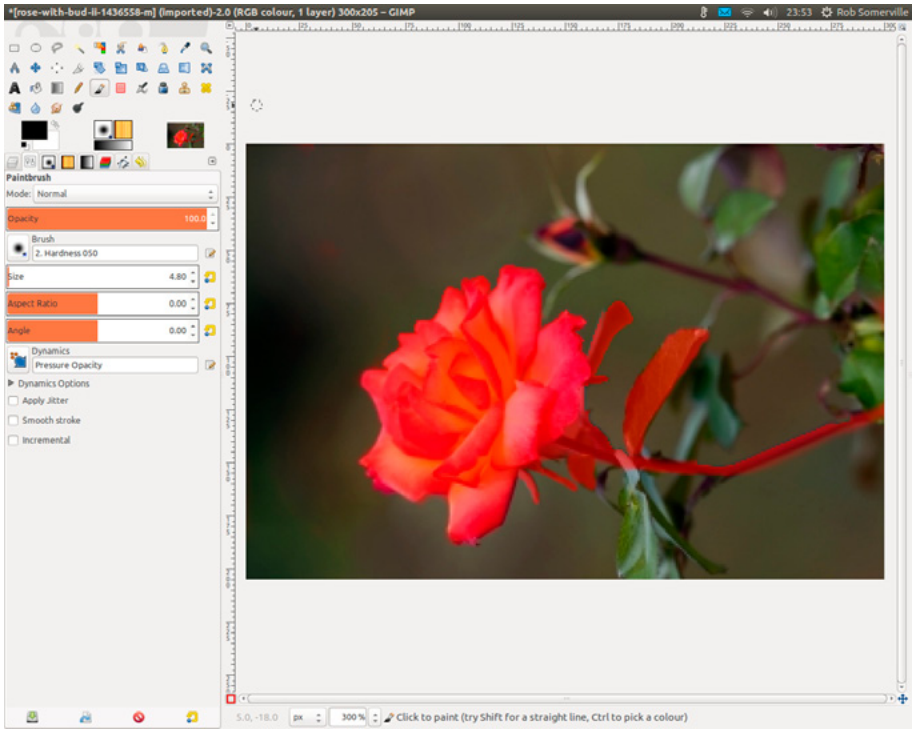

Figure 12. *Final masked area*

Step 6

Un-toggle the Quick Mask and the flower with leaves should be selected [Figure 13].

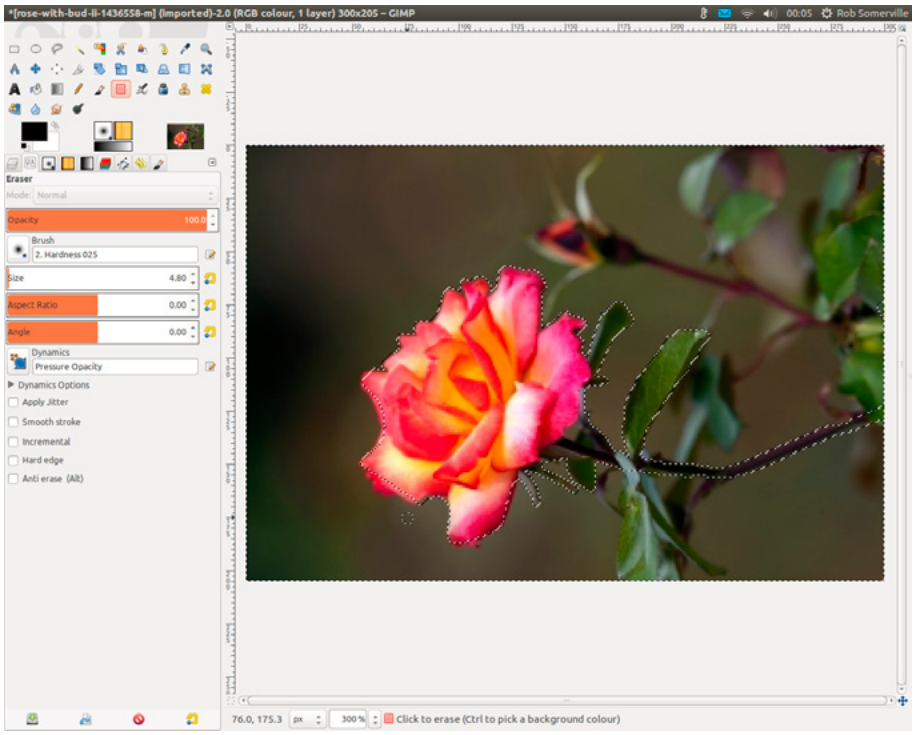

Figure 13. *Selected area with "marching worms"*

Step 7

Press *Ctrl*, and the background will be filled with a black background. Press *Shift Ctrl A* to deselect the background and zoom out to 100% [Figure 14].

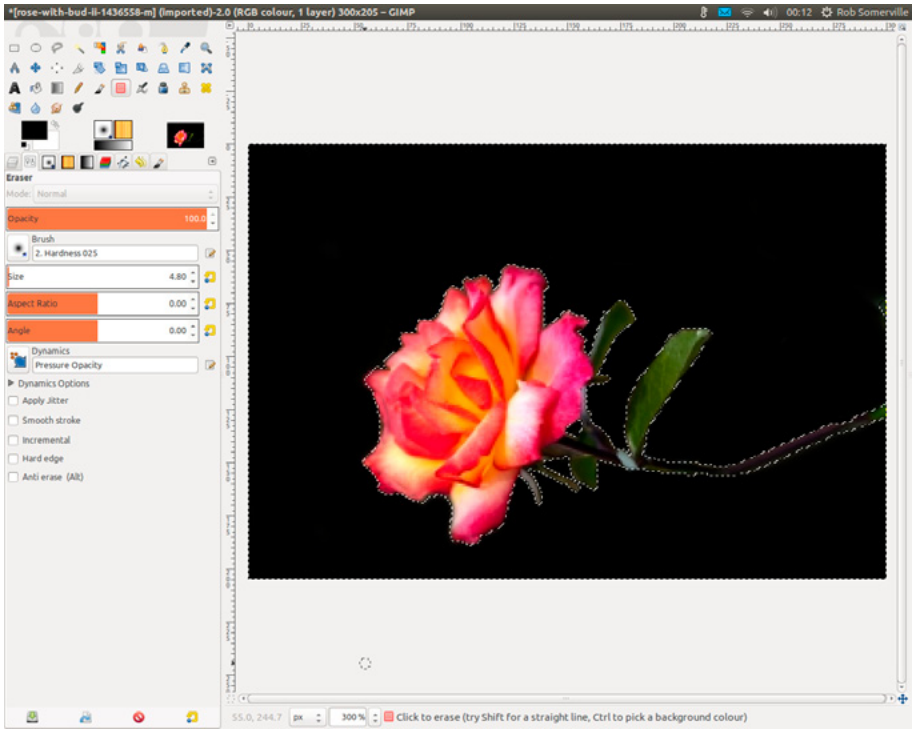

Figure 14. *Rose on black background*

Step 8

From the menu *Image → Canvas size* resize the image to 300px x 410px. Ensure the chain between width and height is broken and that *Resize layers → All layers* is selected. Click on the *layers icon* and add a new black layer. Drag this new layer down so the rose is the top layer. Right click on the rose layer and add transparency by adding a new *Alpha channel*, then using the rectangular select tool, highlight the white area beneath the rose. Press *Del* to delete this selection, then press *Ctrl I* to select the upper part of the image. Press *Ctrl C* to copy, click on the lower black layer and press *Ctrl V* to paste the selection. Using the move tool, adjust the copy of the rose so that it is roughly below the first top rose, then select *Layer → Transform → Flip* vertically. Use the move tool to adjust the position of the lower layer so that approximately 1/3rd of the inverted rose is showing. When satisfied, right click on the floating selection and choose *Anchor layer*. [Figure 15].

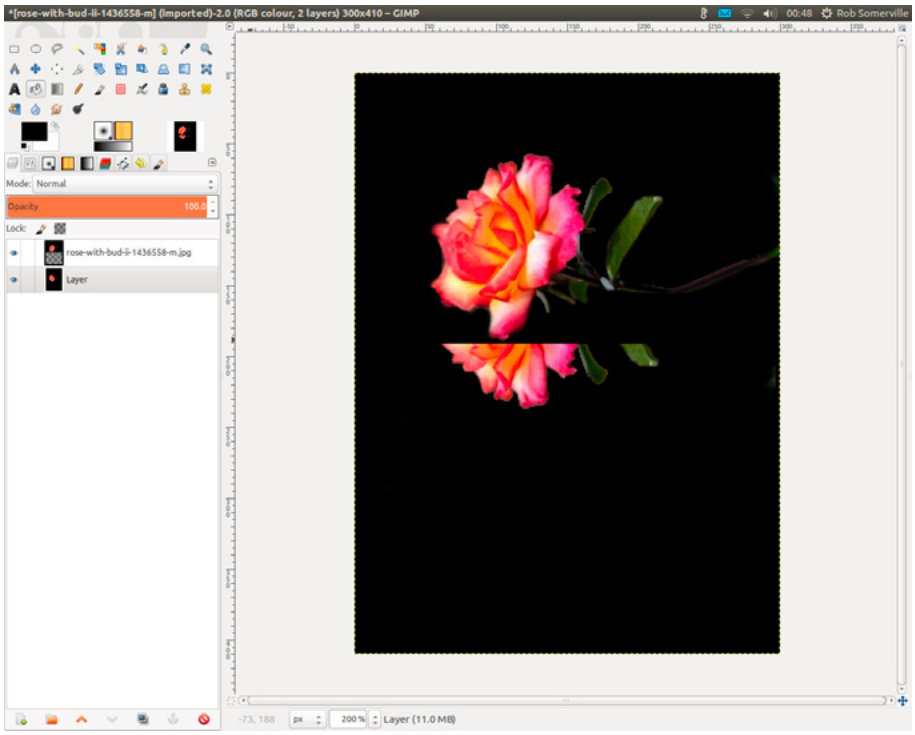

Figure 15. *Rose with inverted reflection before top layer erased and transparency / blur applied*

Step 9

Click on the top rose layer. Using the erase tool, remove just enough of the top black area to make the reflection look convincing. Add a new black layer with 65% transparency between the rose and the reflection. Select the bottom layer and blur by 6px using *Filters → Blur → Gaussian blur*. Crop the image using the crop tool and the finished result can be seen in Image 2.

Table 1. *Major tools and functions*

Tool	Description and usage
	Rectangle select.
	Ellipse select
	Free select
	Fuzzy select
	Colour select
	Scissors select
	Foreground select
	Paths tool
	Colour picker
	Zoom
	Measure
	Move
	Alignment
	Crop
	Rotate

	Scale
	Shear
	Perspective
	Flip
	Cage transform
	Text
	Bucket fill
	Blend
	Pencil
	Paintbrush
	Eraser
	Airbrush
	Ink
	Clone
	Healing

	Perspective clone
	Blur / sharpen
	Smudge
	Dodge / burn
	Foreground / background colours
	Layers
	Tool options
	Brushes
	Patterns
	Gradients
	Channels
	Paths
	Undo history
	Configure tab

Table 2. *Details and credits*

Image	URL	Details and credits
Image 1	http://www.sxc.hu/photo/1436558	ROSE with BUD II Rose blossom and nearby bud in vibrant color hues. Uploaded by lance1

Resources

- The Gimp website – *http://www.gimp.org*
- Search Creative commons – *http://search.creativecommons.org*
- Deviant art – *http://www.deviantart.com*
- Stock.xchng – *http://www.sxc.hu*

In the next article

We will look at improving our reflected image and lighting, shade and dark.

ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

Getting to Grips with the Gimp – Part 2

In our new series on image manipulation and design, we will continue to look at graphic design basics, and how to use the most popular Open Source graphics software – The Gimp.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

In the last article we looked at the basics of The Gimp and created a rose with a reflection. In this tutorial, we will look further at layers, gradients, light, text and shadow and create the image “The gimp is great”.

Step 1

From File → new (or Ctrl N) create a new 640 x 480 image using the 640 x 480 template [Figure 1 – 2].

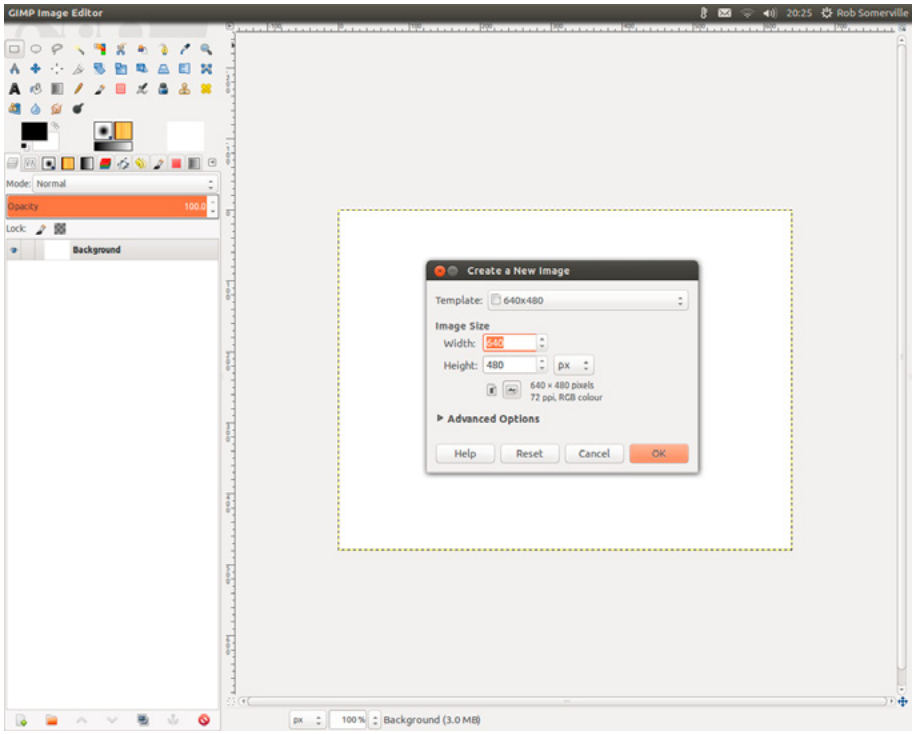

Figure 1. *Create a new image*

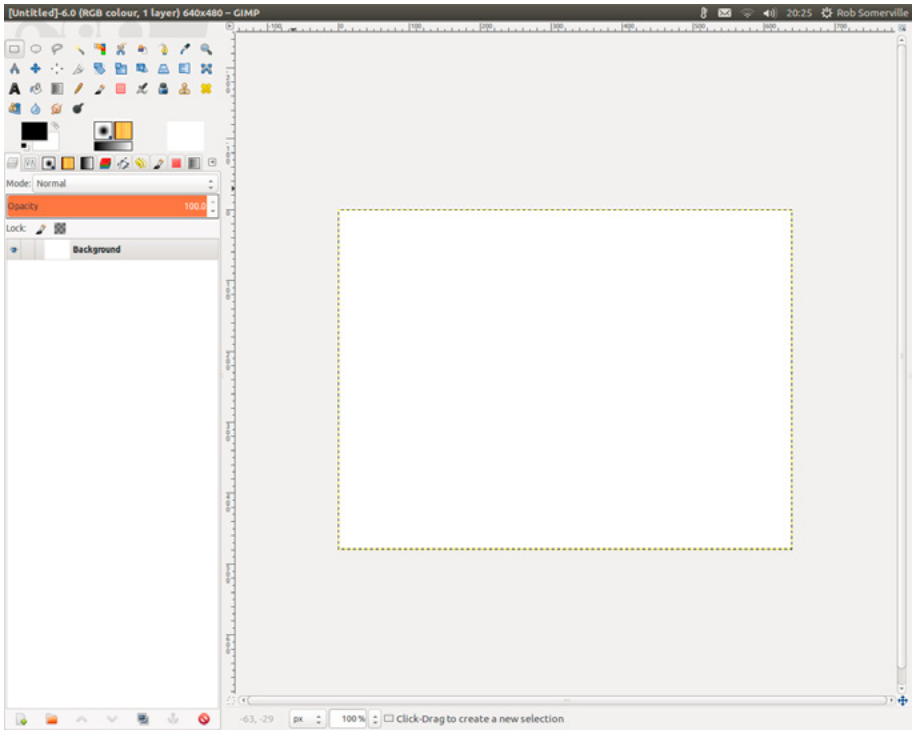

Figure 2. *Our 640 x 480 canvas*

Step 2

Pick a light foreground colour and a light background colour. I have used 6e53e0 for the foreground and 000000 (Black) for the background [Figure 3].

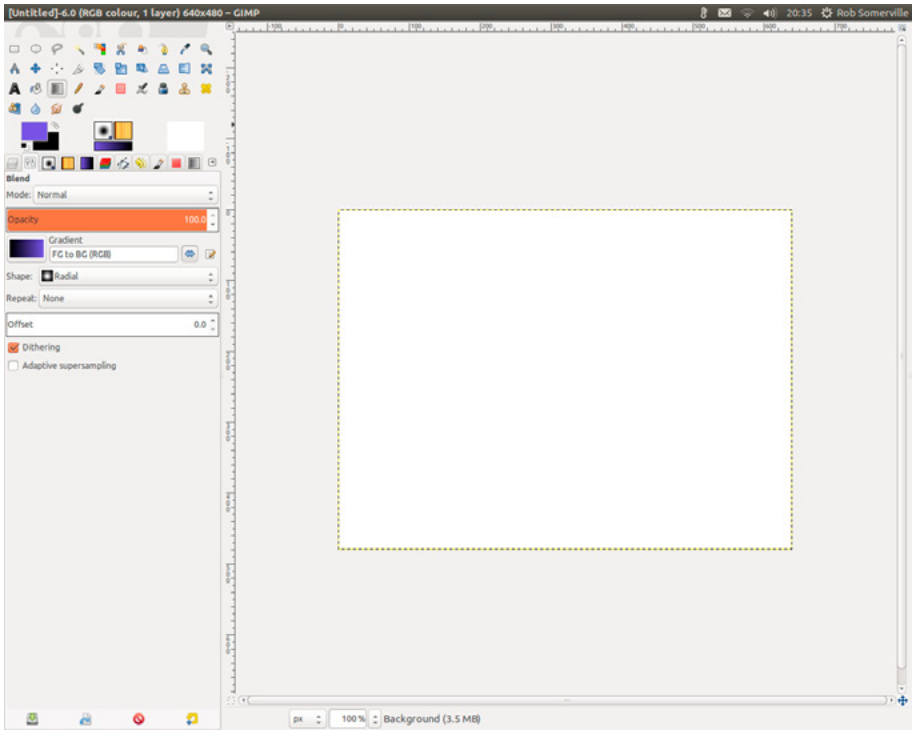

Figure 3. *Select colours and gradient mode*

Step 3

Select the Blend tool with a radial shape. Ensure the gradient is FG to BG RGB [Figure 4].

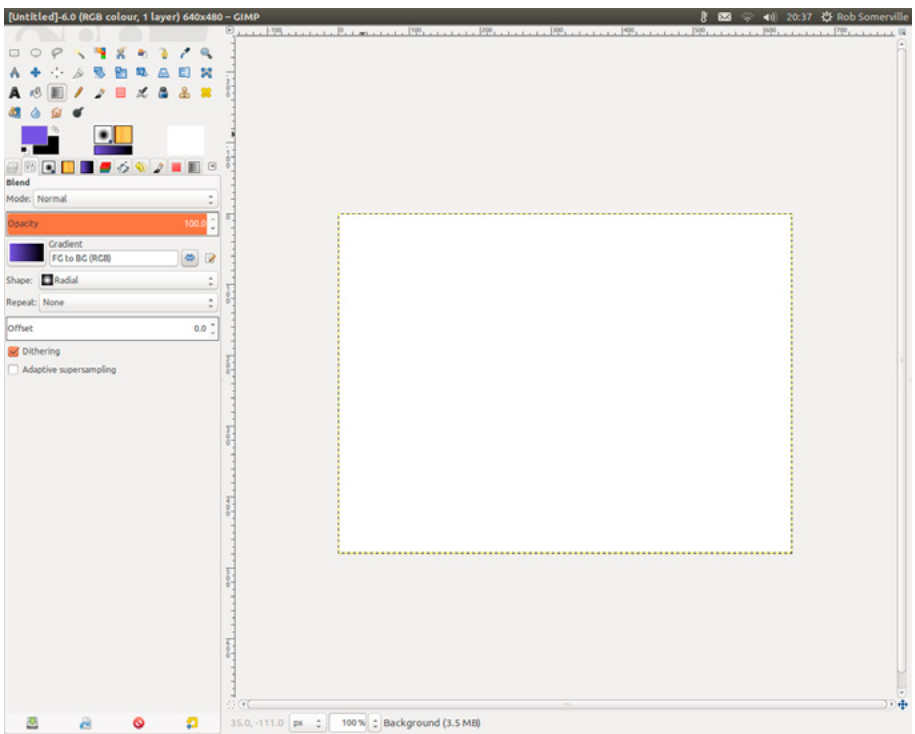

Figure 4. *Changing the gradient direction with the gradient arrows*

Step 4

Move the cursor to half the foreground and height of the image (320 x 240). Click on the middle of the screen, press Ctrl to constrain the angle to 45 degrees, and drag to the bottom edge of the image. This will create a graduated background [Figure 5 – 6].

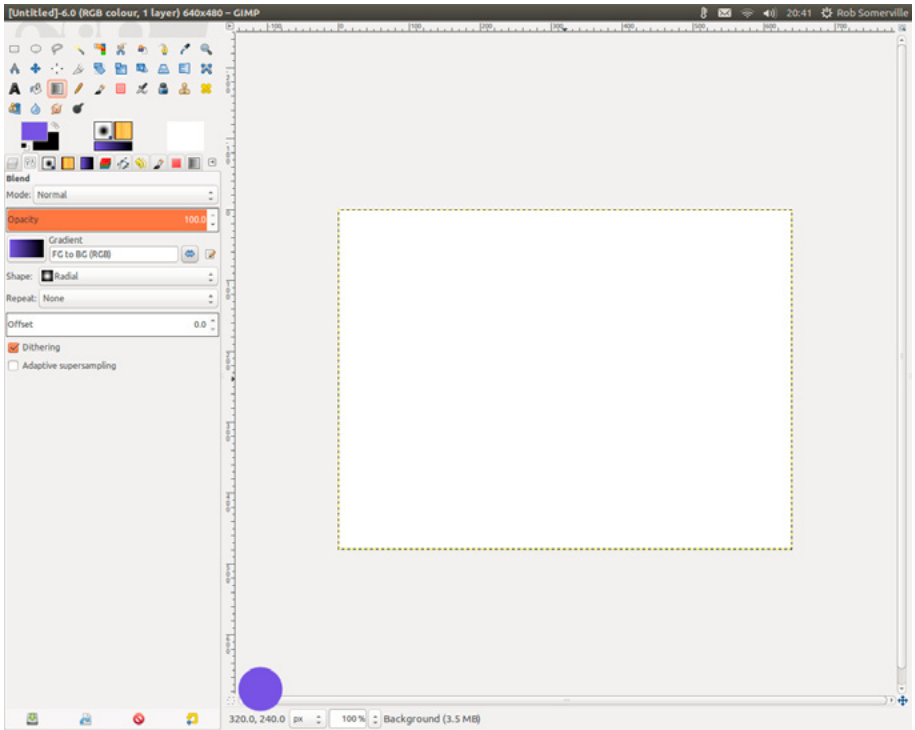

Figure 5. *Using the position indicator to move cursor to the centre of the image*

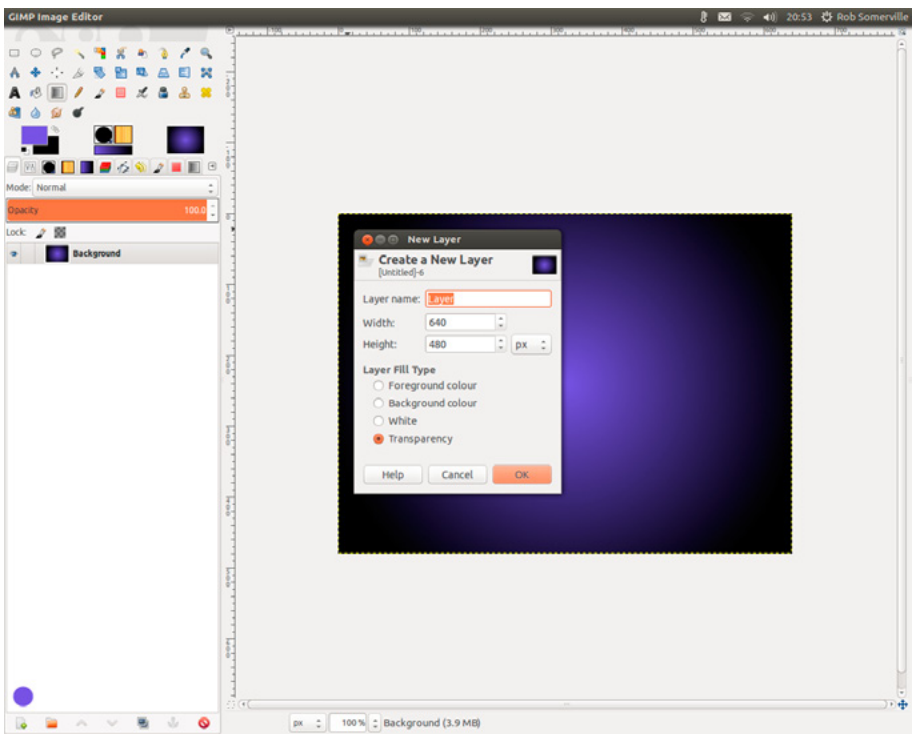

Figure 6. *The background gradient*

Step 5

Click back onto the layers tab and create a new transparent layer. Either right click in the layers area or click on the New layer icon [Figure 7].

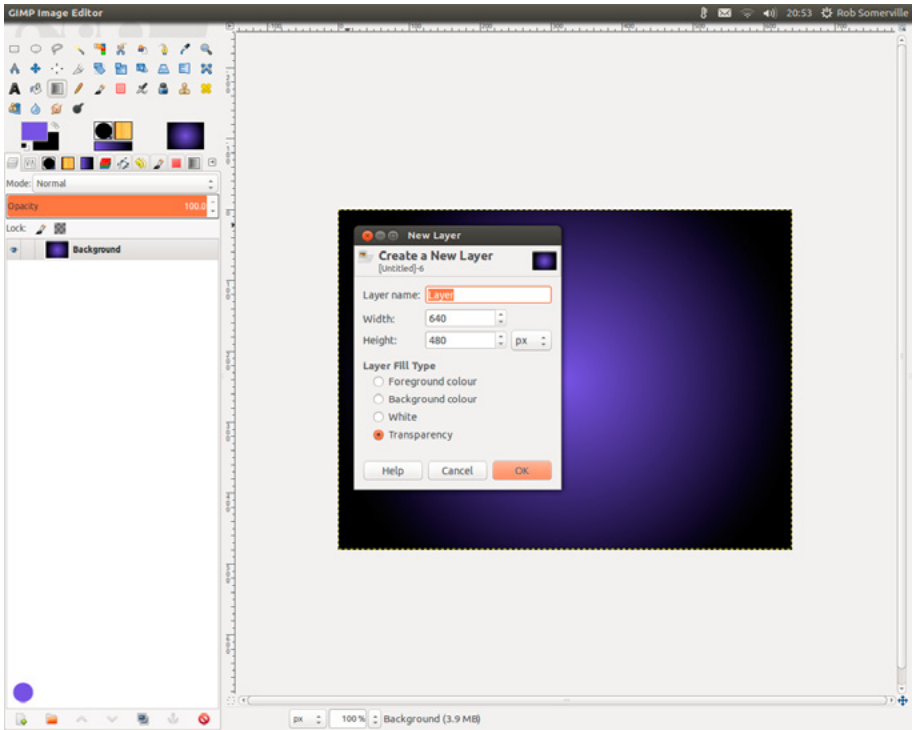

Figure 7. *Adding a new layer*

Step 6

Using the text tool, click and drag an area in the middle of the screen and add the text “The gimp is great.” Highlight the text, and change the font size, character spacing and colour so that a new text layer is created. Don’t worry about the exact position, as we can adjust this later. We will now have three layers as the text tool automatically creates a new layer [Figure 8].

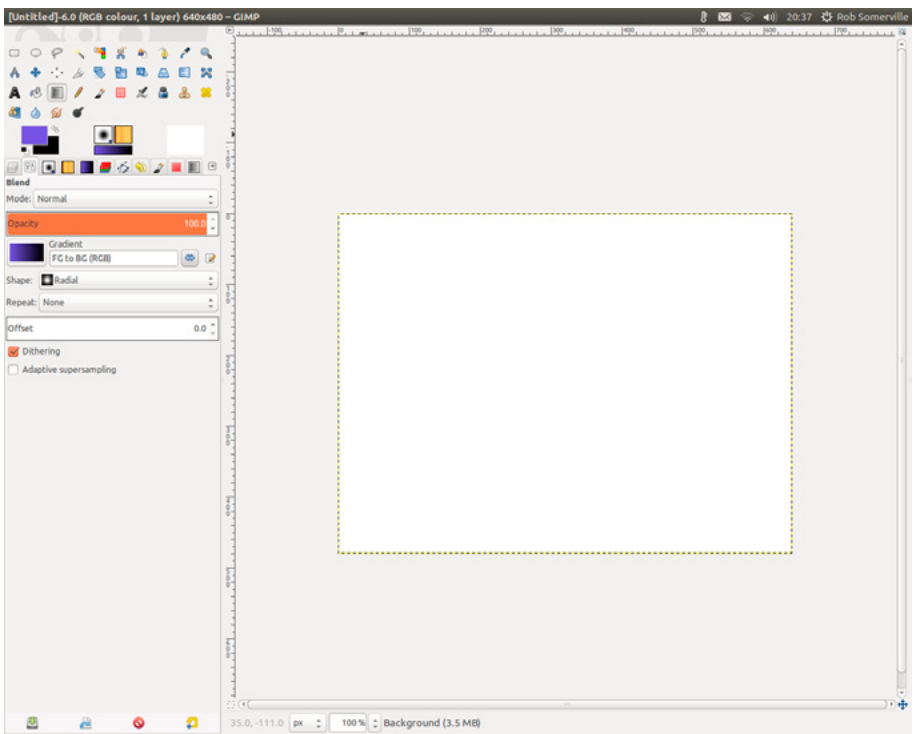

Figure 8. *Adding text*

Step 7

Click on the text layer and then on the move tool and align the middle of the centre of the “p” in “gimp” so that the brightest area of the gradient shines through.

Step 8

Click on the transparent layer we made earlier. Reverse the background and foreground colour by clicking on the small arrow between the foreground and background. Click on the gradient tool and change the fill to Bi-Linear. Click inside the “p” and drag at 45 degrees just below the text area. Ensure the darker colour is on the right hand side of the gradient [Figure 9].

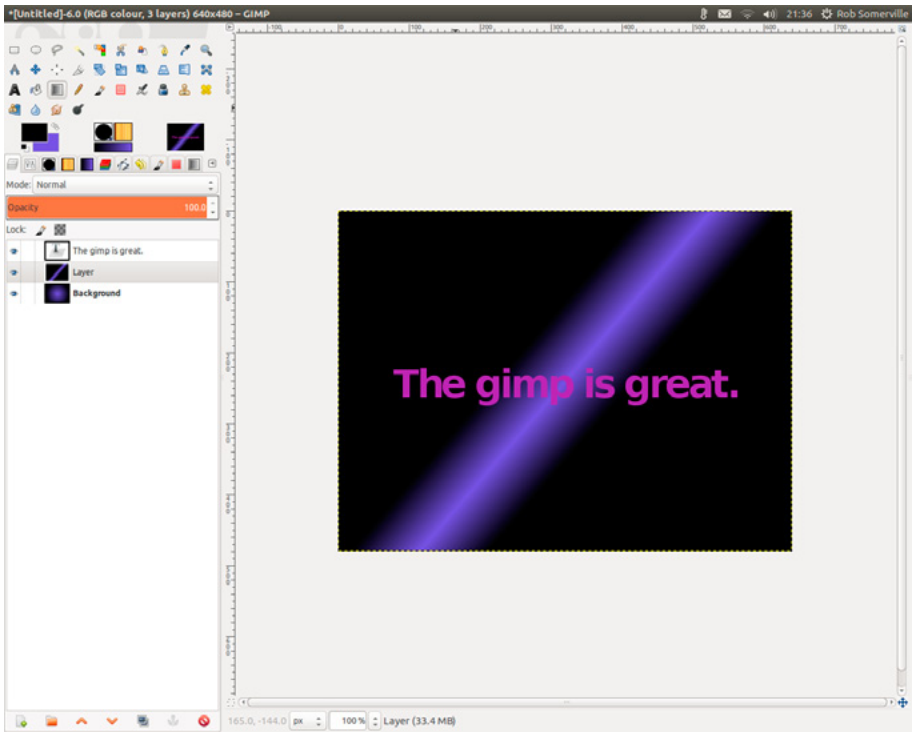

Figure 9. *Adding another layer*

Step 9

Click on the layers tab and then on the mode dropdown. Scroll through the options and choose the effect you like best. I have used the difference mode [Figure 10].

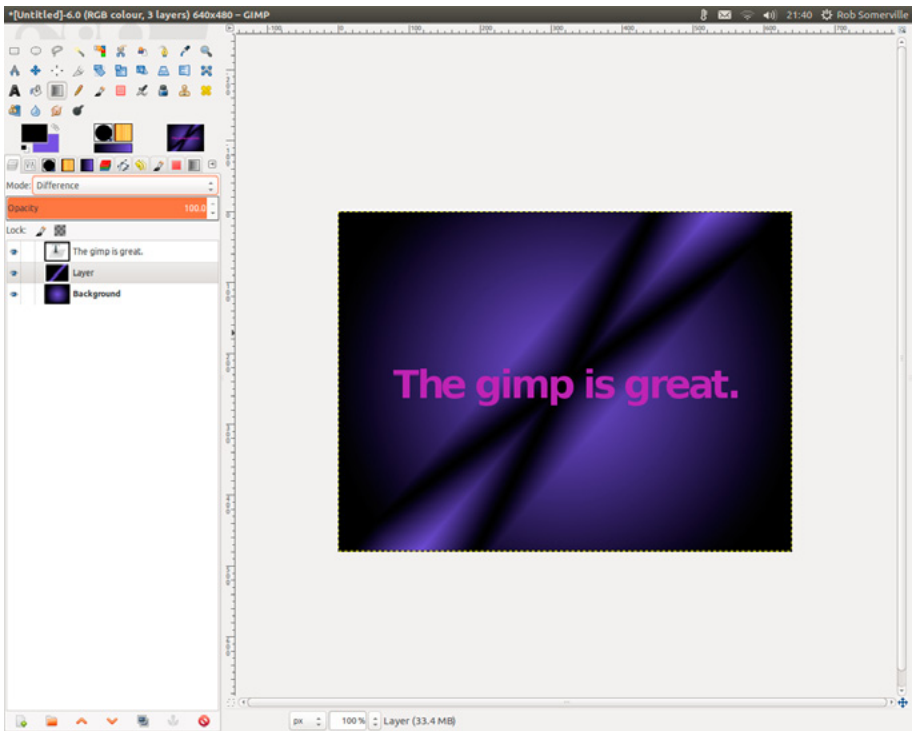

Figure 10. *The merged layers (Difference)*

Step 10

Click back onto the text layer and right click on the layer choosing Alpha to selection to select the text. Add a new transparent layer and click on it [Figure 11].

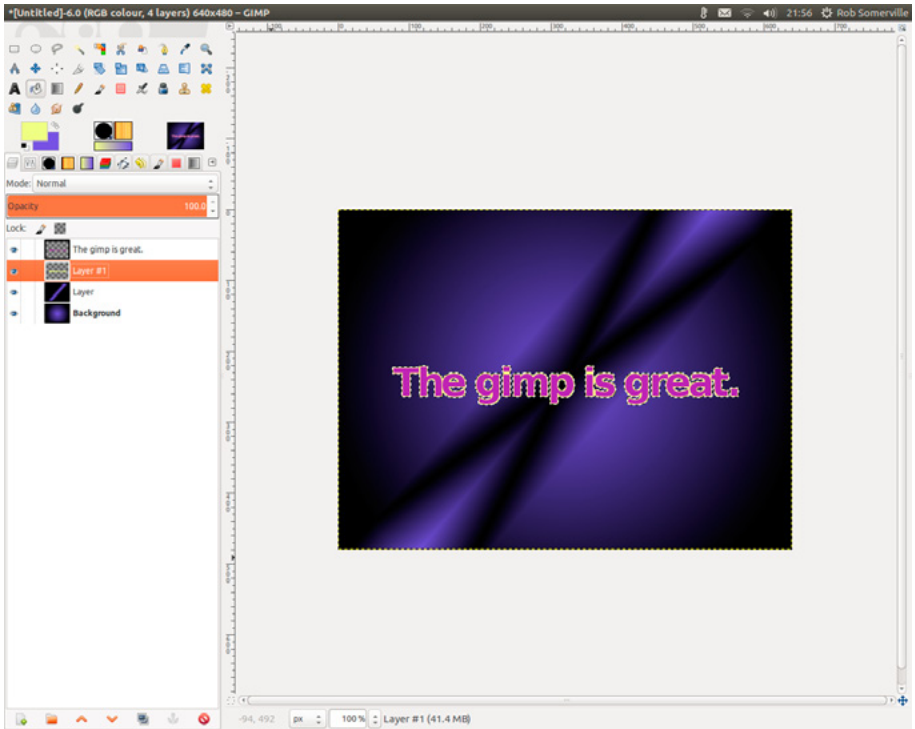

Figure 11. *Alpha selection grown with yellow outline*

Step 11

Pick a vibrant foreground colour, and click on Select → Grow and grow the outline by 2px. Press Ctrl, to fill with your chosen colour. Drag the layer below the text layer.

Step 12

Select Filters → Light and Shadow → Drop shadow and create a 45 percent opacity drop shadow in white. Hide the shadow layer [Figure 12 – 13].

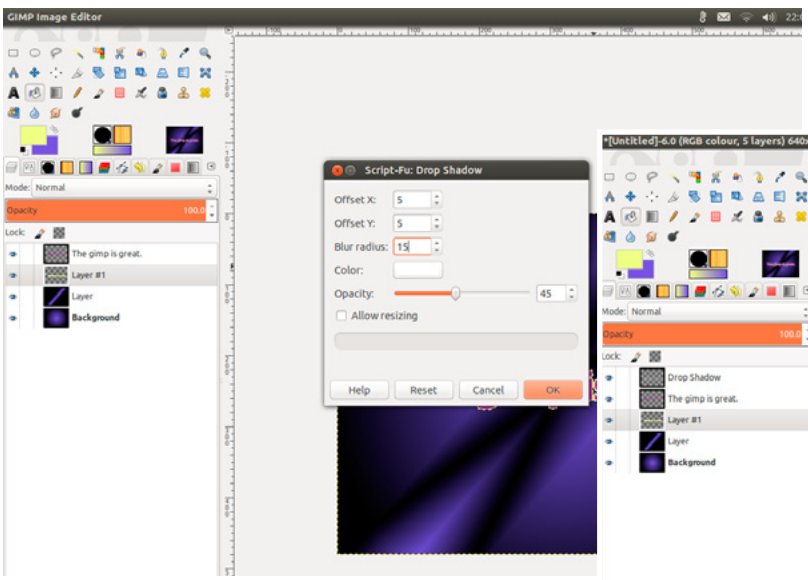

Figure 12. *Blurring the drop shadow*

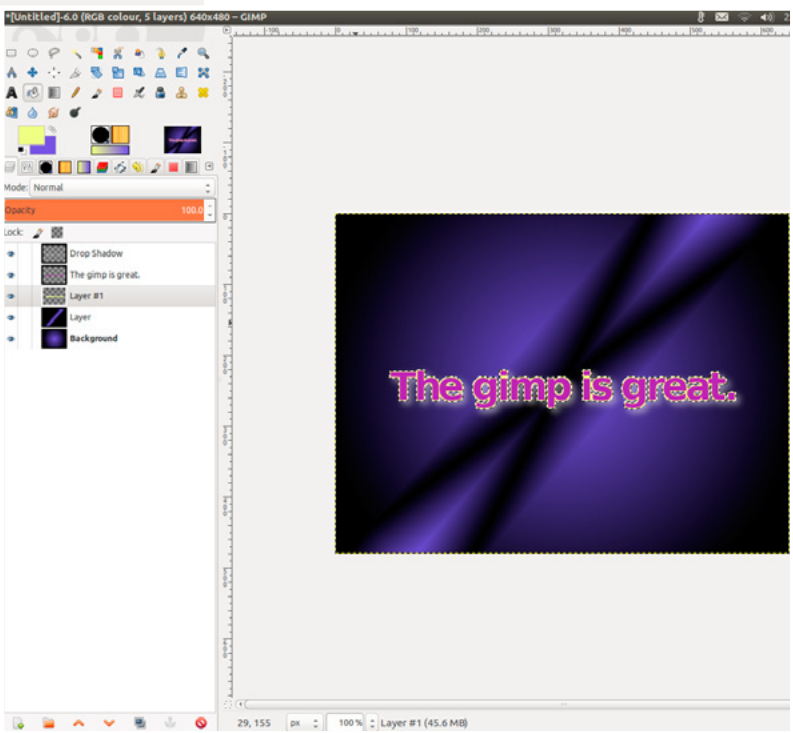

Figure 13. *Drop shadow in place*

Step 13

Create a new transparent layer and ensure it is enabled. Select Filters → Light and Shadow → Supernova and create a vibrant pink flare at position 320 x 240 with Radius and Spokes 50 and maximum hue [Figure 14 – 15].

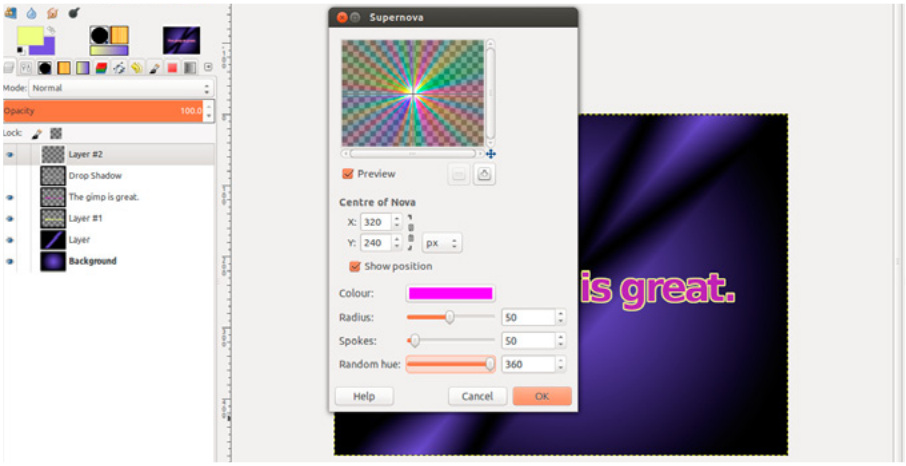

Figure 14. *Adding a multi-hue supernova*

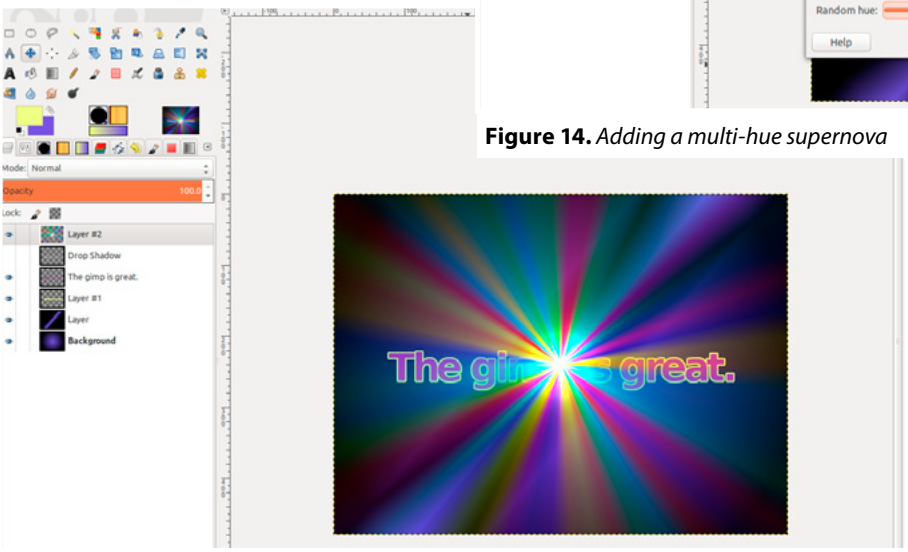

Figure 15. *Layer on top*

Step 14

Drag the layer behind Layer #1 and select Grain extract mode and 25% opacity Adjust so that the centre of the nova is in the middle of the “p” [Figure 16].

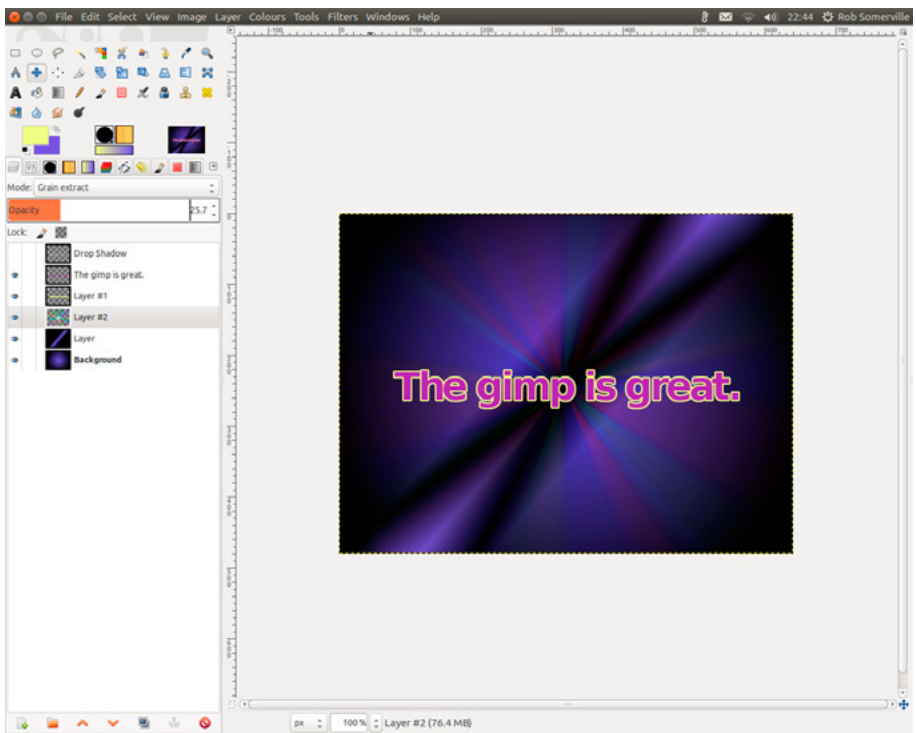

Figure 16. *Layer behind text in grain extract mode and decreased opacity*

Step 15

Re-enable the shadow layer and drag below Layer #2. Adjust the opacity until the opacity gives the desired effect [Figure 17].

Step 16

Save the image as gimp.xcf and export to PNG or JPG to use in a website etc.

Once you have saved your XCF file, experiment with the layers, opacity and layer mode. Try different gradients blended in different modes.

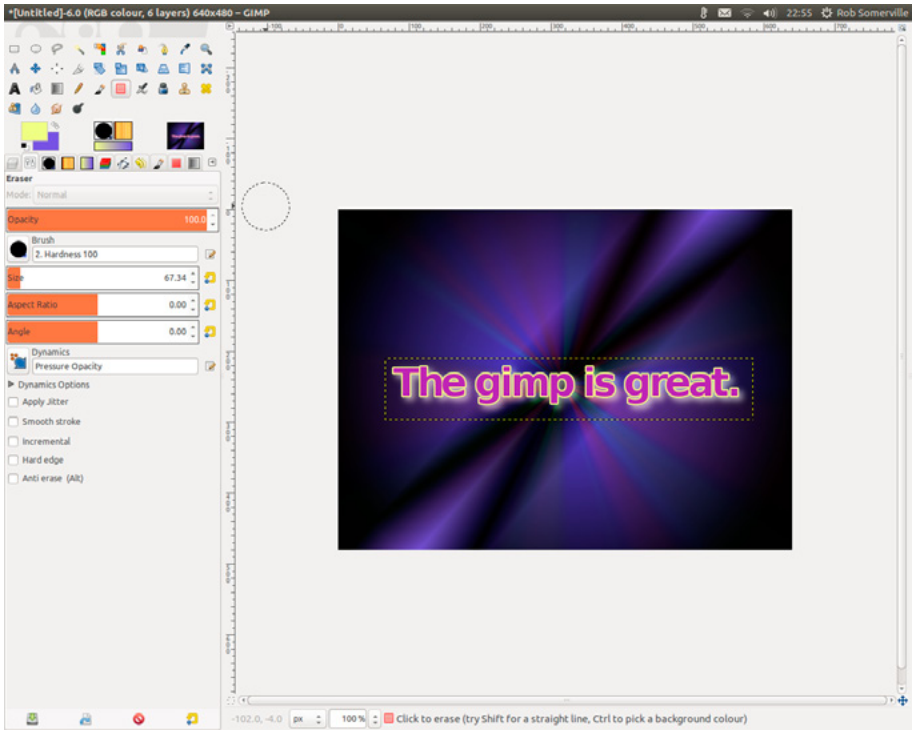

Figure 17. *The final image*

ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

Resources

- The Gimp website – *http://www.gimp.org*
- Search Creative commons – *http://search.creativecommons.org*
- Deviant art – *http://www.deviantart.com*
- Stock.xchng – *http://www.sxc.hu*

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Getting to Grips with the Gimp – Part 3

In the third in our series on the Gimp, we will create a pastiche that depicts the current political crisis in the Ukraine.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

There is nothing new under the sun. Inspired by a pastiche in today's Sunday newspaper, we will create a graphic that portrays the current crisis in the Ukraine.

Step 1

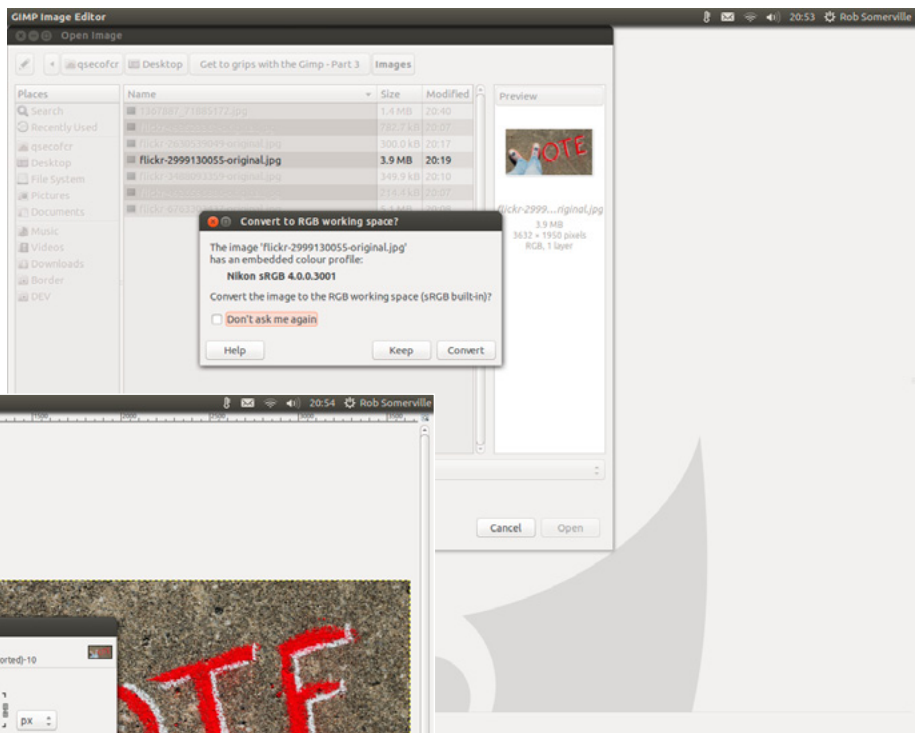
Download the images listed in Table 1.

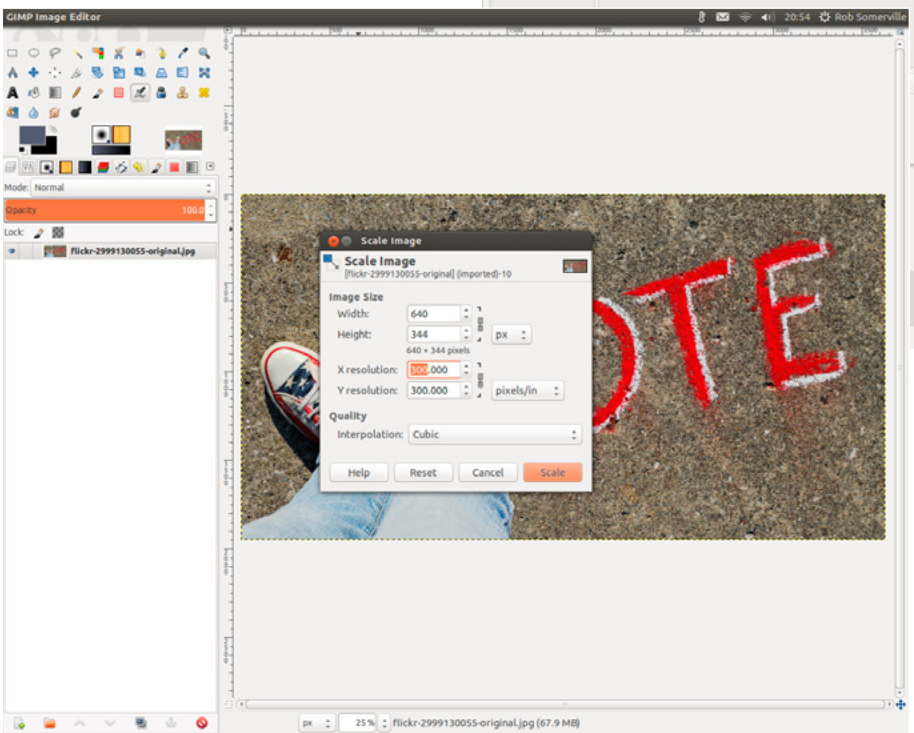
Table 1. *Details and credits*

Image	URL	Details and credits
EU Flag	http://www.freeimages.com/photo/1367887	European flag in the wind Uploaded by Ayla87
President Putin	http://www.fotopedia.com/items/flickr-3488093359	photo by World Economic Forum on Flickr
President Obama	http://www.fotopedia.com/items/flickr-6763303437	photo by Intel Photos on Flickr
US dollar	http://www.fotopedia.com/items/flickr-2630539049	photo by iChaz on Flickr
Ukraine flag	http://www.fotopedia.com/items/flickr-493523361	photo by LancerenoK on Flickr
Nuclear explosion	http://www.fotopedia.com/items/flickr-4926596880	photo by The Official CTBTO Photostream on Flickr
Vote now	http://www.fotopedia.com/items/flickr-2999130055	photo by Theresa Thompson on Flickr

Step 2

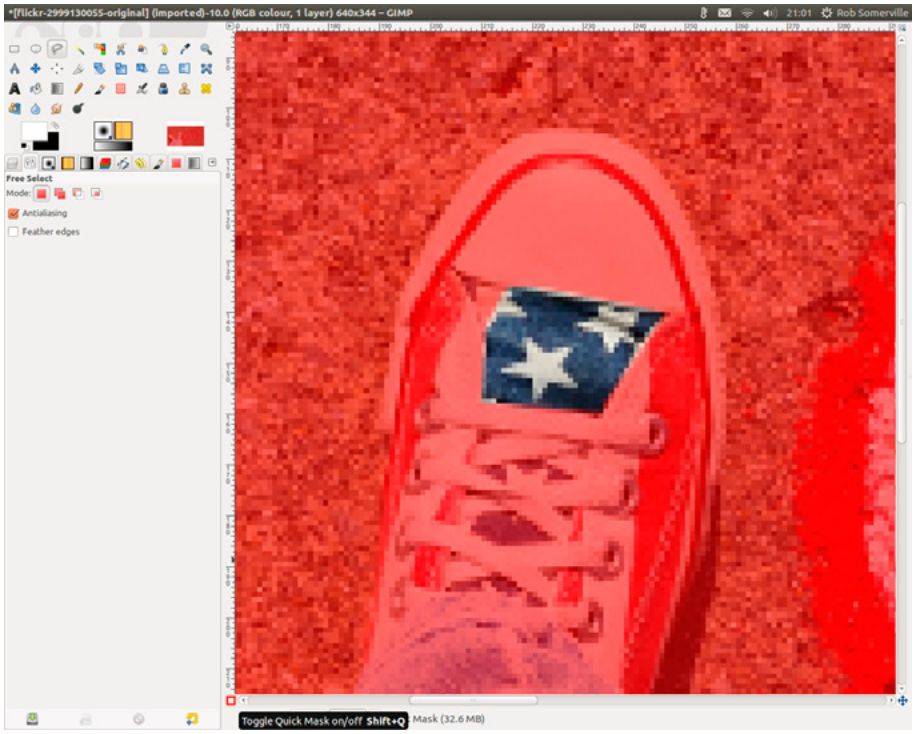
Let's start with the "Vote Now" image. As we will use this on the right hand side of the picture, we will have to remove the US stars from the sneaker. Open the file in the Gimp and resize to a width of 640px [Figure 1 and 2].





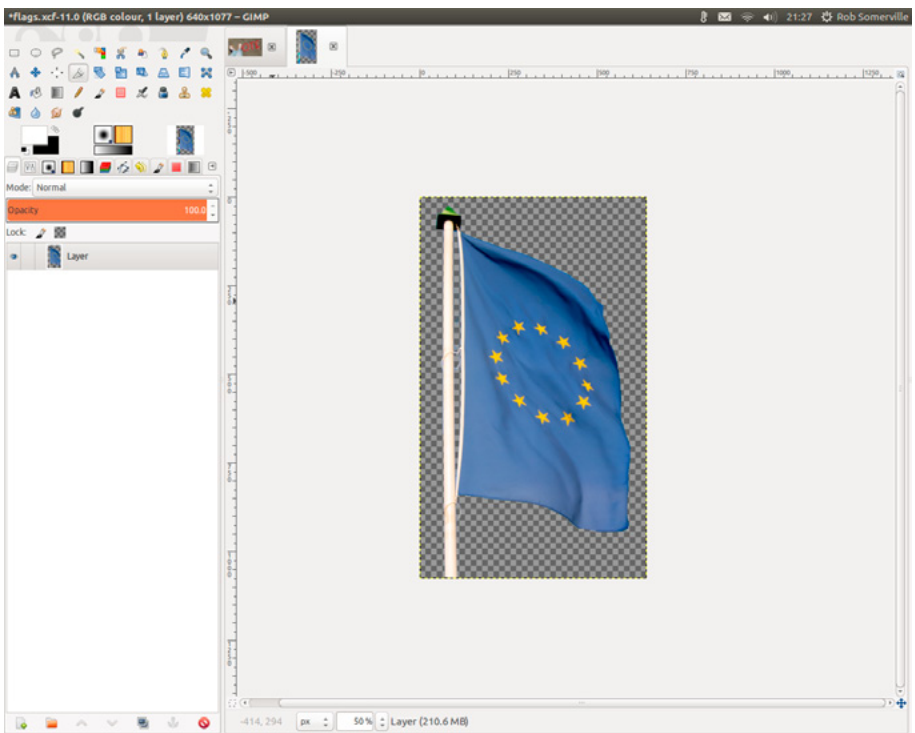
Step 3

Zoom in and, using the freehand select tool, select the blue / stars area from the sneaker. Paint the area white with the paintbrush tool or press. Deselect the area, and using the smudge tool, blend the greyer area of the top of the sneaker into the area you just painted. Repeat with the other foot. As the marching worms is not clear, I have turned on the mask to highlight the area that will not be affected by our paint process. Save the image as shoes.xcf [Figure 3].



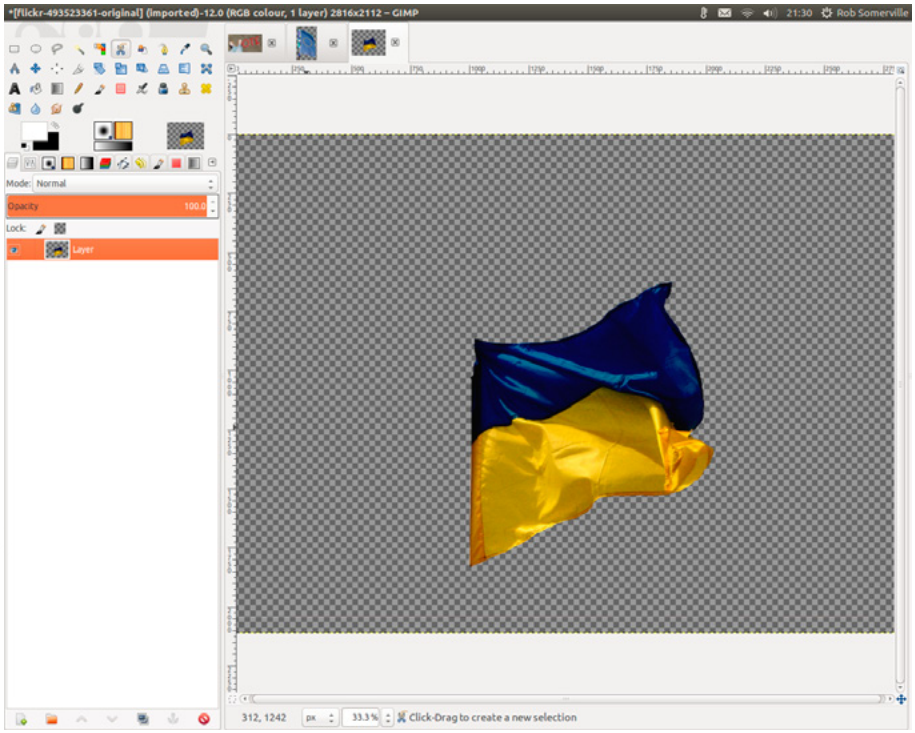
Step 4

Open the image of the European flag. Using the Scissors select tool, click around the flag and the flagpole and join the nodes up at the bottom once you have gone round the flag. Click on the middle of the flag to finish the selection, copy the area, create a new transparent and paste and anchor the selection. Delete the original layer. Using the fuzzy select tool, select and delete the sky areas between the flag and the flagpole. Crop, and save as flag.xcf [Figure 4].



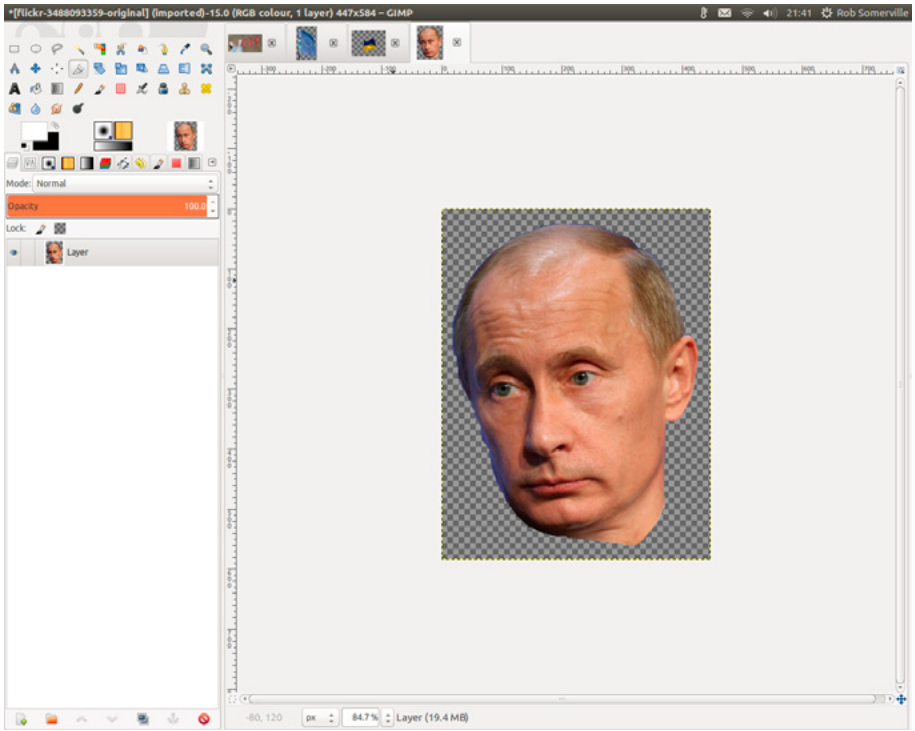
Step 5

Repeat step 4 with the Ukrainian flag, but omit the flagpole. Save as ukrainianflag.xcf [Figure 5].



Step 6

Open the image of the Russian President, and repeat step 4 so that you have just the leader's face. Crop and save as putin.xcf [Figure 6].

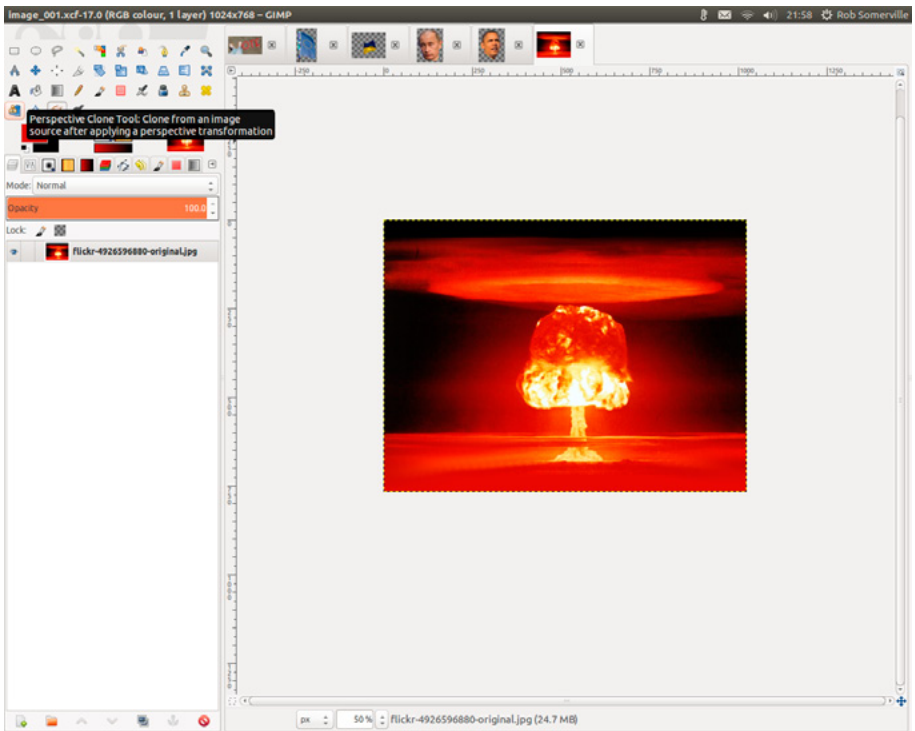


Step 7

Open the image of the US President, and repeat step 4 so that you have just the leaders face. Crop and save as obama.xcf [Figure 7].

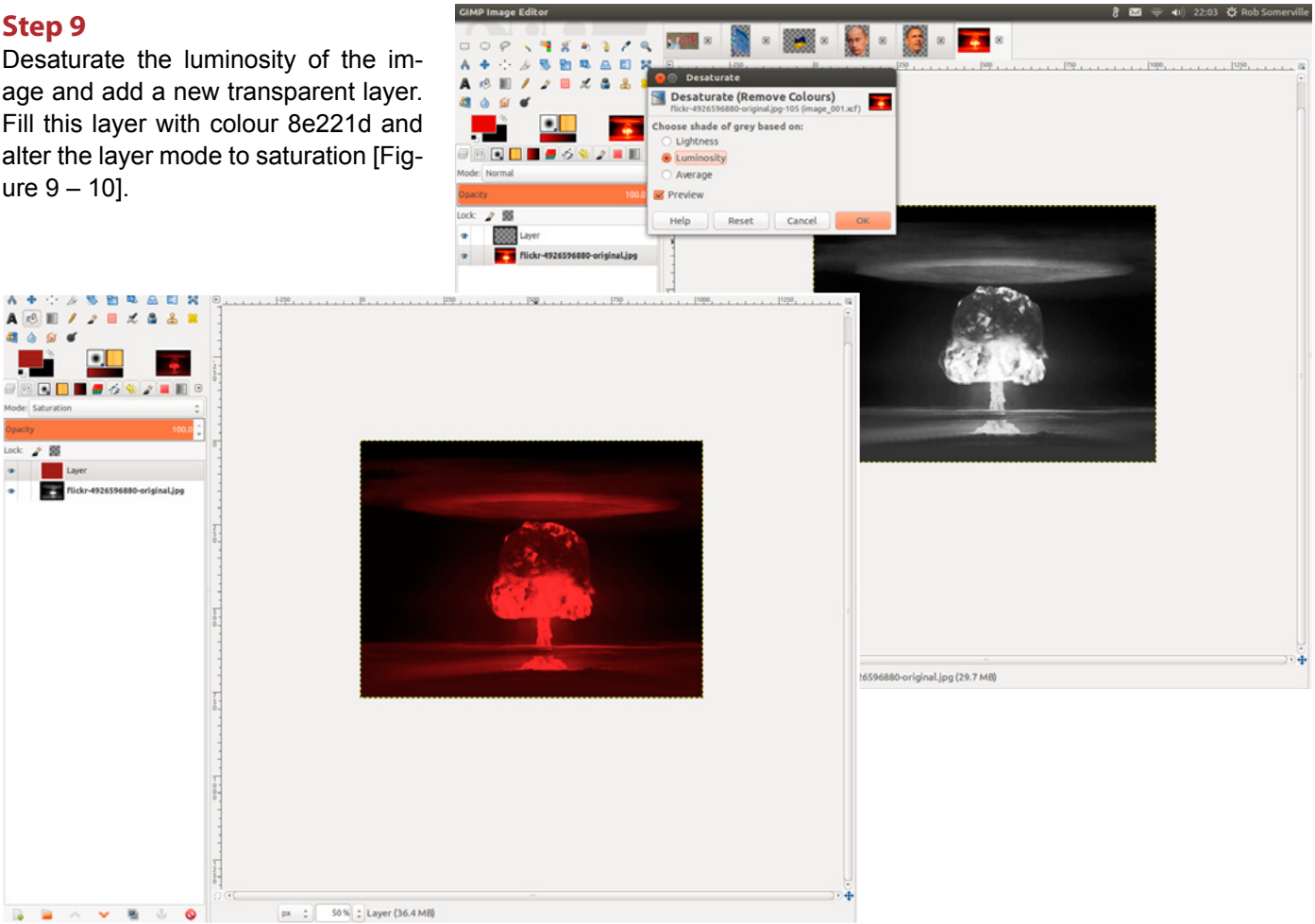
Step 8

Open the nuclear explosion image and crop the area of the mushroom cloud in the middle. Resize to width 1024px, and adjust the canvas size to 1024 x 768. Ensure the chain is un-clicked, as we only want to increase the height. Adjust the layer to image size, and fill the bottom of the image with red picked from the bottom edge of the explosion. Using the smudge tool, blend the bottom and top of the image so that the hard line is erased. Save as image_001.xcf [Figure 8].



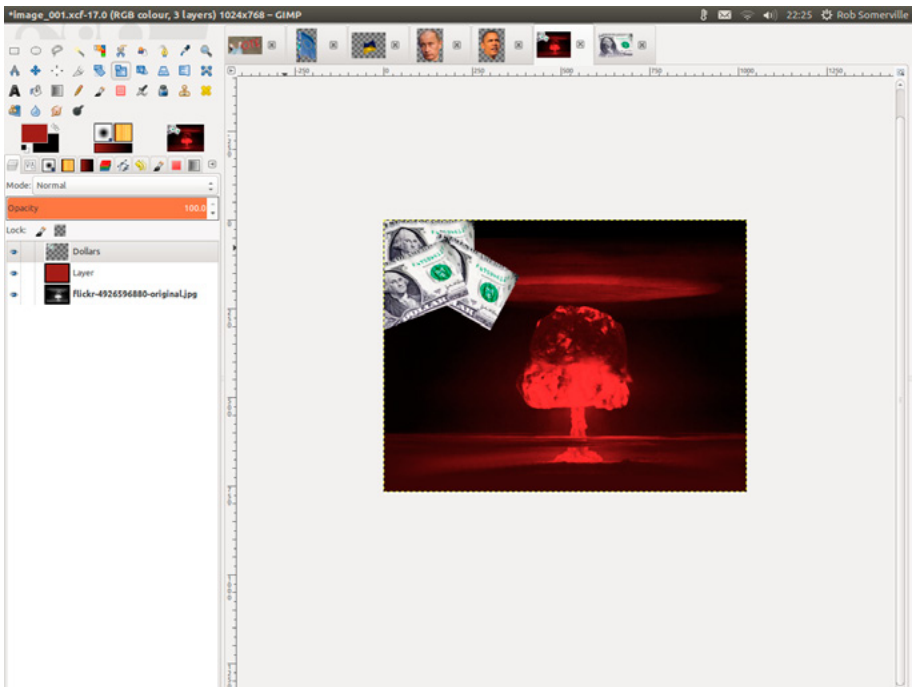
Step 9

Desaturate the luminosity of the image and add a new transparent layer. Fill this layer with colour 8e221d and alter the layer mode to saturation [Figure 9 – 10].



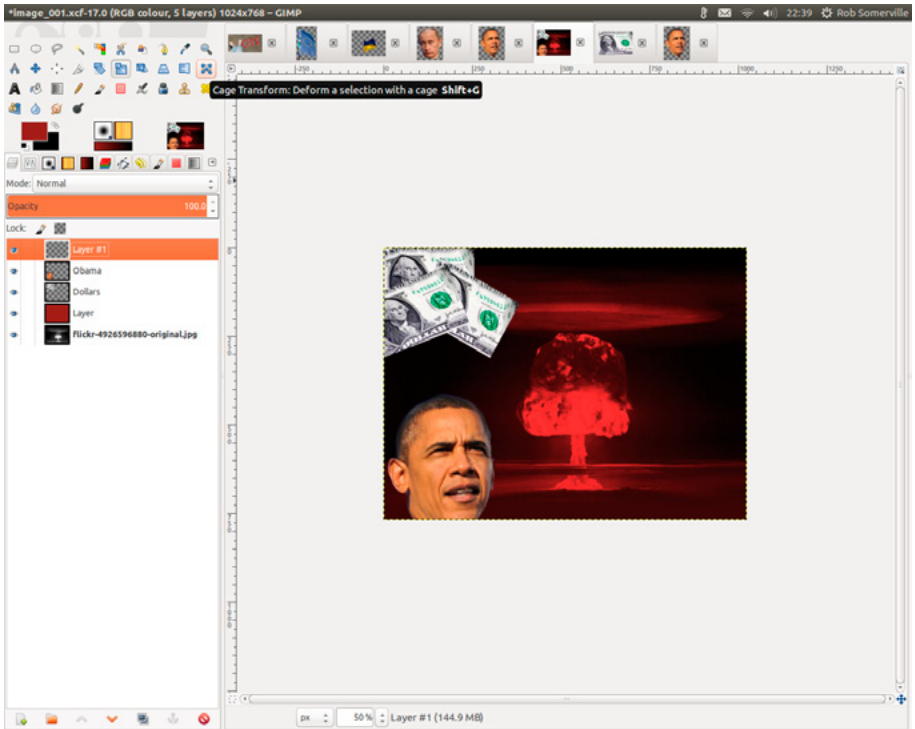
Step 10

Create a new transparent layer. Open the image of the US dollar, and scale to 150px. Select all, copy, and click back onto the nuclear background tab. Ensure you are on the new layer you created and paste the resized image of the dollar near the top left hand side of the image. When you are happy with the position of the layer, anchor it. Duplicate the layer, and using the rotate and move tool, reposition another copy of the dollar. Repeat until you have 3 dollars. When you are happy with the positioning, right click each dollar layer and merge down. Rename the single layer “Dollars”, and scale and reposition until the layer dominates the top left hand corner of the image [Figure 11].



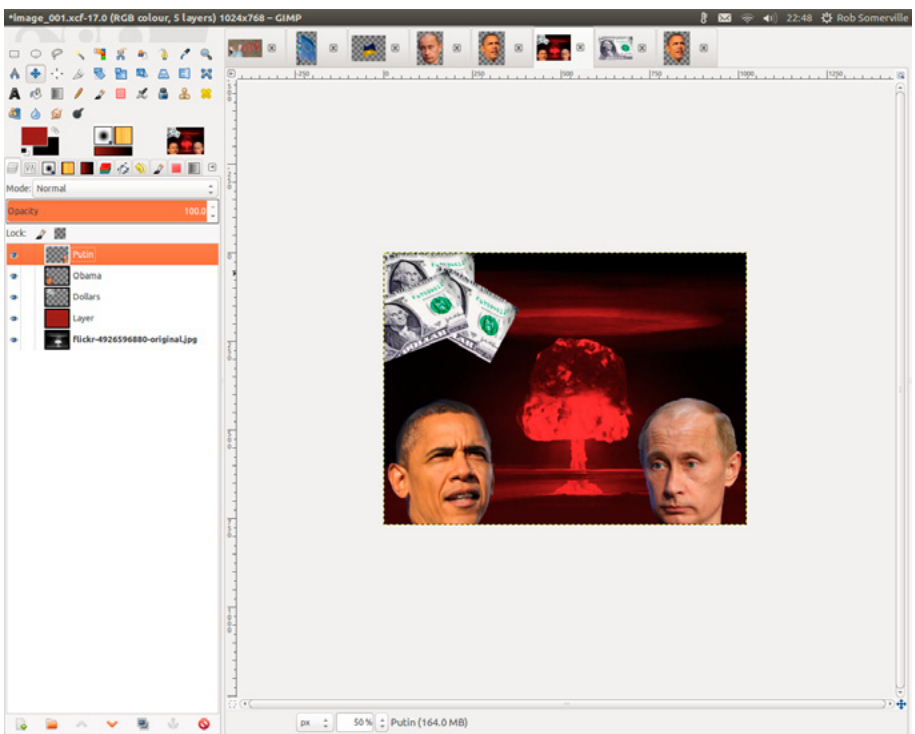
Step 11

Open obama.xcf and select all, copy. Create a new layer and paste the picture of the US president into the middle. Using the scale tool and pressing the Ctrl key, constrain the scale until you are happy with the dimensions. Locate the president at the bottom right hand side on the image. Use the smudge tool to remove any ragged blue edges. Rename the layer Obama [Figure 12].



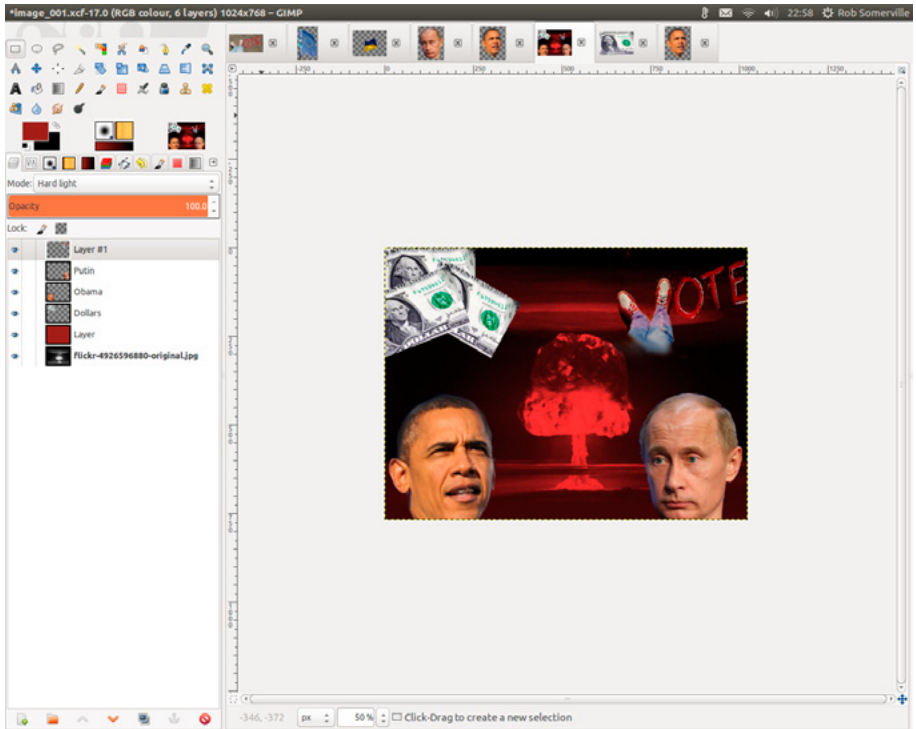
Step 12

Repeat step 11 with the picture of the Russian leader and place at the bottom right hand side of the image. Rotate the layer so that the eyes are horizontal [Figure 13].



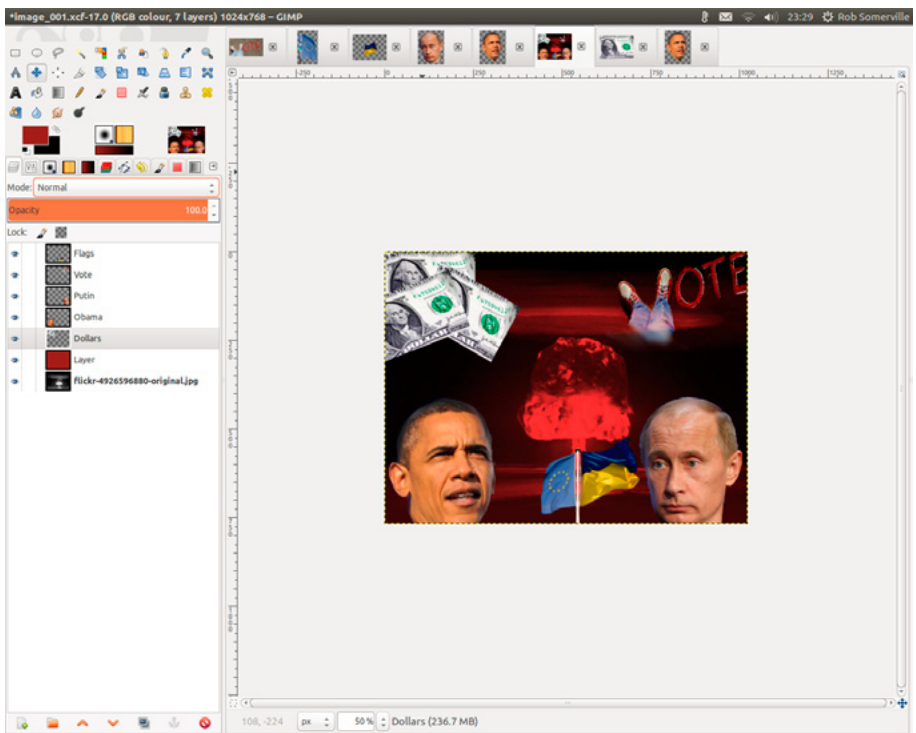
Step 13

Repeat with shoes.xcf but instead of constraining the scale tool, increase the height. Smudge and erase the legs to get a fade effect. Change the layer mode to hard light and delete any speckles that show through [Figure 14].



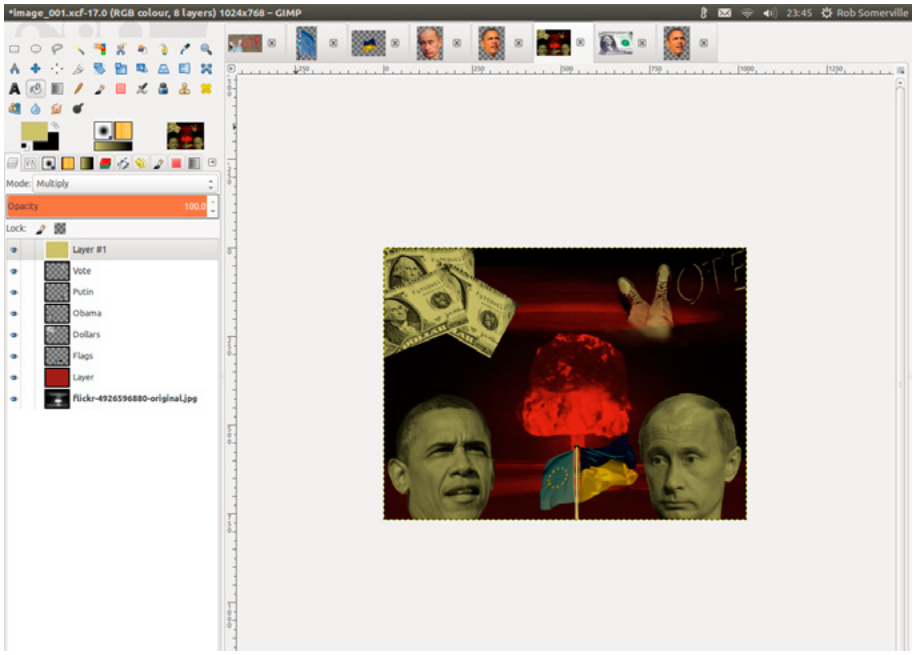
Step 14

Open flag.xcf, and copy and paste into a new layer on our pastiche. Duplicate the layer, flip it vertically, and line up the flagpole so it lines up perfectly over the other layer. Add a new transparent layer, open the Ukrainian flag and paste and scale over the right hand side of the flagpole. Use the smudge tool to align the edge of the flag against the curved part of the flagpole. Merge down the three layers, move the bottom of the pastiche, and layer to image size [Figure 15].



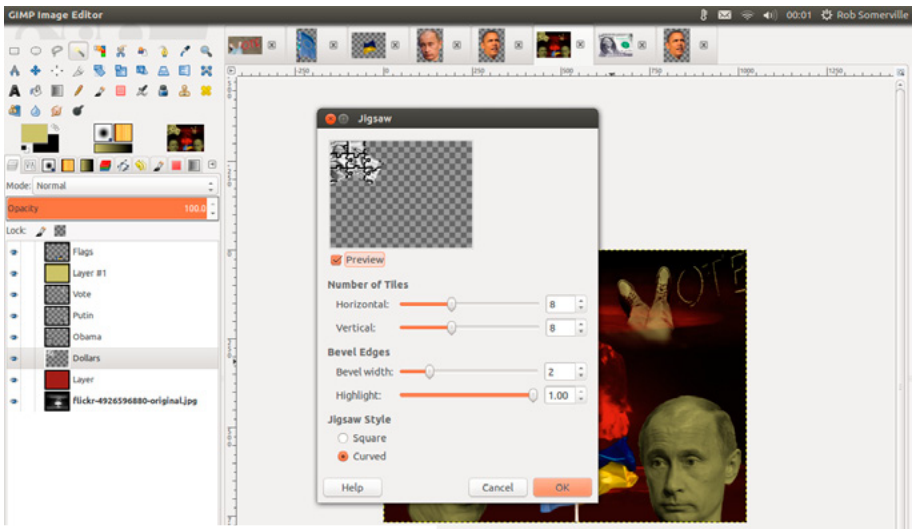
Step 15

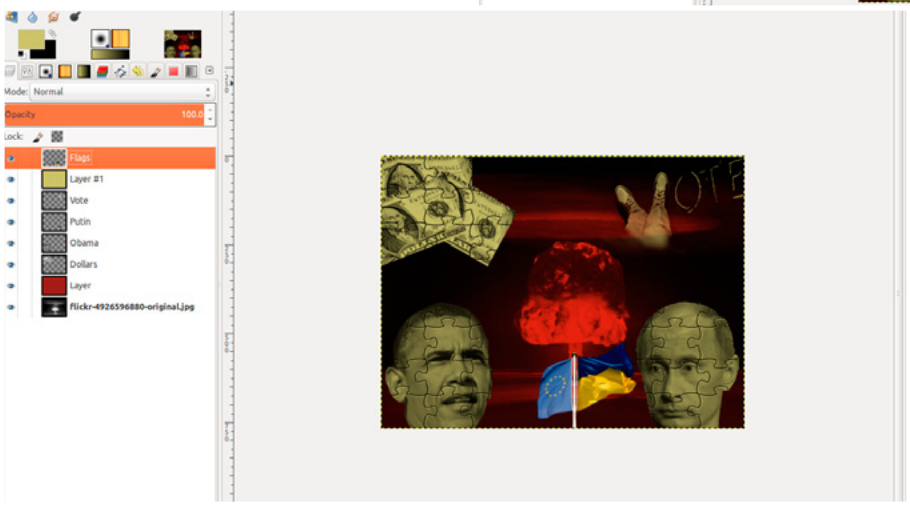
Move the flag layer just above the red layer. Desaturate the Obama, Putin, Vote and Dollar layers in turn. Create a new transparent layer at the top of the layers stack, and fill with c9c26e. Change the layer mode to multiply [Figure 16].



Step 16

With the exception of the vote layer, apply filter → render → pattern → jigsaw to Putin, Obama, and Dollars [Figure 17 – 18].



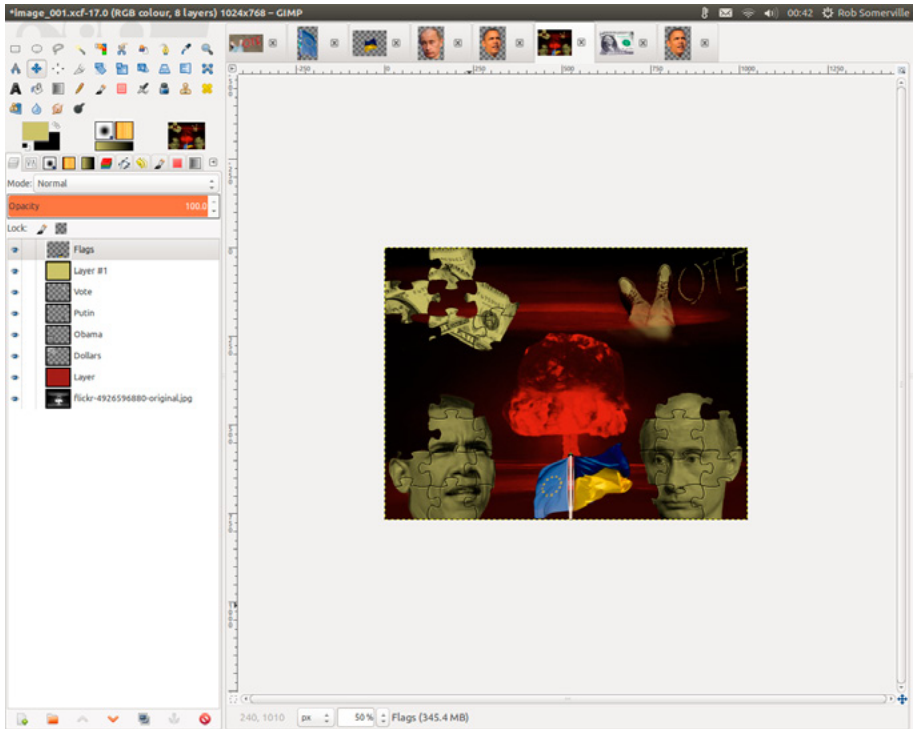


Step 17

Using the select tool or erase tool on the layers in step 11, delete parts of the jigsaw pieces. Tidy up the rough edges of the jigsaw with the blur tool.

Step 18

Select the last layer and increase the scale width and position so that the mushroom cloud is in the centre. Realign the flag layer as required [Figure 19].



ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

Getting to Grips with the Gimp – Part 4

In the fourth part in our series on the Gimp we will learn about guides and paths.

What you will learn…
- How to manipulate images like a design pro

What you should know…
- General PC administration skills

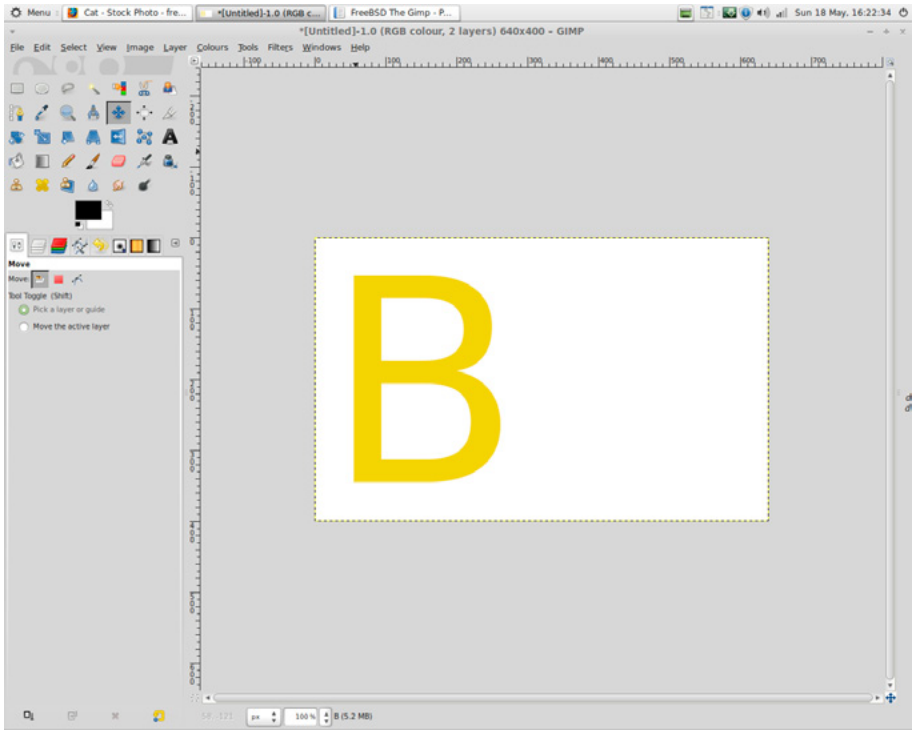
One of the most powerful tools supplied by the Gimp is the paths tool. Using Bezier curves, selections can be made accurately around curved objects, and minor adjustments and transformations performed on the selection. This selection can be saved as a path and applied across layers, making this function a great time-saver when working with complex images. While Bezier curves can be difficult to master, with practice they will become an essential part of your toolkit. Depending on the image you want to manipulate, Beziers can be a hindrance though. Sometimes it is quicker just to select the outline manually. We will demonstrate both in this tutorial, and end up with a controversial image with a text flowing to a path.

Lets get started!

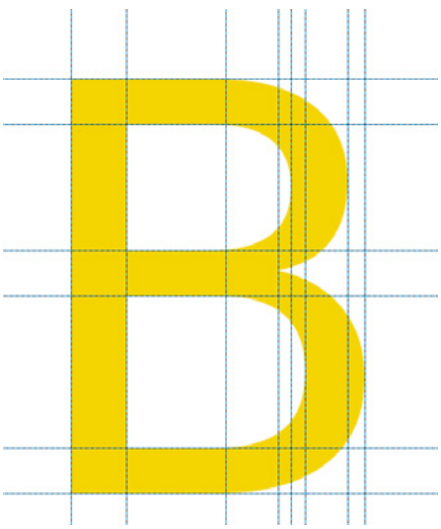
Part 1 – Learning Bezier curves and paths

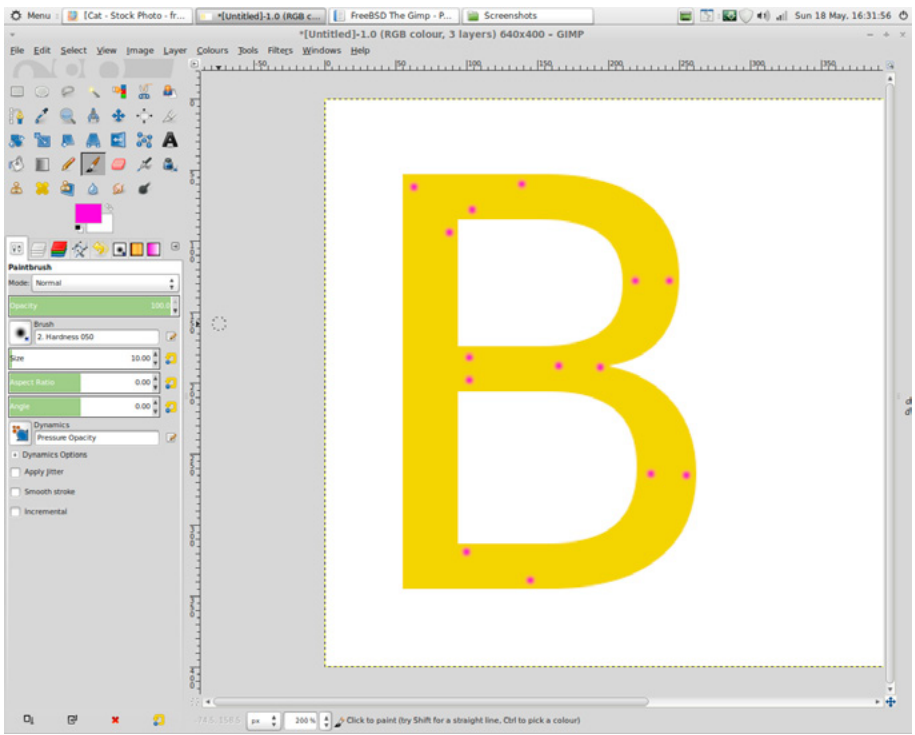
Step 1
Create a new image 640 x 480 px.

Step 2
Using the text tool, create the letter “B” in pale yellow 400px high. Layer to image size [Figure 1].

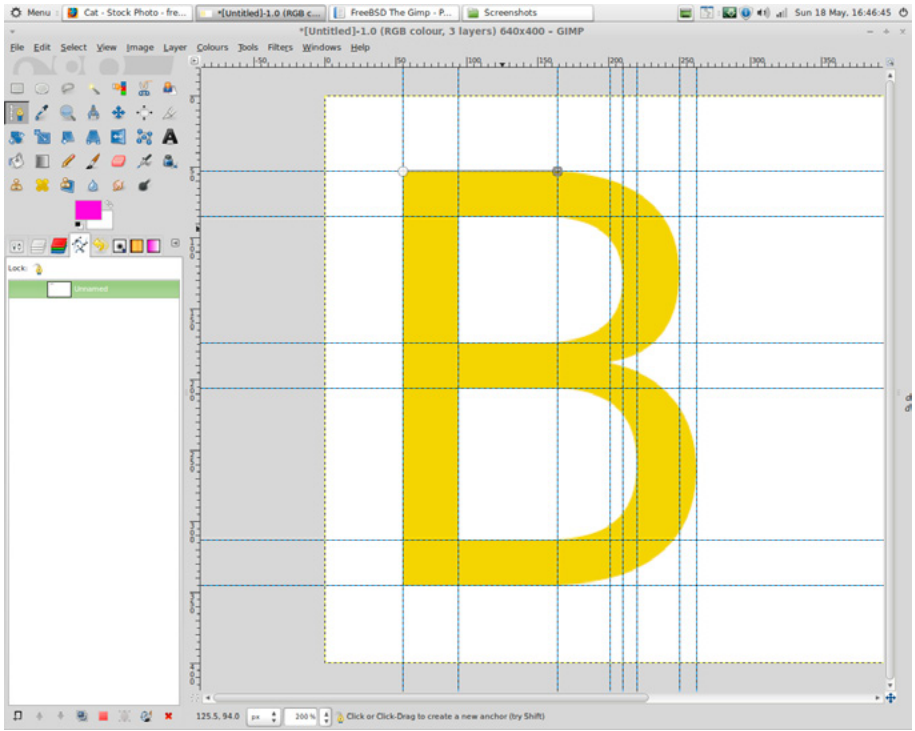


Step 3
Click and drag guides from the horizontal and vertical measuring ruler to the intersection points marked in magenta [Figure 2]. Zoom in if required to get accurate placement, resulting in the screenshot shown in Figure 3.



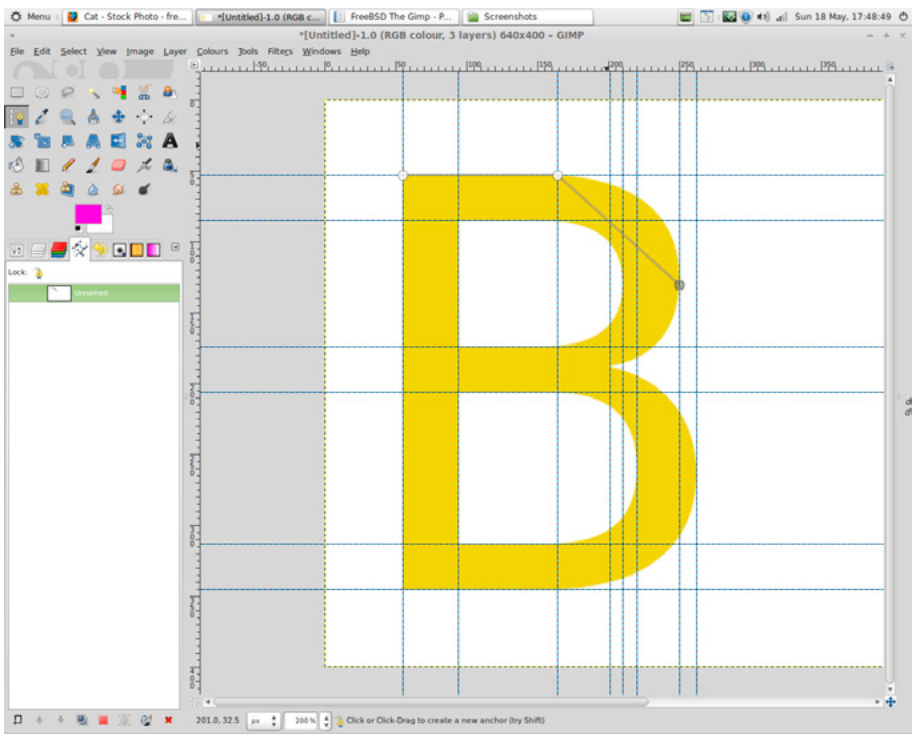


Step 4
Click on the paths tool and, starting at the top left hand side of the “B”, click once and a small square and circle will appear. If you click and drag on the middle of the icon, you can easily re-position the center point. Note how the center of the selection will snap to the guides. Move the selection point back to the top left hand side of the “B”.

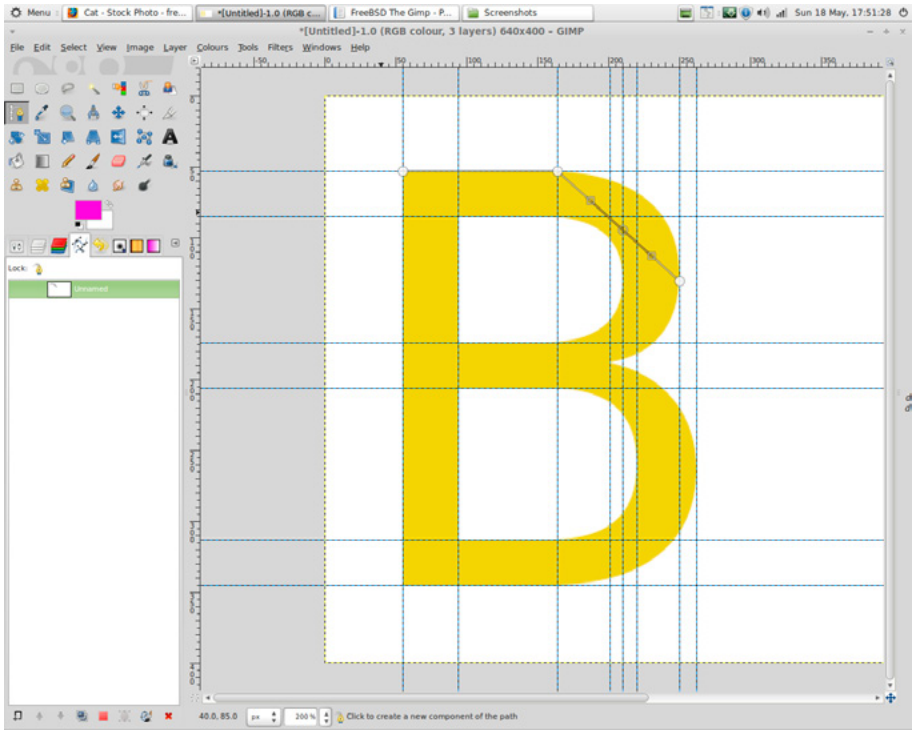


Step 5
Click once on the 3rd vertical guide on the letter B which will result in a straight path [Figure 4].

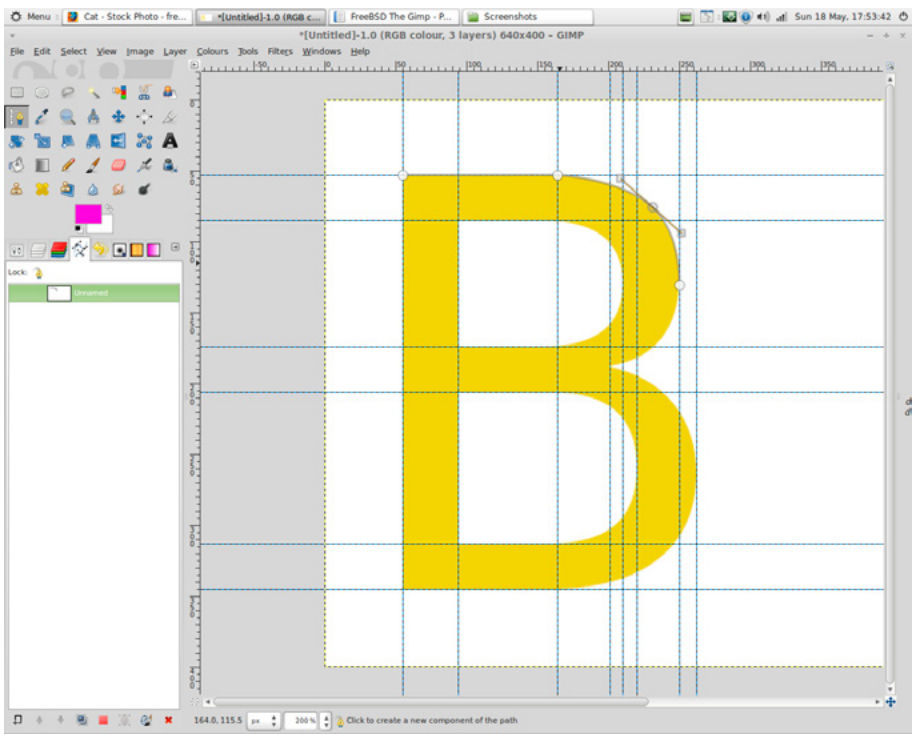
Step 6
Following the 7th vertical guide to the first upper curved bulge of the “B”, click once. This will result in a straight path bisecting the 4th vertical guide and the second horizontal guide [Figure 5].



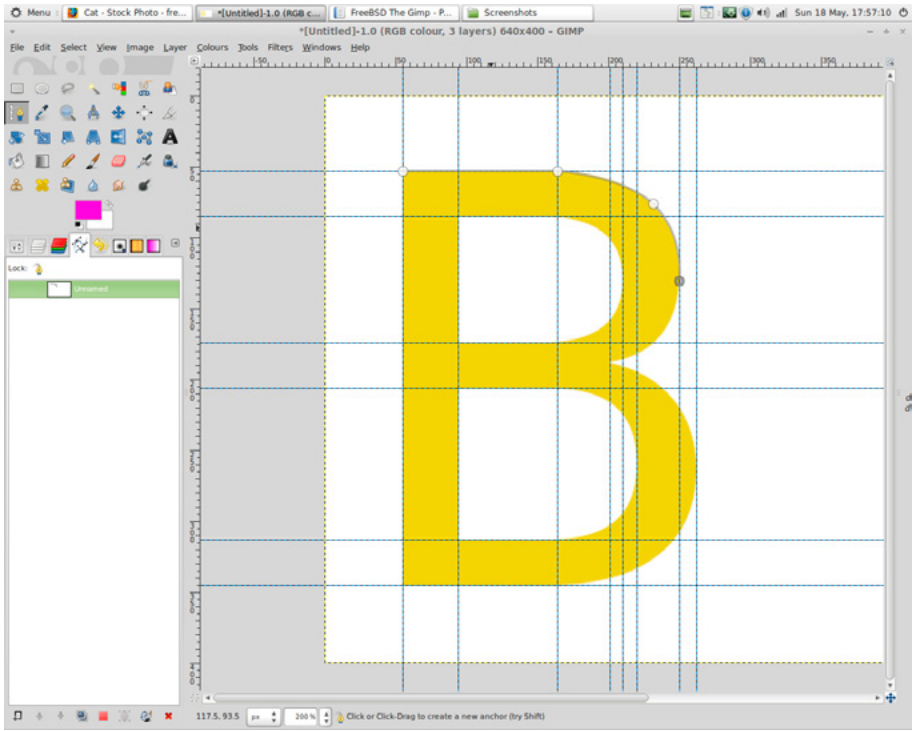
Step 7
Holding the Ctrl key, click on the path where it intersects with the 5th vertical guide [Figure 6].



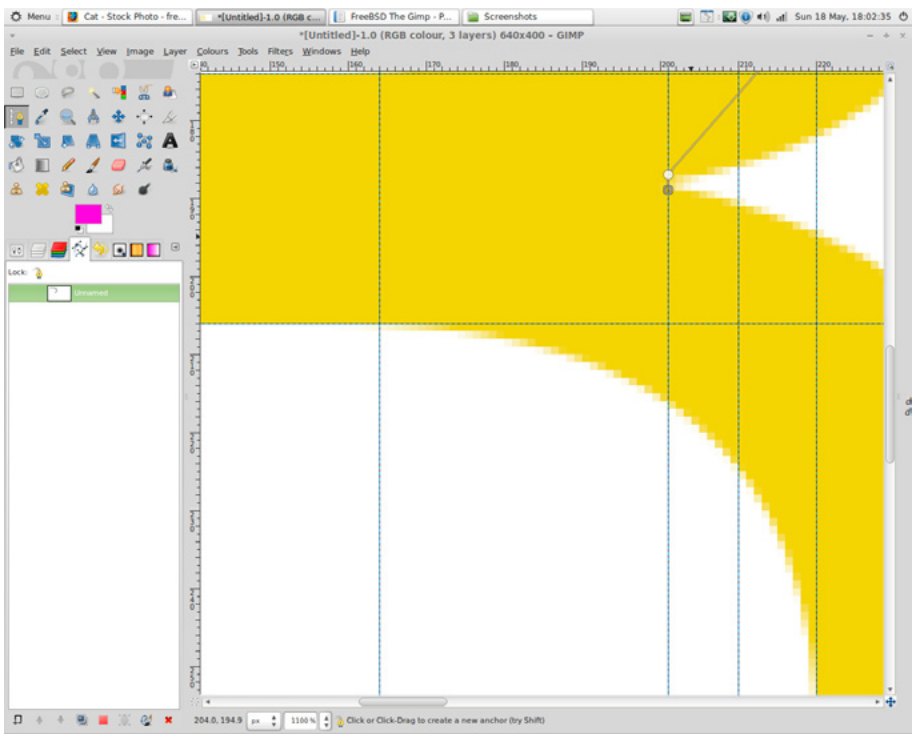
Step 8
Click and drag the center point of the node so it follows the curve of the “B” [Figure 7].



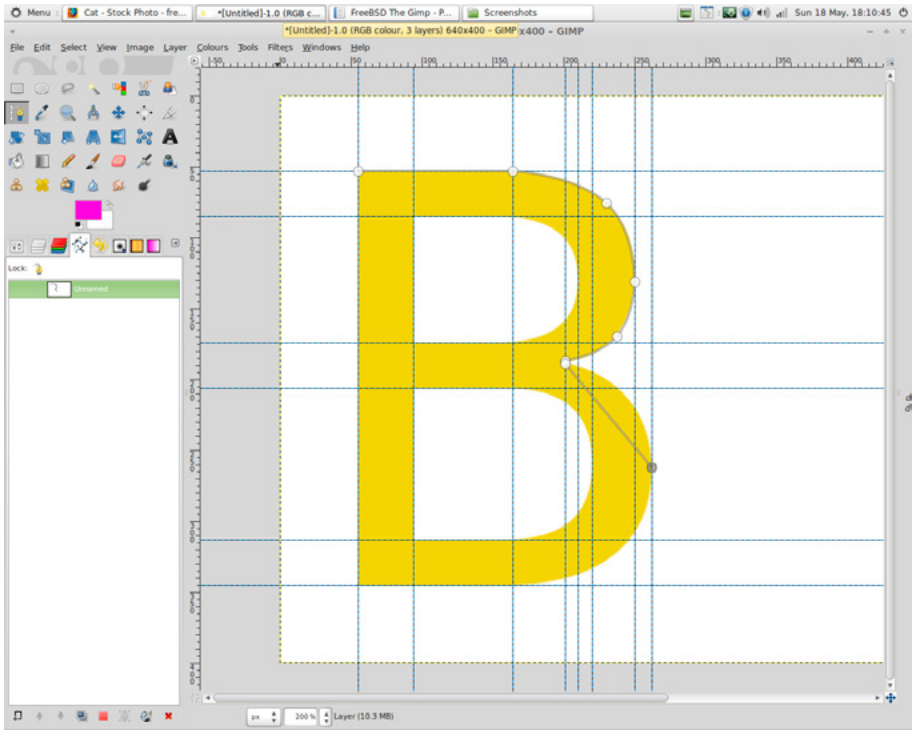
Step 9
Click on the end node so that a square appears [Figure 8].



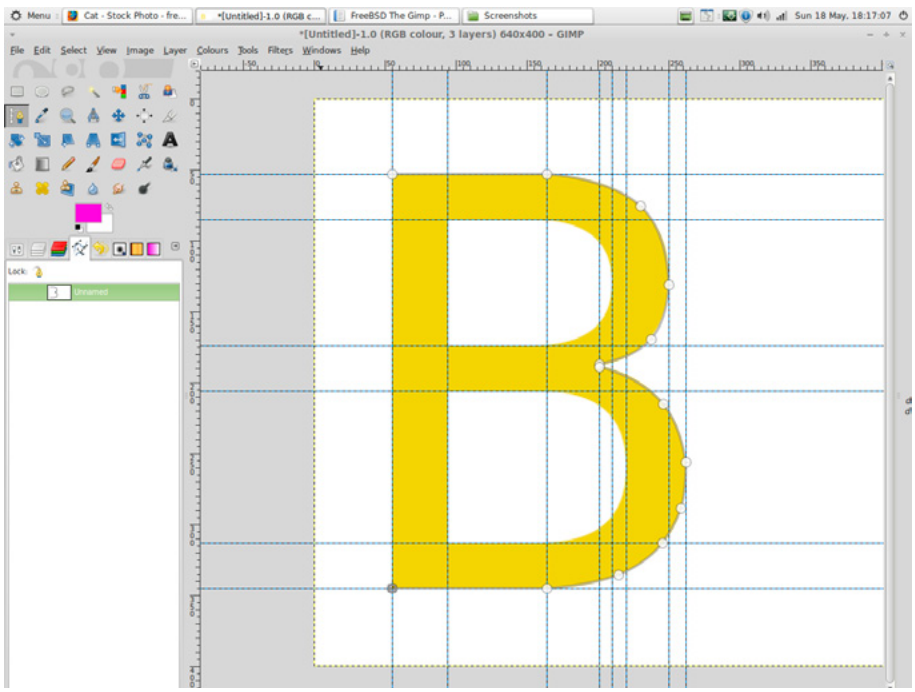
Step 10
Press the + key to zoom in (Do not use the Zoom tool as you will lose your path) and add 2 nodes where the two upper and lower curves of the letter merge [Figure 9].



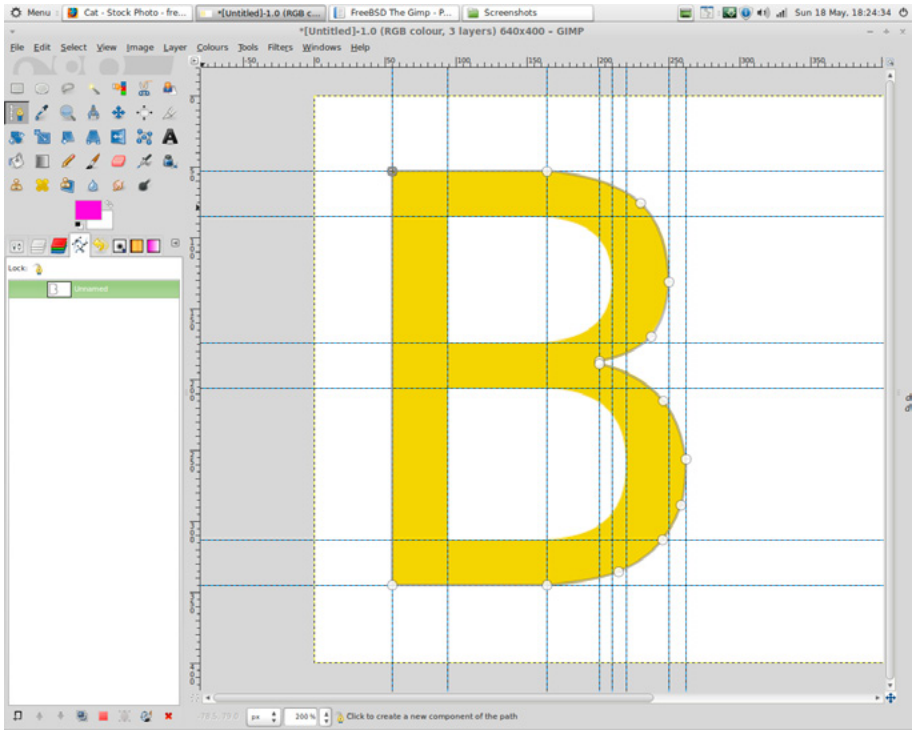
Step 11
Zoom out using the – key on the key-pad. Repeat steps 7-9 with the lower part of the upper curve and the upper part of the lower curve [Figure 10].



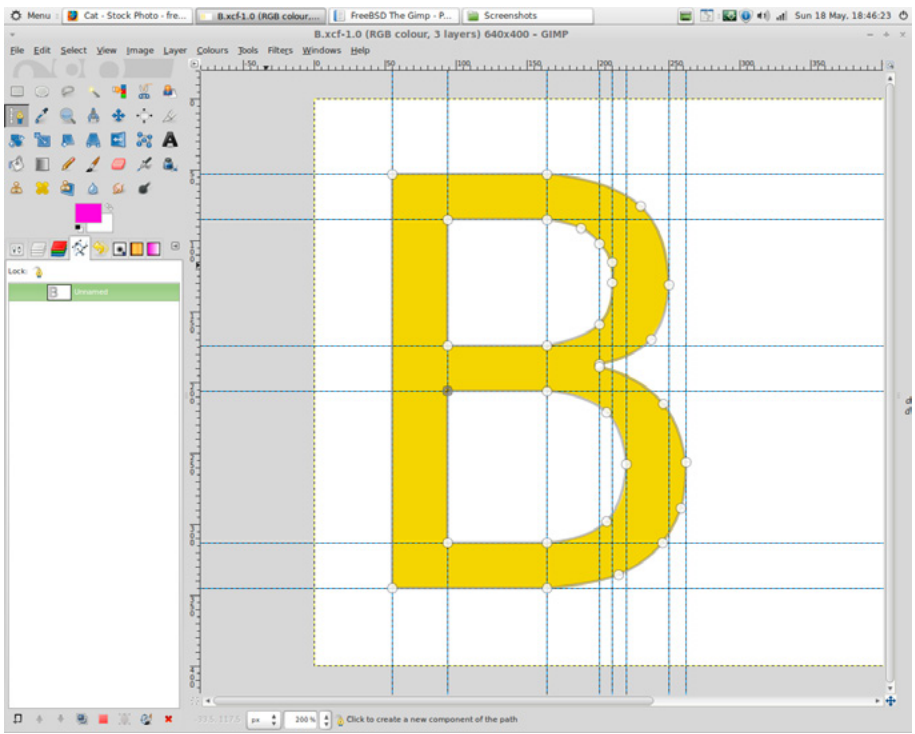
Step 12
Carry on adding nodes and adjusting the center point of the nodes until you reach the bottom left hand side of the “B” [Figure 11].



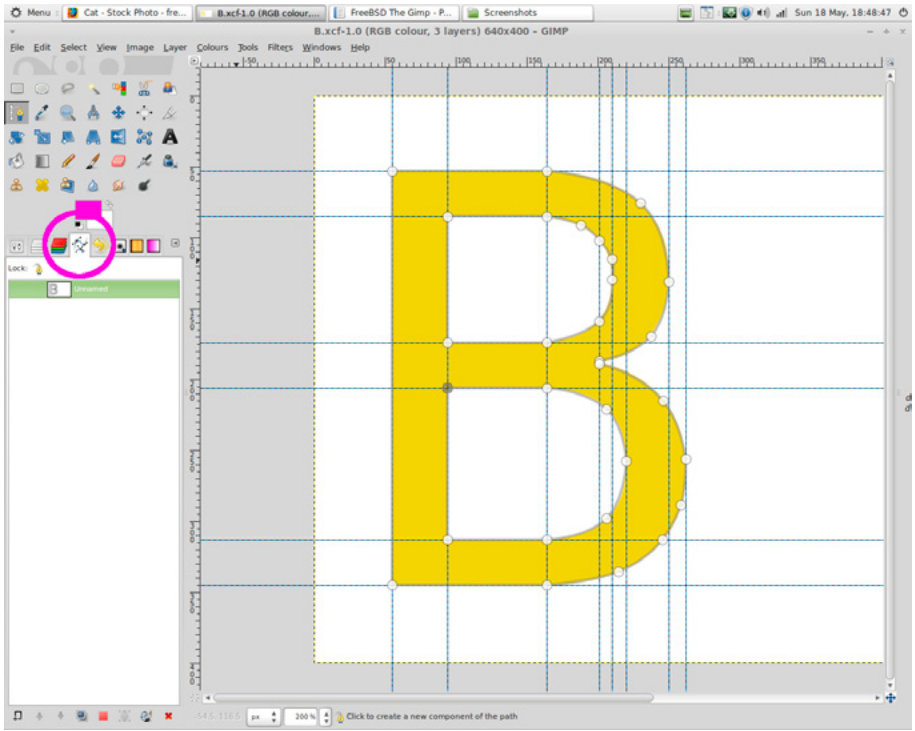
Step 13
Press and hold the Ctrl key and the cursor will change to a union symbol when you hover over the node created in Step 4. Click to join up the path [Figure 12].



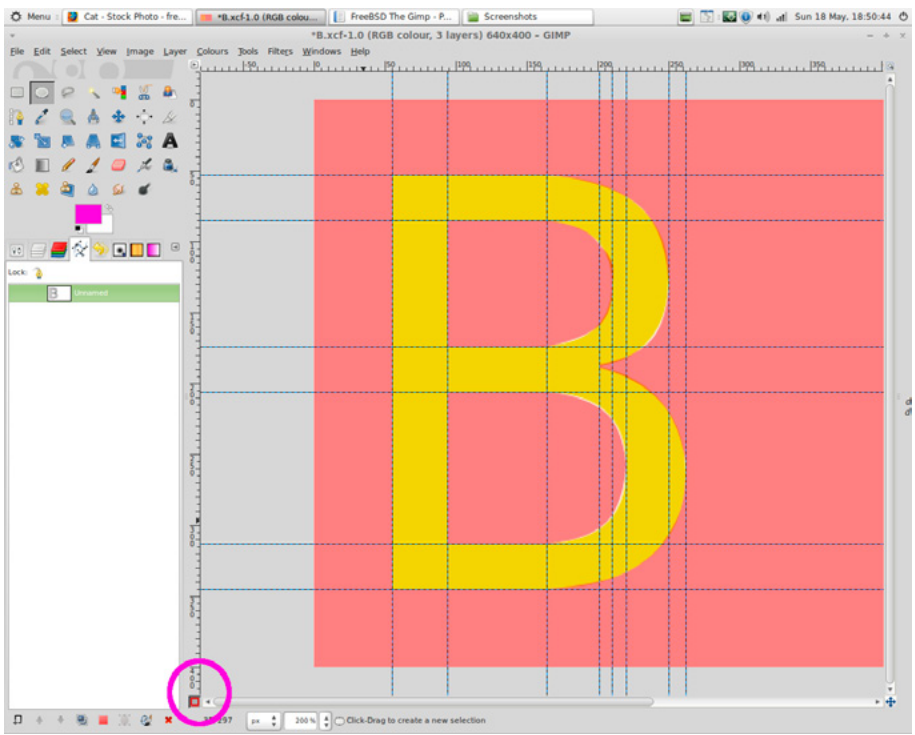
Step 14
Repeat steps 4-13 with both inner areas of the “B”. Don’t forget to click on the end node before attempting to create another, otherwise you will have an orphan node. If this happens, press Ctrl Z to recover. [Figure 13].



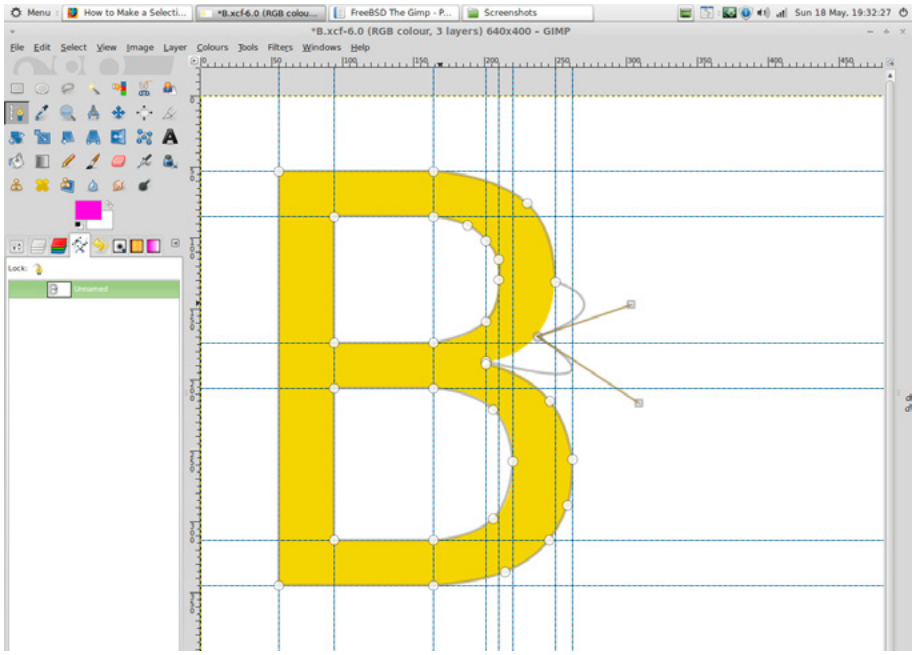
Step 15
Click on the paths tab to see an outline of the final path [Figure 14].



Step 16
Right click on the path and choose Path → Selection. Click on the quick mask button at the bottom left hand side of the canvas and you will see the masked off areas [Figure 15].



Step 17
Un-click the quick mask and right click on the path dialog and choose path tool. Note that when you click on a point on the curve, adjustment “arms” appear that will allow you to adjust the curve once it has been created, rather than just moving the center node [Figure 16].



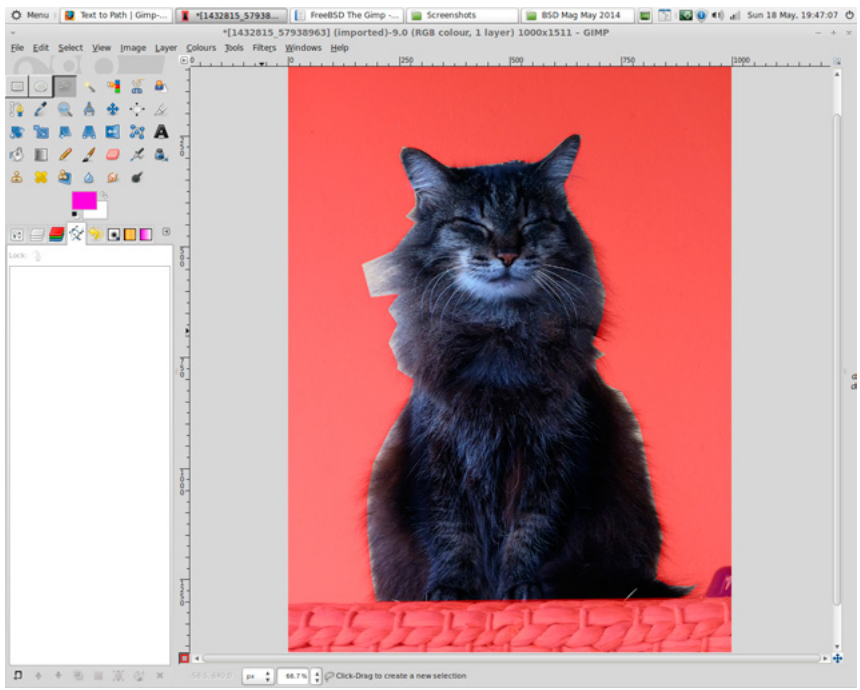
Part 2 – Fat cat logo

Step 1
Download the images from Table 1.

Table 1. *Details and credits*

Image	URL	Details and credits
Cat	*http://www.freeimages.com/photo/1432815*	Closed eyes cat. Uploaded by diogoakio
Bengal cat	*http://www.freeimages.com/photo/1435180*	Bengal Cat on Blanket Bengal Cat lying on white Blanket in the Garden, just woke up Uploaded by Krappweis

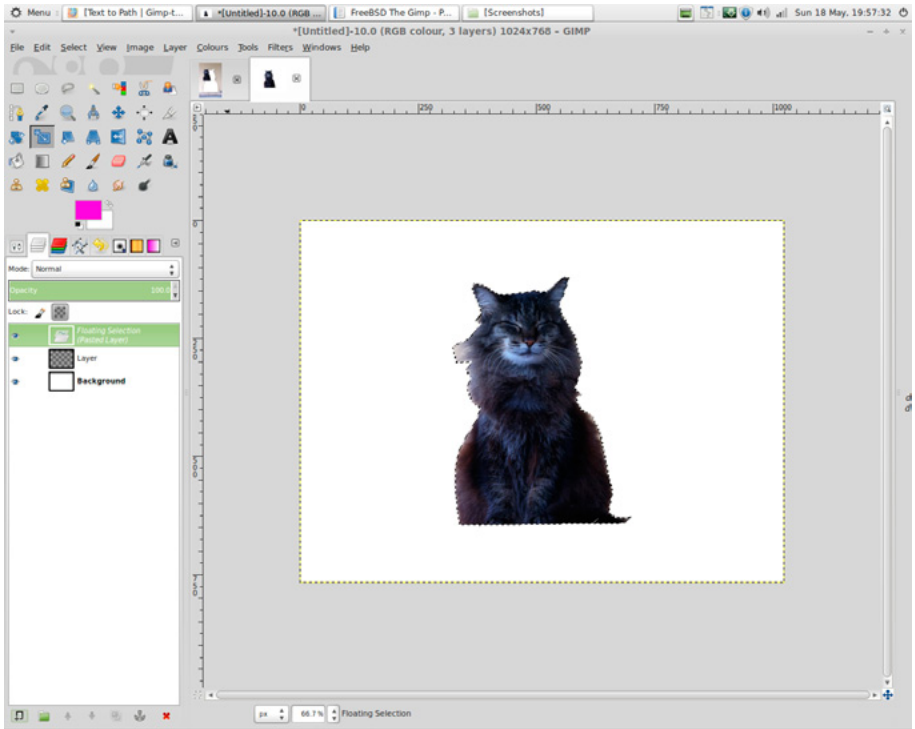
Step 2
Open the Cat image (Thanks, *diogoakio!*) and using the free select tool, select a rough outline of the cat. The fine hairs on the cat are not too important, so don’t spend too much time on that part on the detail [Figure 17 with mask enabled to show detail].



Step 3
Click on the scale tool and ensure both the X and Y axis is constrained. Scale to 50%, and click on Edit → Copy.

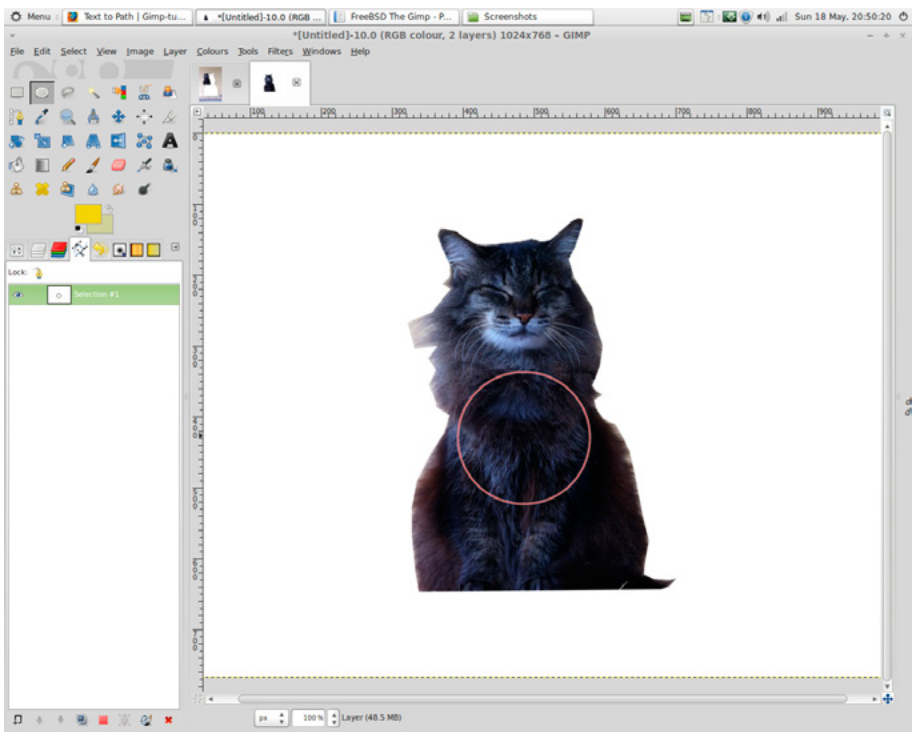
Step 4

Create a new image 1024 x 768 px from File → New, add a transparent layer and click on Edit → Paste [Figure 18].

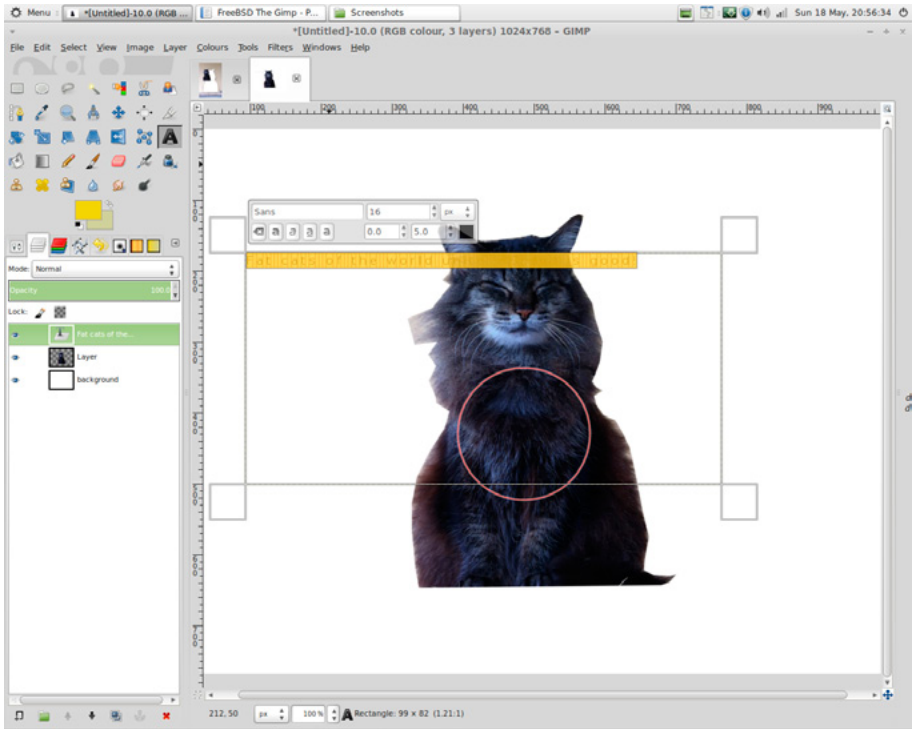


Step 5

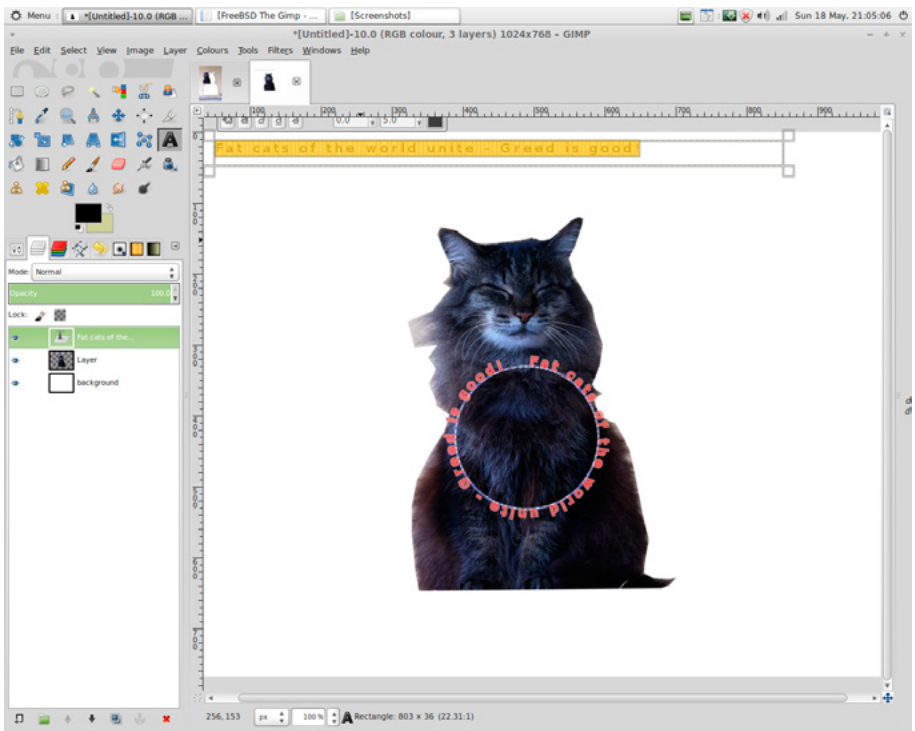
Anchor the layer, add another layer and using the ellipse select tool, create a circle around the middle of the cat using Shift to constrain. Right click and Select → to path. Click on the paths tag, click on the eye and you will see the circular path [Figure 19].



Step 6
Create the text “Fat cats of the world unite – Greed is good!” sized 16px Sans with a kern of 5px [Figure 20].

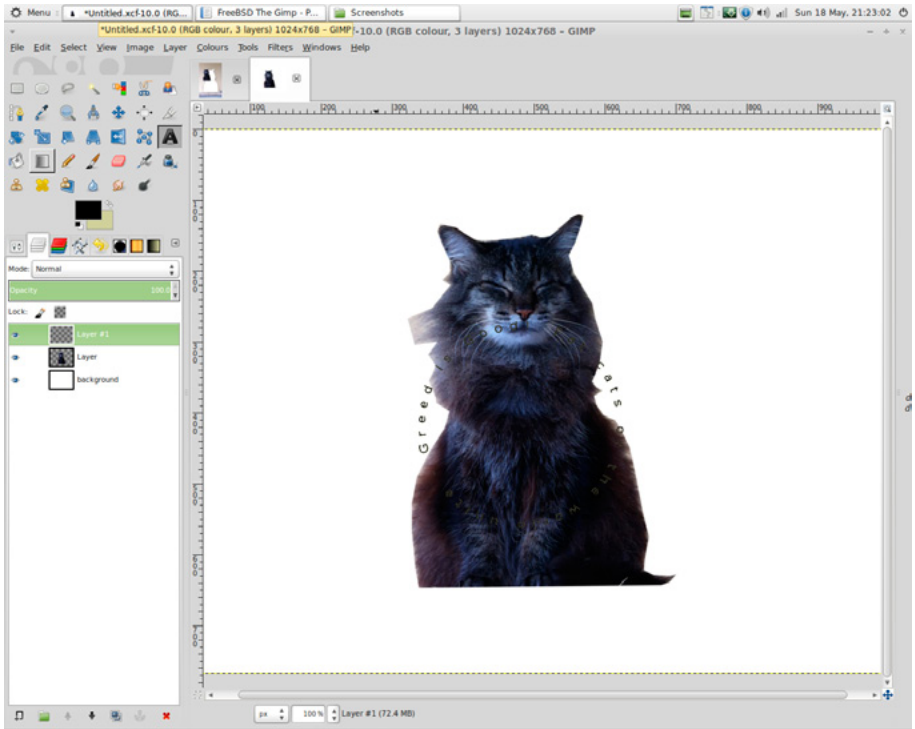


Step 7
Click on the layers tab and right click select → Text along path. Remove the text layer [Figure 21].



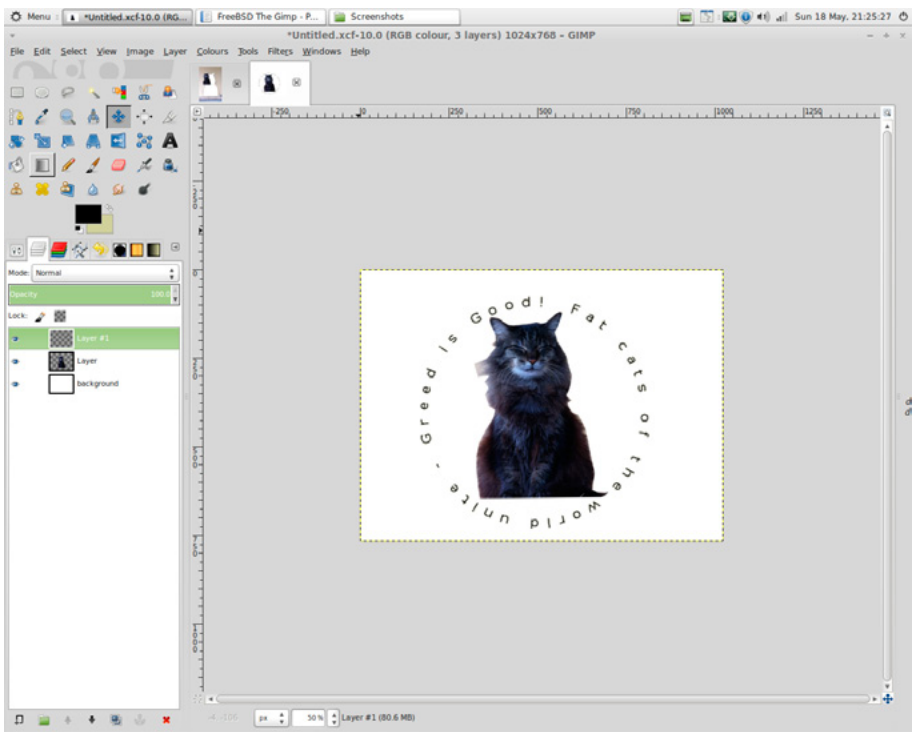
Step 8

Return to the paths tab, select Path → Selection and press Ctrl + . or Ctrl +, to fill with the background or foreground color as desired. From the menu, Select → None [Figure 22].



Step 9

Using the scale tool, stretch the contained layer to wrap around the cat [Figure 23].



Step 10
Copy and paste the eyes from the Bengal cat and add a red layer to colour. Remove any colour from the rest of the image by inverting the selection and deleting. Select an area of the body and scale to make a “fat cat”, using a combination of the blur, smudge and erase tool to make a realistic body [Figure 24].

While the resulting demo in this article isn’t perfect, time and perseverance will improve it!

ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

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T150	Up to 150Mbps	16 GB	3x 2 TB	1x 160 GB
T300	Up to 300 Mbps	16 GB	5x 2 TB	1x 240 GB
T500	Up to 500 Mbps	32 GB	7x 2 TB	1x 480 GB
T1000	Up to 1 Gbps	64 GB	10x 1 TB	1x 480 GB
T2000	Up to 2 Gbps	96 GB	24x 1 TB	3x 480 GB
T3000	Up to 3 Gbps	128 GB	32x 1 TB	5x 480 GB

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Getting to Grips with the Gimp – Part 5

In the fifth part in our series on the Gimp we will learn about layer masks and how to modify faces and hair colour.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

Professional graphic designers are often called to retouch images. In this tutorial, we will take this one step further and transplant the face of one model onto another. The trickiest part of this exercise is matching the skin tone and making the appearance realistic. While no humans were harmed in the creation of this tutorial, my apologies to the models concerned – you look far better in your original images!

Part 1 – Perform a face transplant

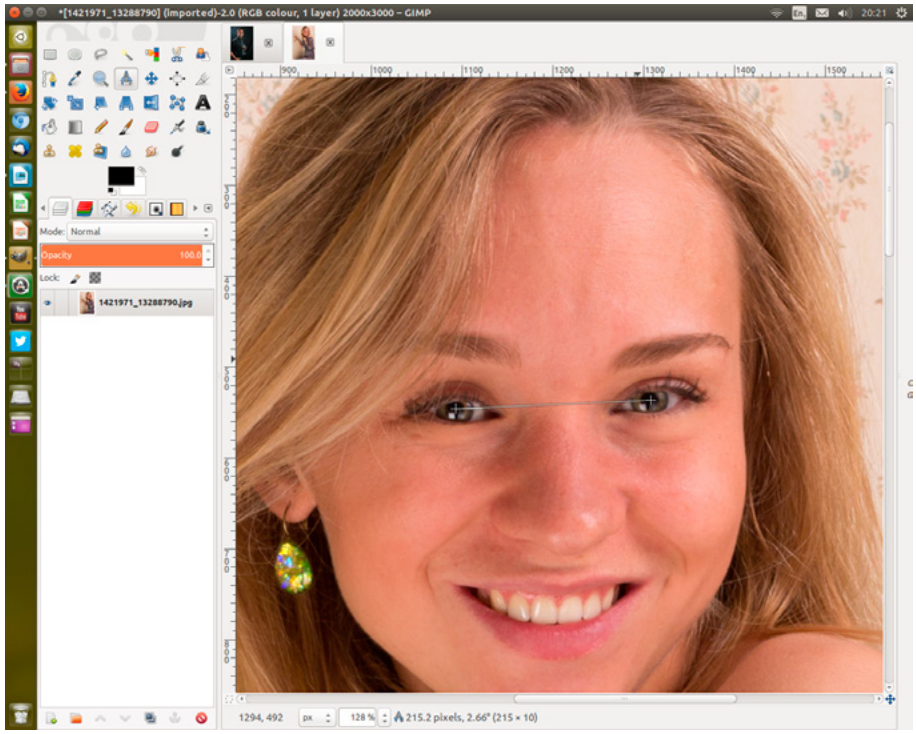
Step 1
Download the images from Table 1.

Table 1. *Details and credits*

Image	URL	Details and credits
Female model	http://www.freeimages.com/photo/1421971	Female model by african_fi
Male model	http://www.freeimages.com/photo/1348191	Self portrait by rubenshito

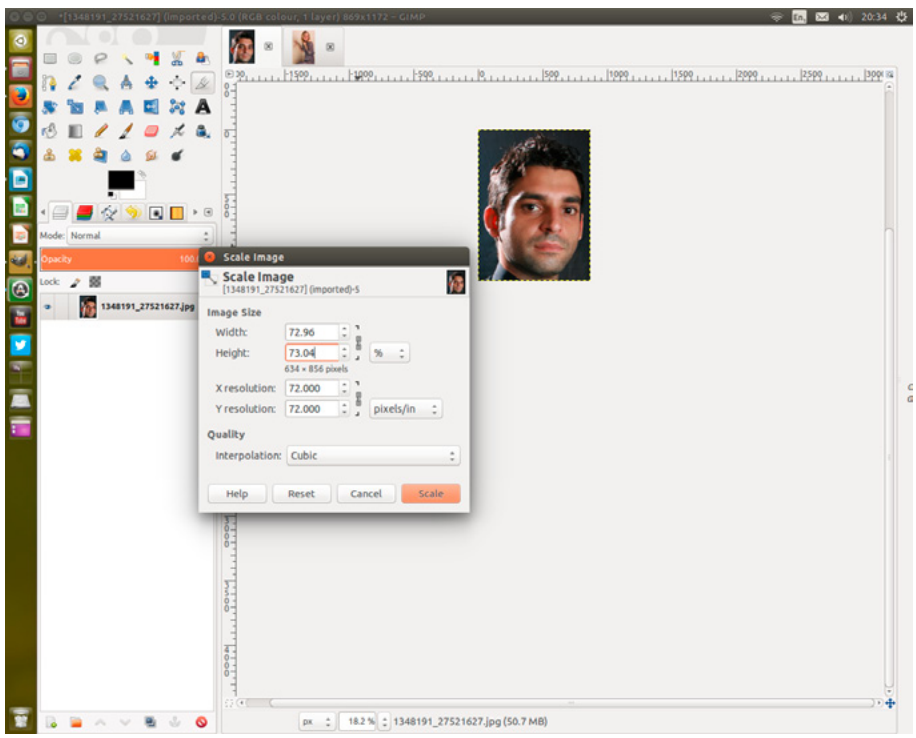
Step 2
Open the picture of the male model as a layer and zoom in around the eyes. Using the measuring tool, take a note of the distance in pixels between the pupils of the eyes. This should be approximately 294.7px [Screenshot 1].

Step 3
Open the picture of the female model. As the lady is looking to the left and the man to the right, flip the image by performing Image → Transform → Flip Horizontally. Repeat Step 1 with the lady's eyes; this measures approximately 215.2px [Screenshot 2].



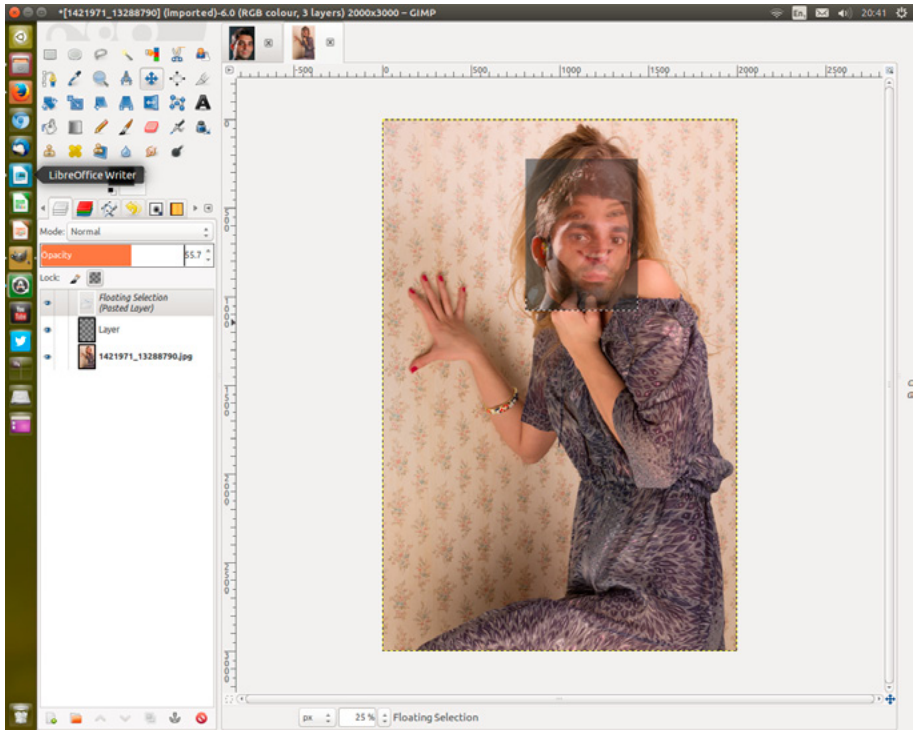
Step 4
As we will want to keep the face in proportion, we can calculate the percentage we want to shrink the male face as follows – 215.2/294.7*100 which works out at 73%.

Step 5
Go back to the male model and use the crop tool to select the head area. Scale the image using the scale tool or via Image → Scale image. Ensure both horizontal and vertical are locked. Scale the image by 73.00 percent. Press Ctrl A then Ctrl C to select all of the image and to copy it. [Screenshot 3].



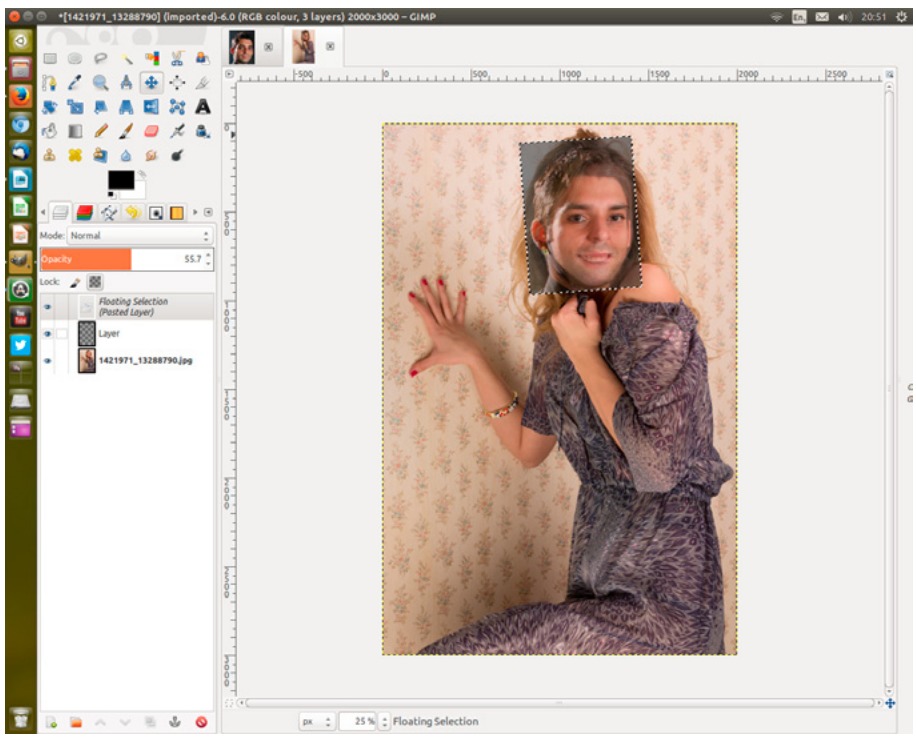
Step 6

Return to the female image and create a new transparent layer. Paste the male face into the image (Ctrl V) and reduce the opacity to 55%. Notice how both the male and female eyes are roughly the same distance apart [Screenshot 4].



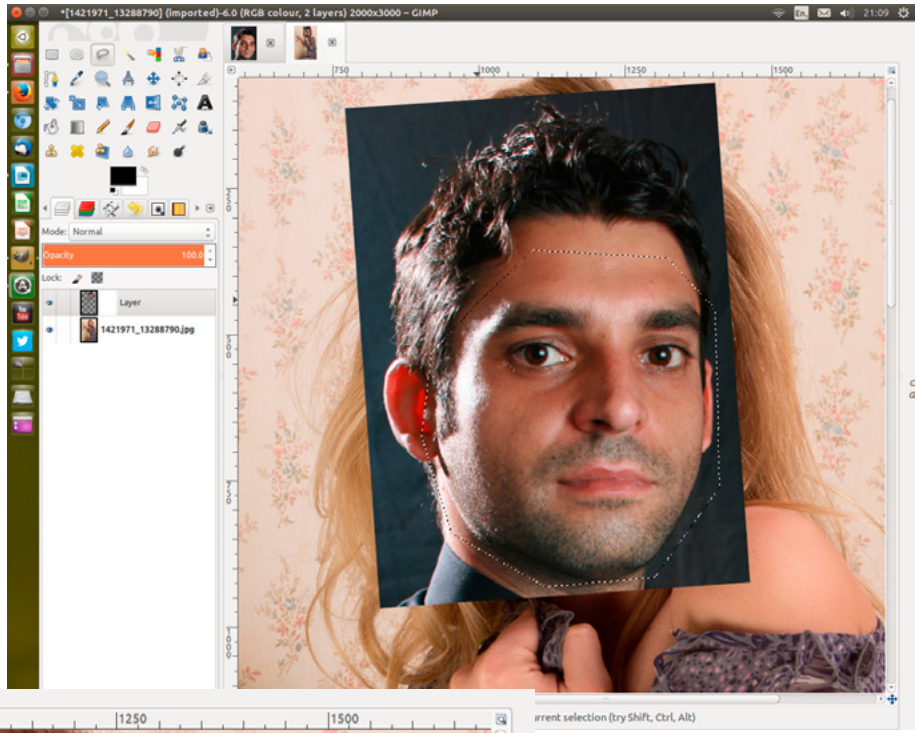
Step 7

As the lady's head is tilted slightly, we will need to rotate the male face slightly. Using the rotate tool, select the layer and move the centre point of the rotation tool to the bottom left hand corner of the image. Rotate the image by -4.0px (You may have to adjust this slightly) and, using the move tool, align the new features to match the eyes and mouth area of the lower layer [Screenshot 5].



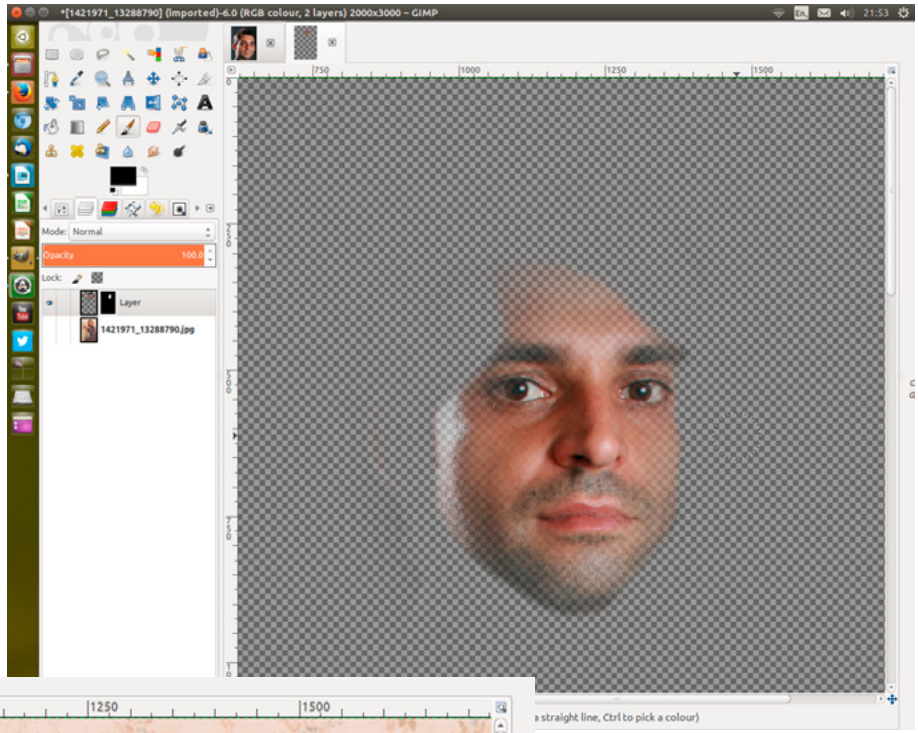
Step 8

When you are happy with the positioning, increase the opacity to 100% and anchor the layer. Right click on the top layer and add a white layer mask. Roughly select the flesh coloured area you want to transplant, Press Ctrl I to invert the selection, click on the white mask icon next to the layer preview and press Ctrl, to fill with the foreground colour [Screenshot 6 – 7].

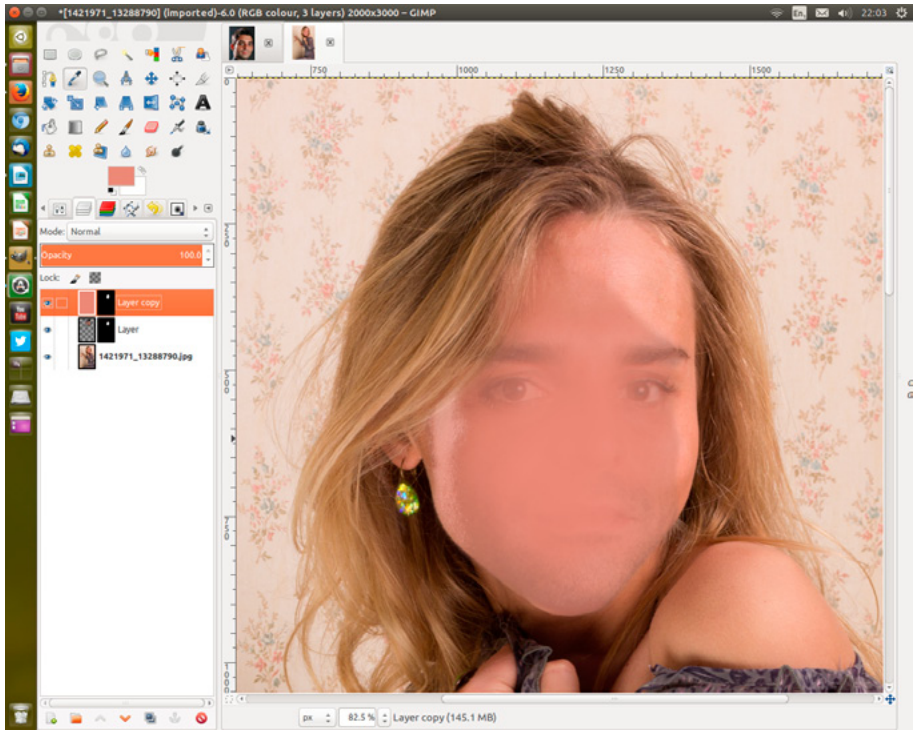


Step 9

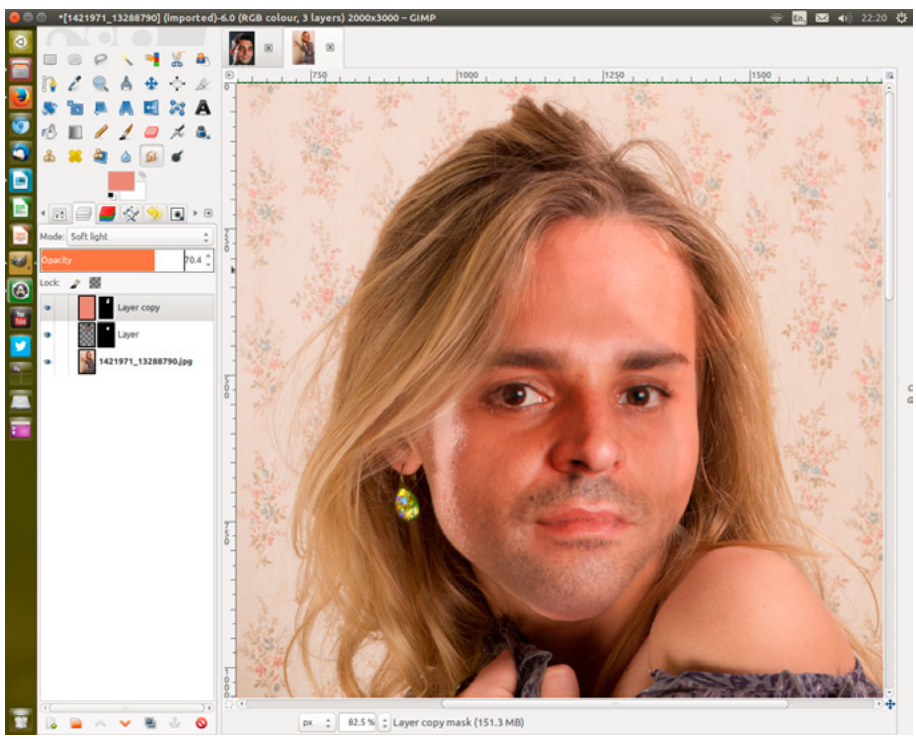
Press Ctrl Shift A to deselect the area and, using the paint tool, remove the area of the layer you do not want included. Adjust the shape and size of the brush as required and decrease the opacity of the top layer temporarily so you can see the background. Select Filters → Blur → Gaussian Blur and apply a blur of 250px. This will increase the size of the mask, so go over the areas again with the paintbrush until you are happy with the result and no orphan areas are visible [Screenshot 8 – 9].



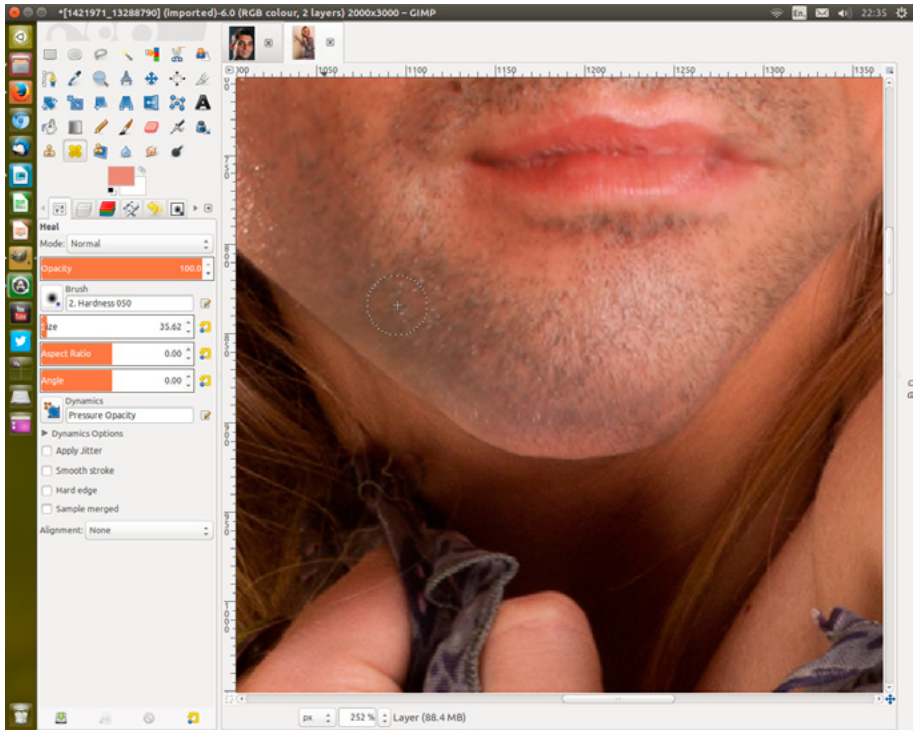
Step 10
Duplicate the top layer and make both upper layers invisible by clicking on the eye icon. Select the bottom layer and, using the colour picker tool, select a colour from just left of the lady's nose. Turn the other upper layers back on, and select the top layer icon (not the mask). Fill with the foreground colour by pressing Ctrl, [Screenshot 10].



Step 11
Change the mode of the top layer to Soft light and adjust the opacity until you are happy with the skin tone [Screenshot 11].

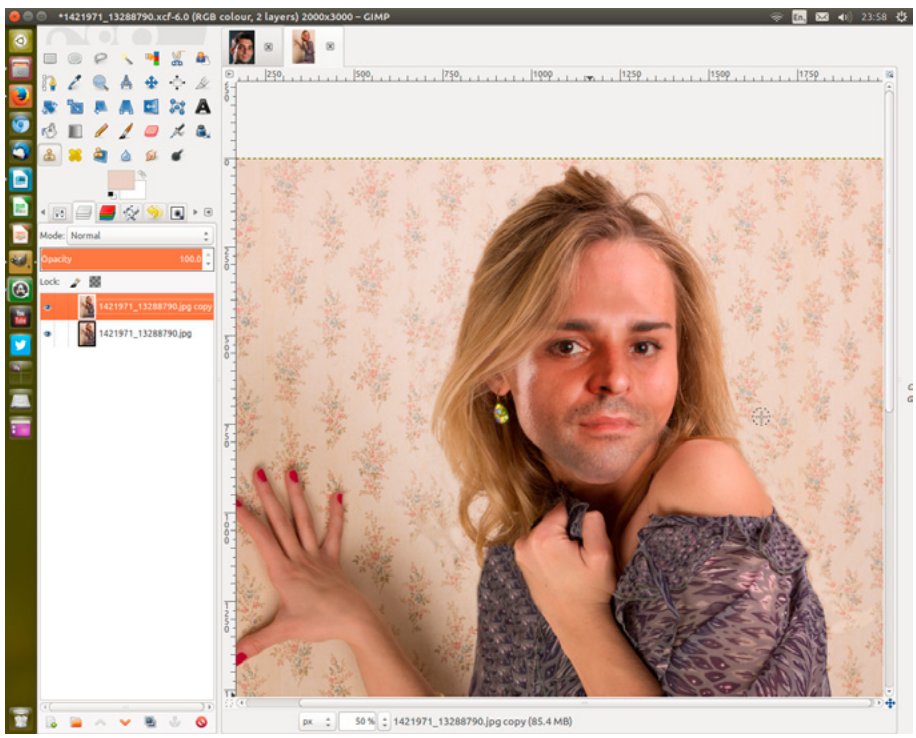


Step 12
Hide the bottom layer and right click to merge visible layers. Re-enable the bottom layer, select the top layer and, using the erase tool with 60% opacity, tidy up the area around the right eyebrow and right eye. Using the clone tool, click on an area of stubble on the chin and repair any areas around the chin that do not have stubble. If need be, move the upper layer or scale so that the face looks natural. [Screenshot 12].

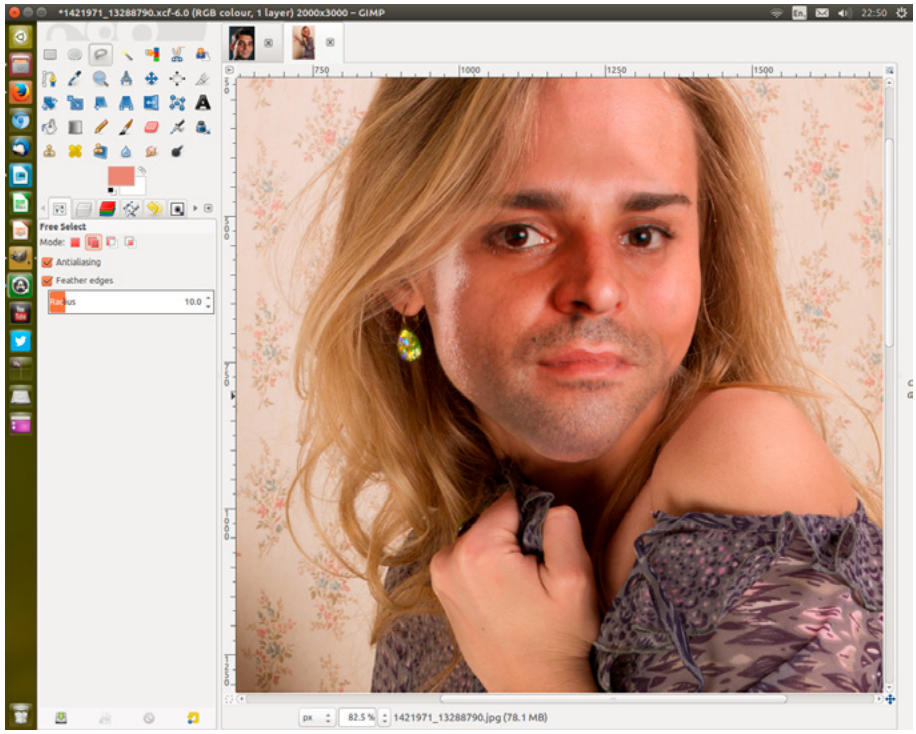


Part 2 – Change the hair colour

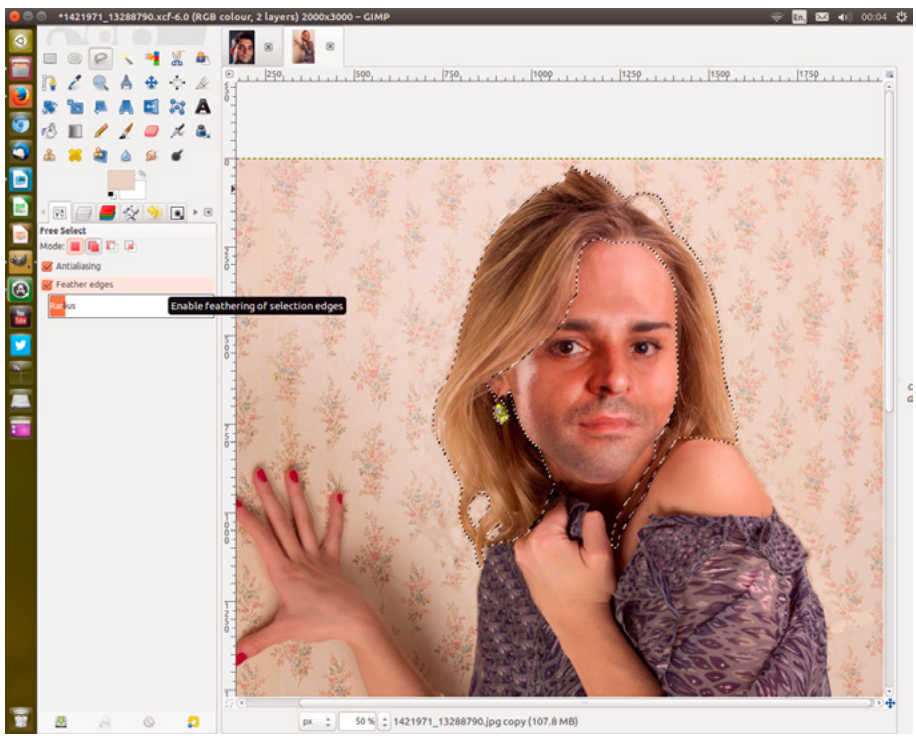
Step 13
Merge the two layers and duplicate the result. Select the top layer. Use the clone and repair tool to remove any fine hair that we will not be able to easily select as it is too fine (e.g. around the right shoulder) [Screenshot 13].



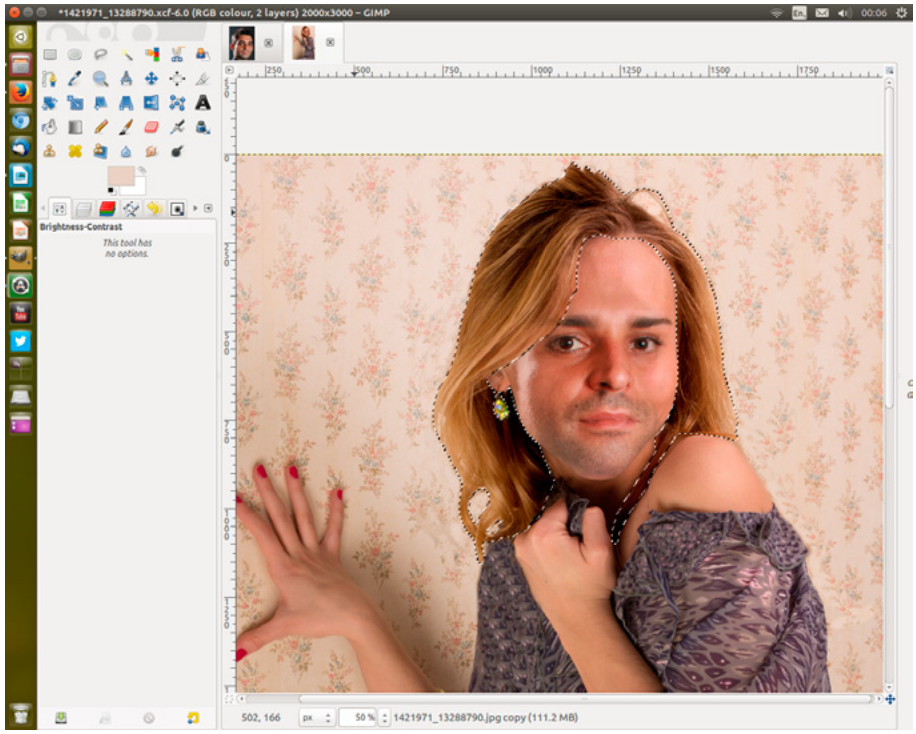
Step 14
Choose the free select tool with feathering and anti-aliasing enabled with add to current selection [Screenshot 14].



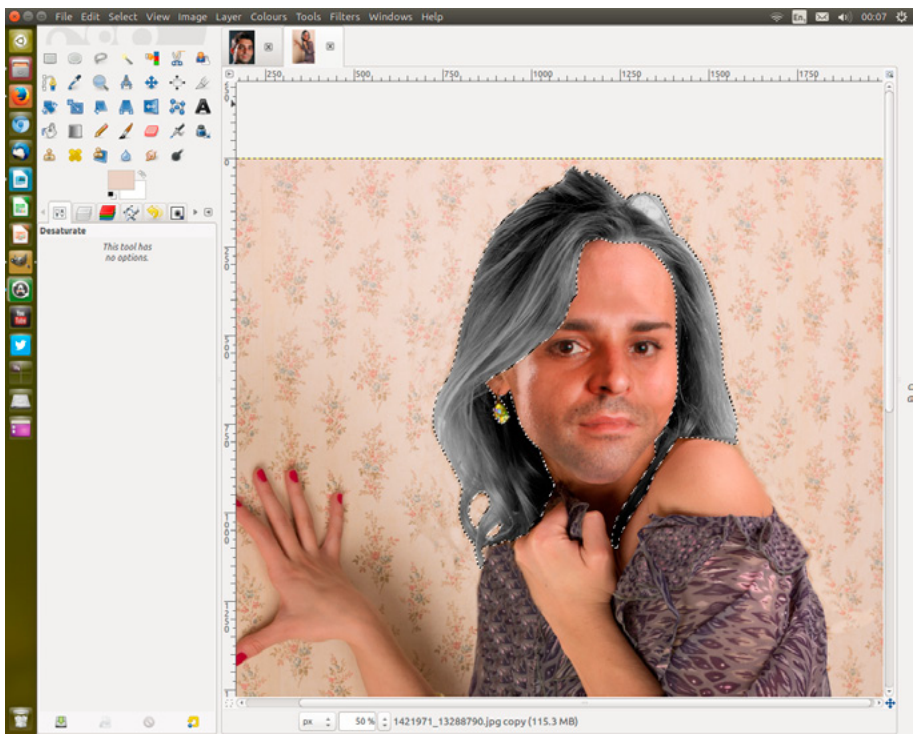
Step 15
Select the hair using the Ctrl and Shift keys to add separate areas or remove parts of the wallpaper. The more time you spend on this, the better the end result. [Screenshot 15].



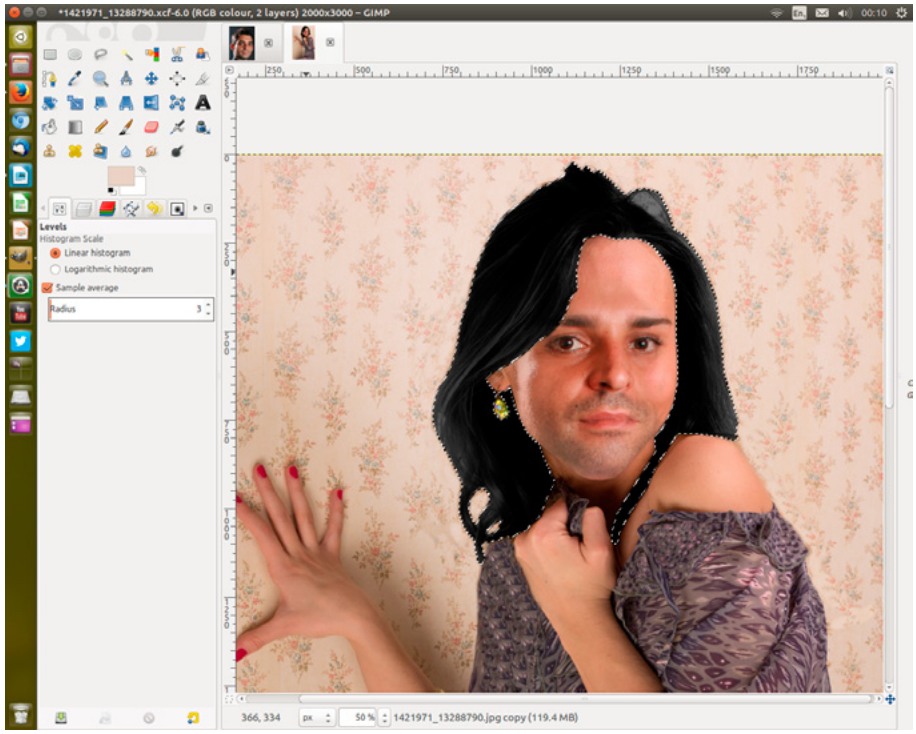
Step 16
Select Colours → Brightness – Contrast and decrease the brightness to -20 and increase the contrast to 20 [Screenshot 16].



Step 17
Select Colours → Desaturate Luminosity [Screenshot 17].



Step 18
Select Colours → Levels and adjust the input and output levels until you have the desired effect. Too much adjustment will lose contrast so we want to keep the highlights as much as possible. Adjust the brightness and contrast as required. [Screenshot 18].



Step 19
Finally, add a new layer and, using the paintbrush with the black colour, touch up the area around the right hand side of the neck with 50% transparency. Adjust the opacity of the middle layer to get a realistic effect [Screenshot 19].

While the resulting demo in this article isn't perfect, time and perseverance will improve it!

ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

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Getting to Grips With the Gimp – Part 6

A Text Filled Vignette

In the sixth part in our series on the Gimp, we will learn about creating a Text Filled Vignette.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

The book, "Tinker Tailor Soldier Spy" by *John Le Carre* has a vignette of George Smiley on the front cover. Hence, we will create a similar edgy picture with text rather than numbers.

The recipe

We will follow the following steps as indicated:

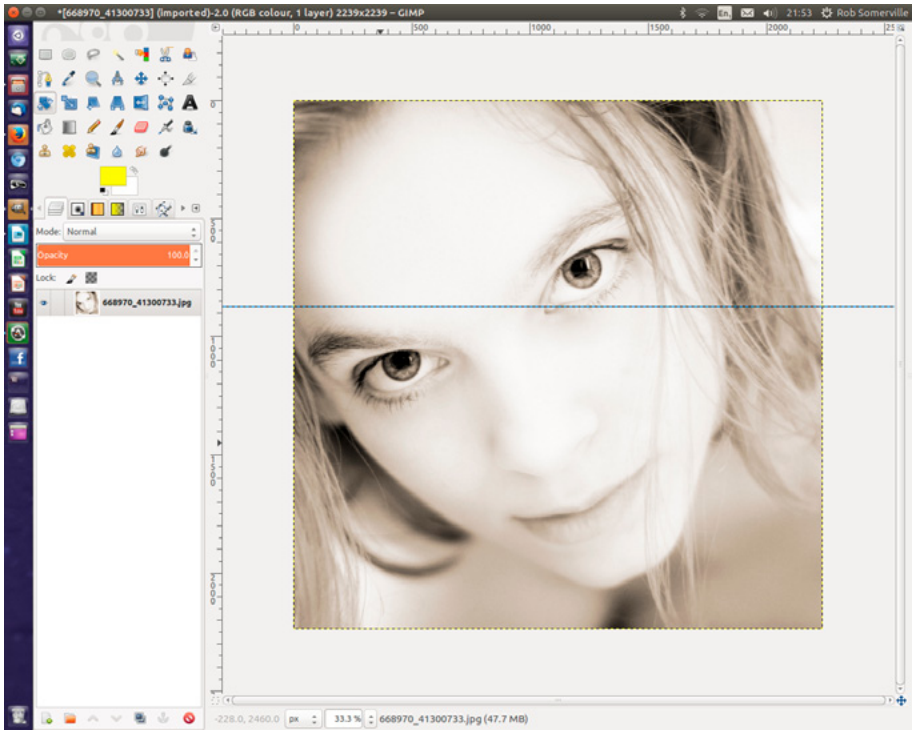
Step 1

Download the image of the female model from Table 1.

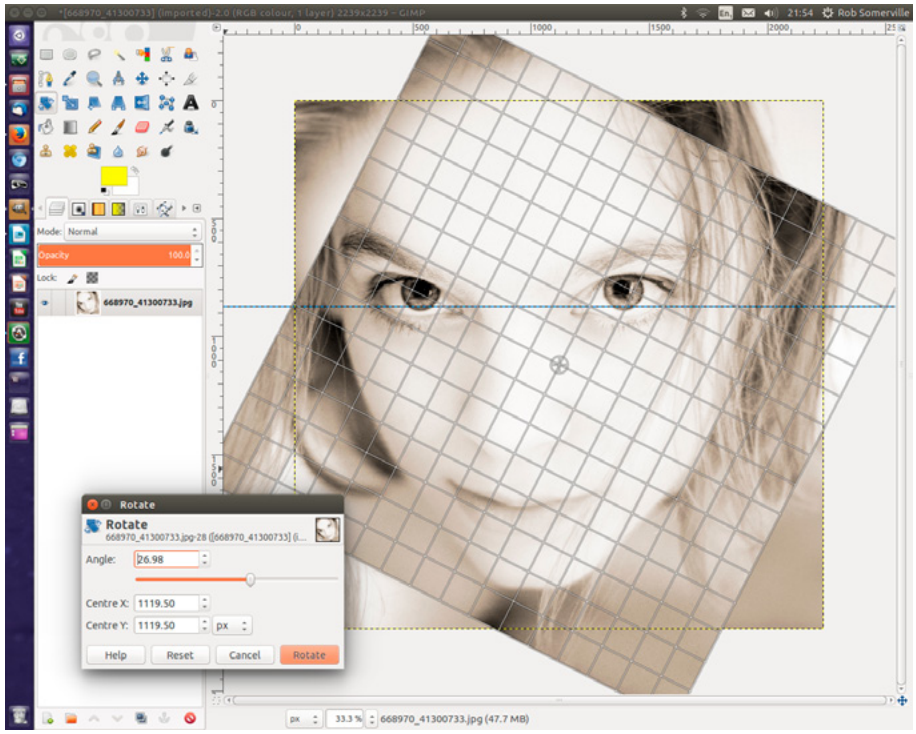
Details and Credits	Image	URL
Joann p 02 portrait Uploaded by obyvatel	Female model	*http://www.freeimages.com/photo/668970*

Step 2

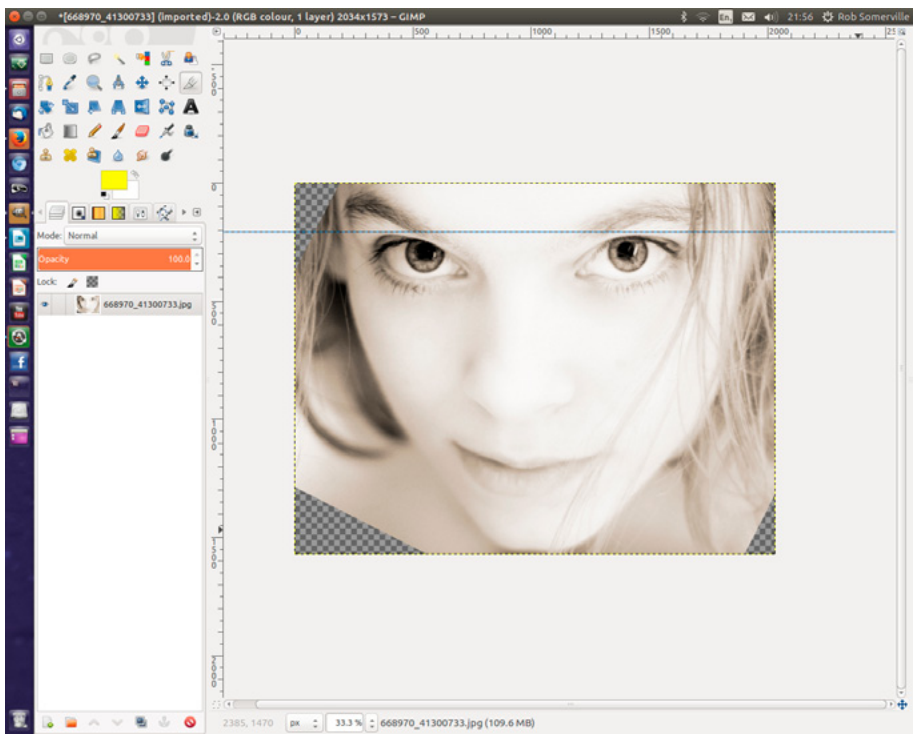
Pull the guide down from the top of the measuring bar, so that it rests just beneath the model's right eye [Screenshot 1].



Step 3
Using the *rotate tool*, rotate the image until the eyes become parallel to the guide [Screenshot 2].

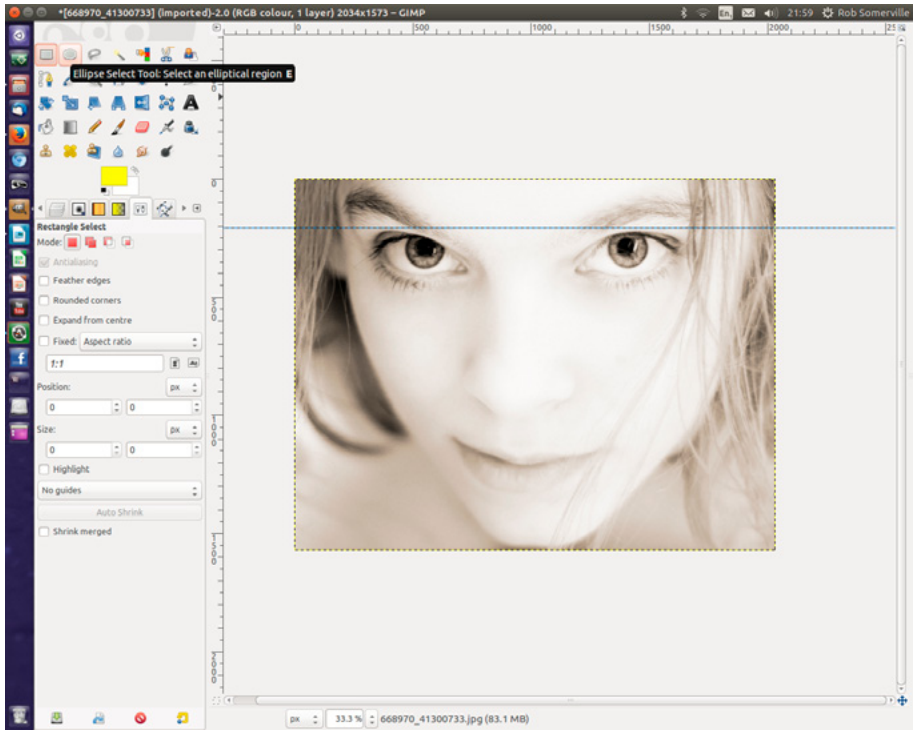


Step 4
Using the *move tool*, bring the layer down until the chin is at the bottom of the frame. Use the crop tool to centre the face by removing excess areas [Screenshot 3].



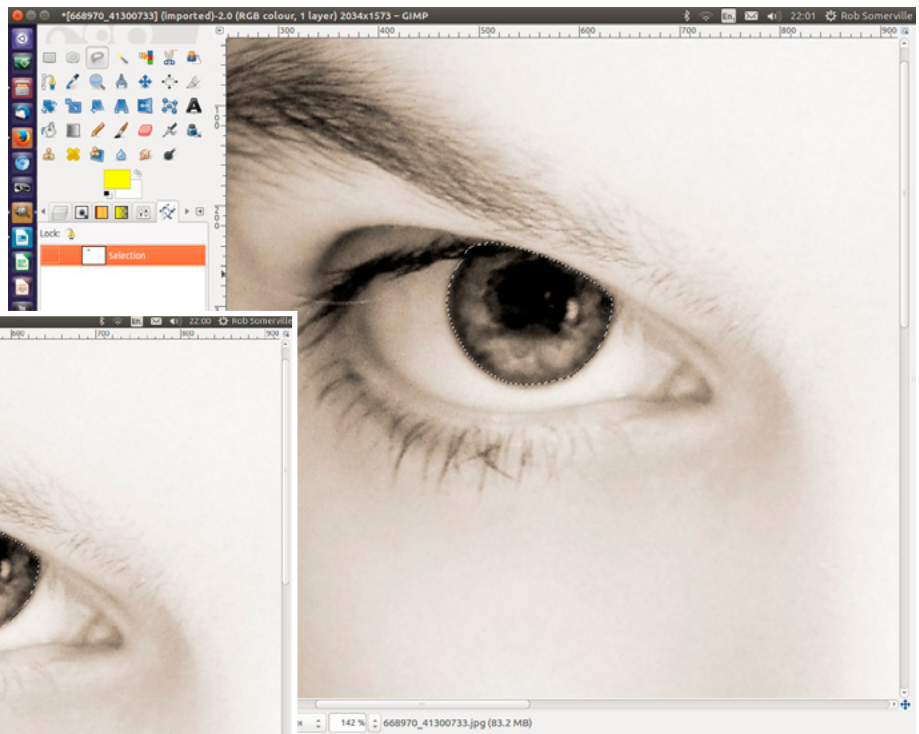
Step 5

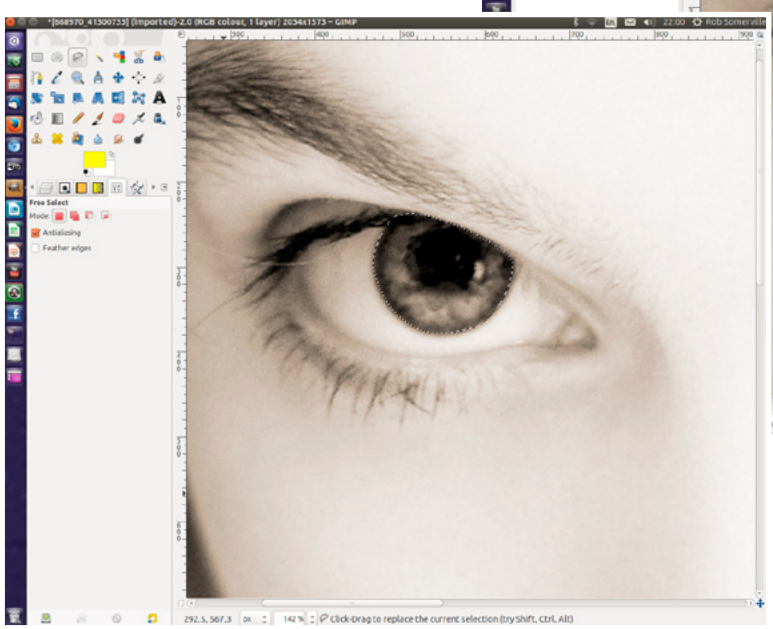
Use the *clone tool* to the area of the image left transparent due to the rotation. Use a large size brush to recreate the hair on the left hand side [Screenshot 4].



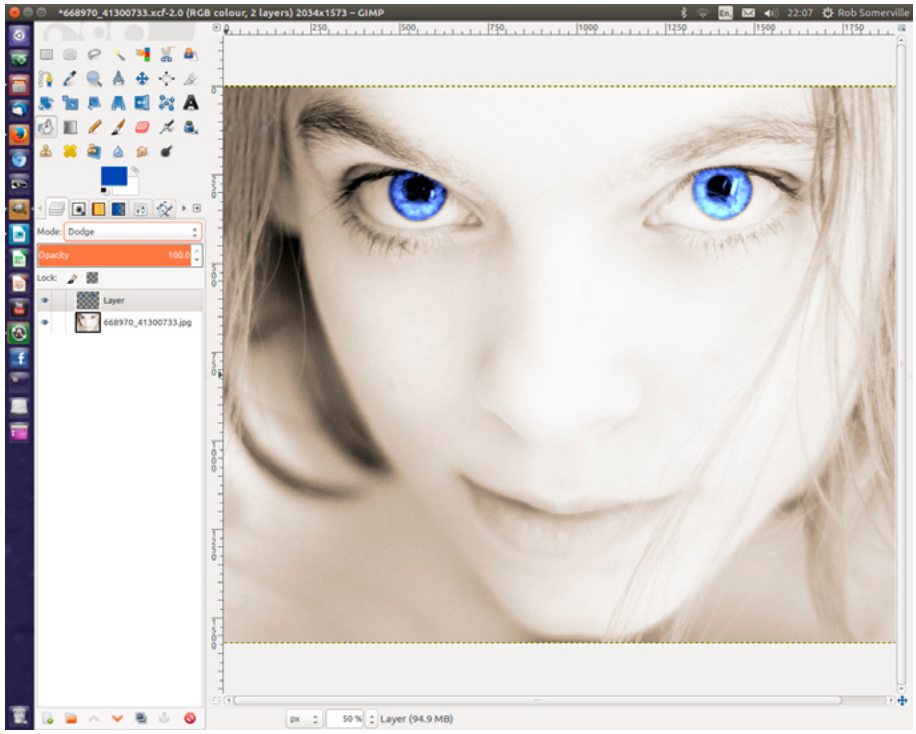
Step 6

Zoom in each eye in turn and carefully select around the iris. Use the shift key to select the area around the second eye. Click on the paths tab and choose selection to path [Screenshot 5-6].

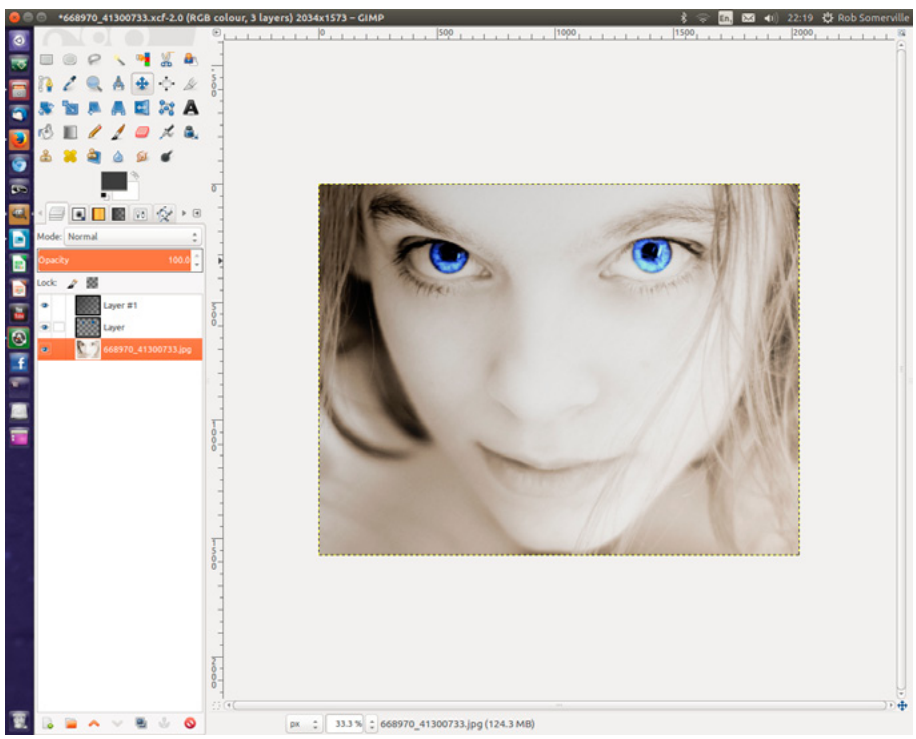




Step 7
Add a new layer, pick a color for the eyes and fill the selected areas. Change the layer mode to *dodge* [Screenshot 7].

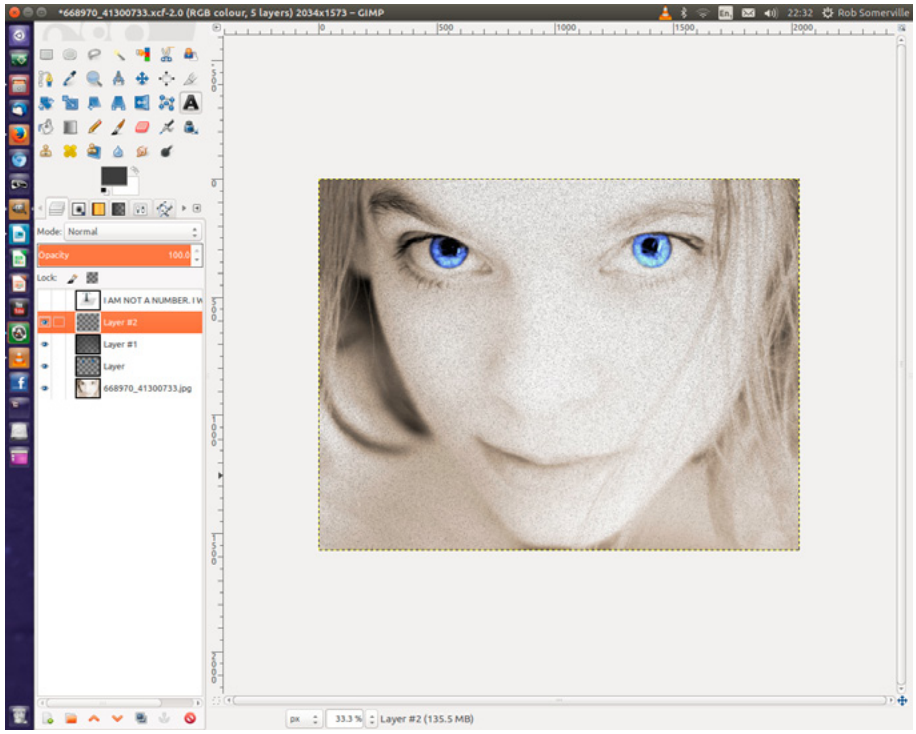


Step 8
Using the *smudge tool*, touch up around the eyes dragging the color away from the edge of the iris, so that no sharp edges still remain. Add a new layer and fill with a 45 degree gradient from top left to bottom right. [Screenshot 8].



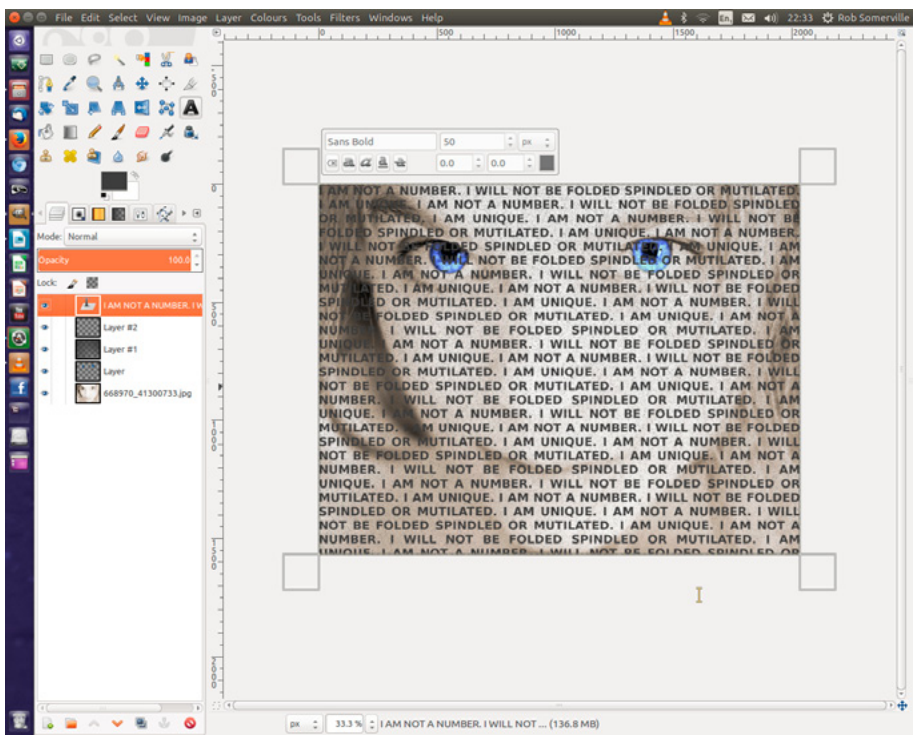
Step 9

Add a new layer as in Step 8, and change the mode to *dissolve*. Adjust the opacity until you get the level of interference you like. Similarly, change the layer in Step 8 until you get an effect you prefer. In the final version, I chose burn [Screenshot 9].



Step 10

Using the *text tool*, select the whole image and then enter the text you want as the *message*. This is very processor and graphics intensive, but Sans 50pt seemed to work OK on my elderly PC. The smaller the font, the more text and the slower this operation will be. Change the layer mode to *overlay mode* [Screenshot 10].



Step 11
Using the *erase tool*, remove all the text detail and gradients from the inside of the eyes. *Experimenting with the text layer*, duplicating it and changing the mode then trying to delete text from the face is a good technique.

Step 12
The final result that I saved will be similar as in [Screenshot 11].

ROB SOMERVILLE

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Getting to Grips With the Gimp – Part 7

In the seventh part in our series on the Gimp we will retouch an old photo and start working with filters.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

Retouching photos is a common request, and we will recreate the Stalinist propaganda of the removal of Nikolai Yezhov from the photo with Stalin to illustrate how to manipulate old images. We will then apply some filters to enhance the photograph.

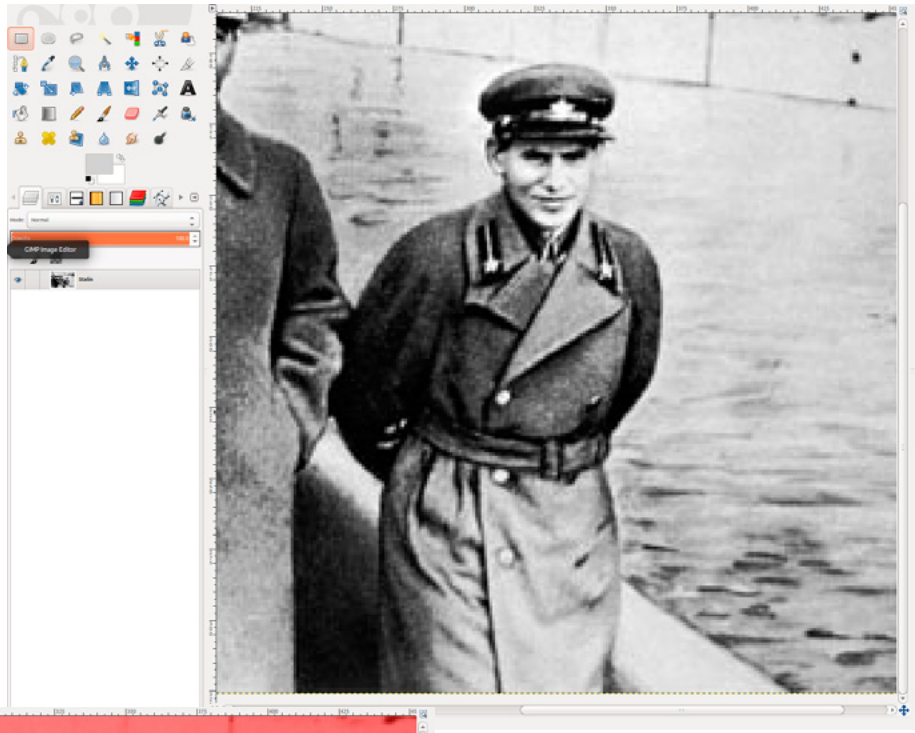
Download the image listed in Table 1.

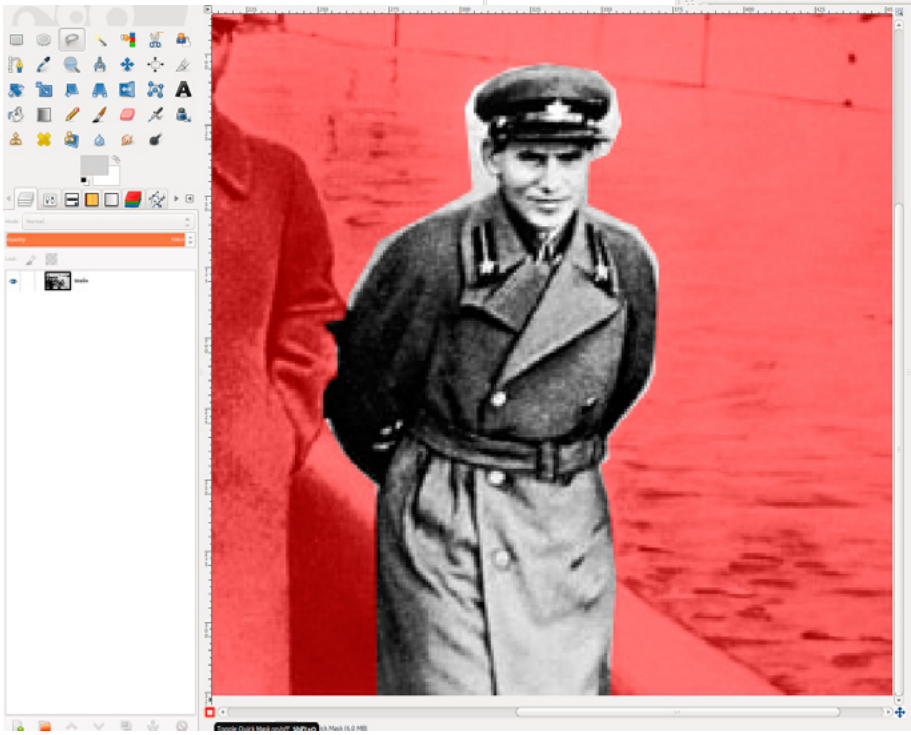
Table 1. *Details and credits*

Image	URL	Details and credits
The Commissar Vanishes	http://upload.wikimedia.org/wikipedia/commons/9/91/Voroshilov%2C_Molotov%2C_Stalin%2C_with_Nikolai_Yezhov.jpg	Wikimedia – Voroshilov, Molotov, Stalin, with Nikolai Yezhov

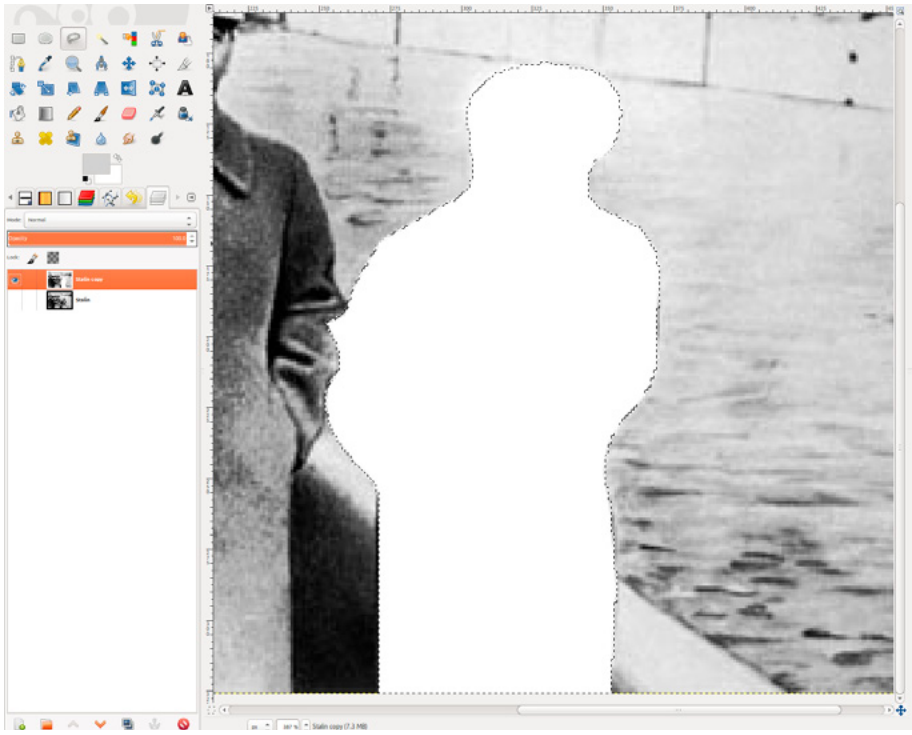
Duplicate the original layer, hide the original and select the second layer.

Zoom in on the figure of Yezhov and select him using the free select tool. I have turned the quick mask on to highlight the area selected [Figure 1 and Figure 2].

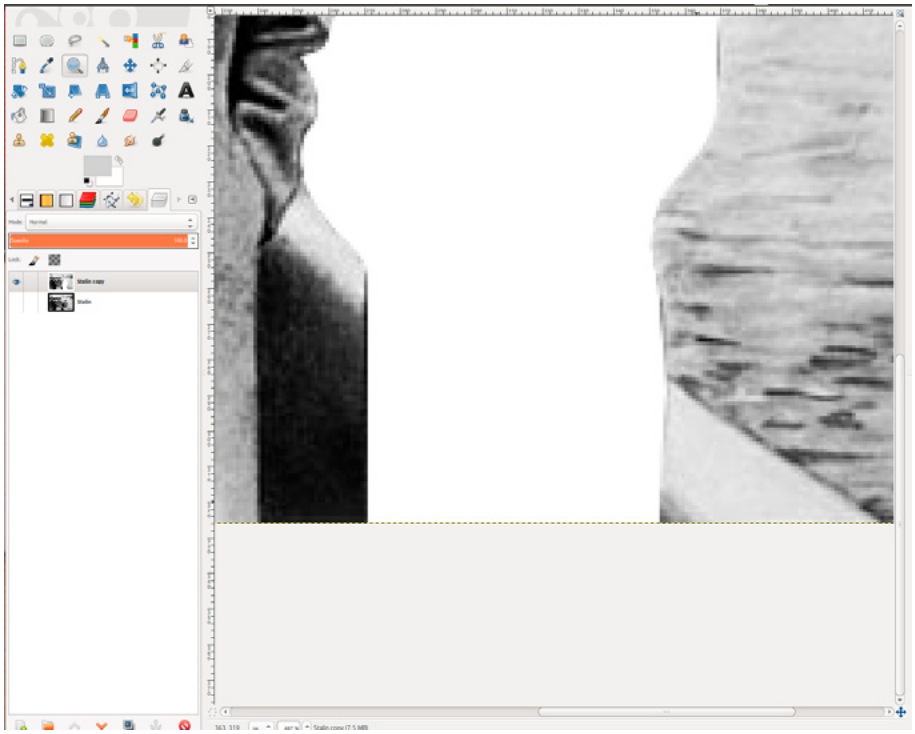




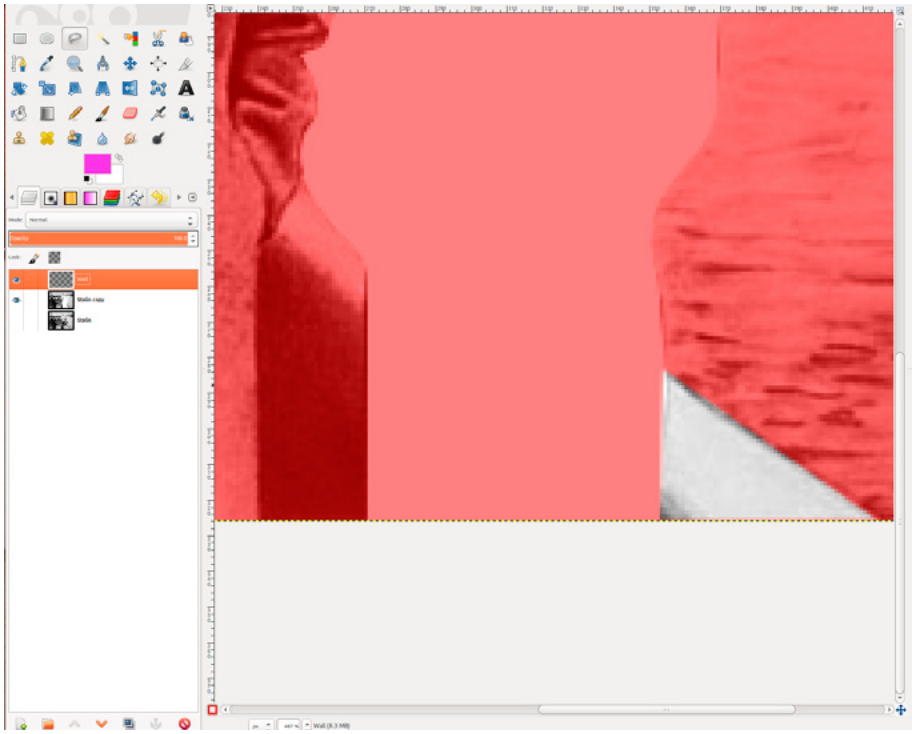
Press DEL to remove Yezhov [Figure 3].



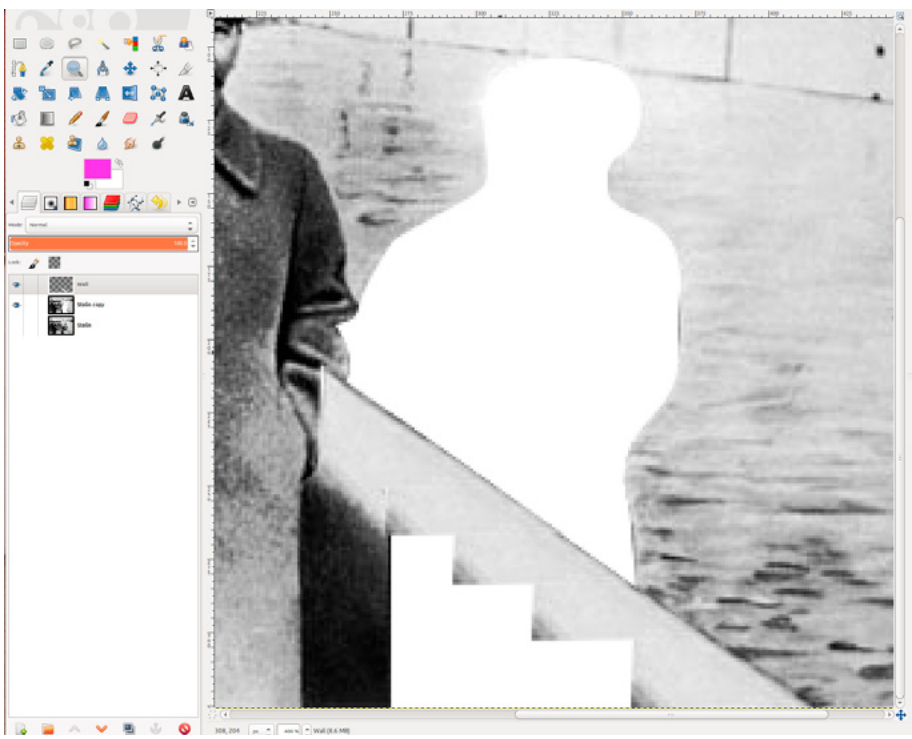
Press *Ctrl Shift A* to deselect the area and zoom in on the bottom right hand side of the wall [Figure 4].



Select and copy the area of wall at the bottom right of the photo as a patch. Create a new transparent layer called *wall* and select it [Figure 5].

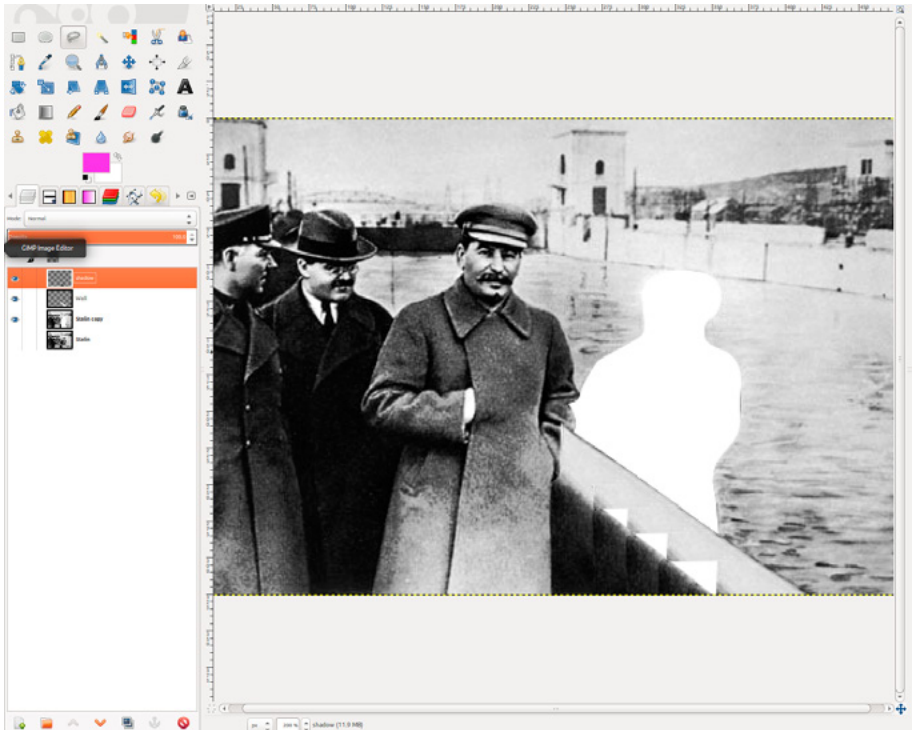


Following the line of the wall into the horizon, repeatedly paste the section of wall up past Stalin's arm [Figure 6].



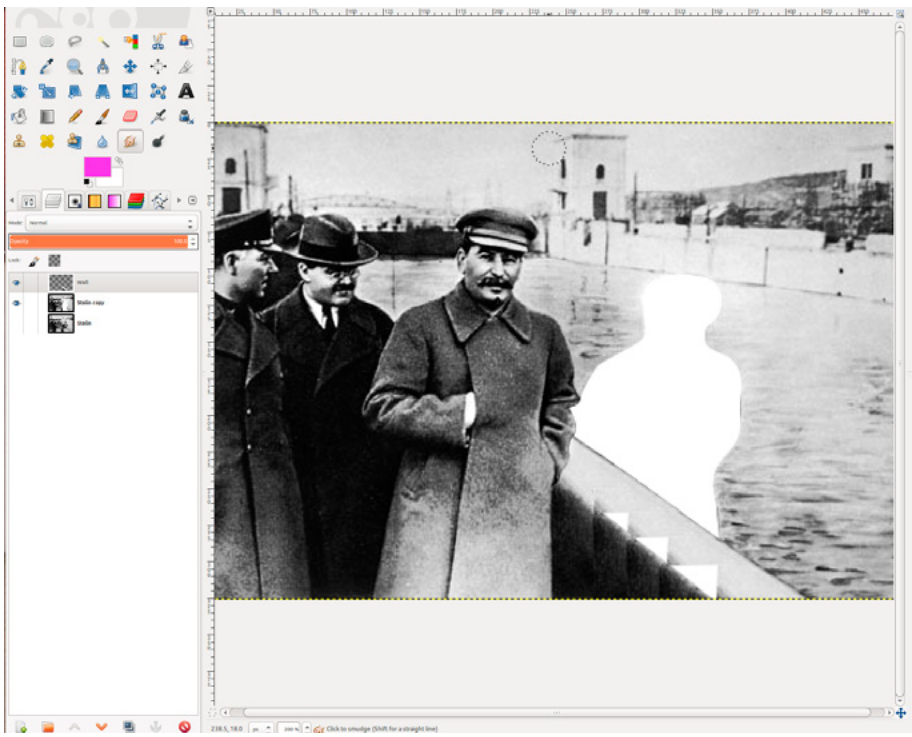
Temporarily hide the wall layer and select a suitable area of the wall shadow from the lower layer. Create a new transparent layer called *shadow* above *wall.*

Click on shadow and repeat the process in step 7 to duplicate the selected patch from Stalin's elbow to the lower corner of the picture [Figure 7].

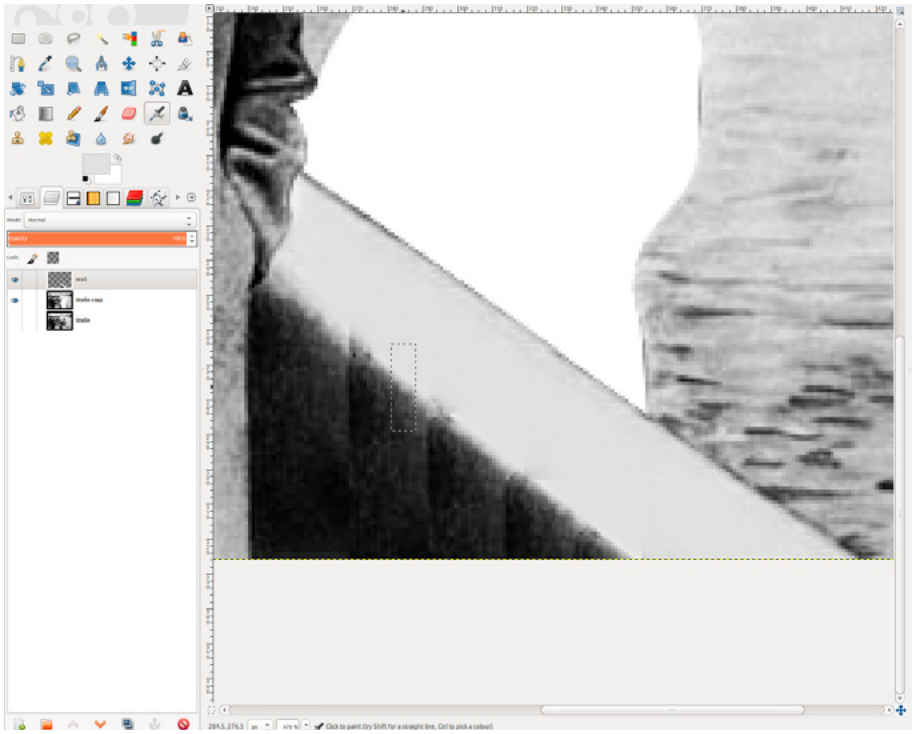


Merge the *Shadow* and *Wall* layers by right clicking on *Shadow* and choose *Merge Down.*

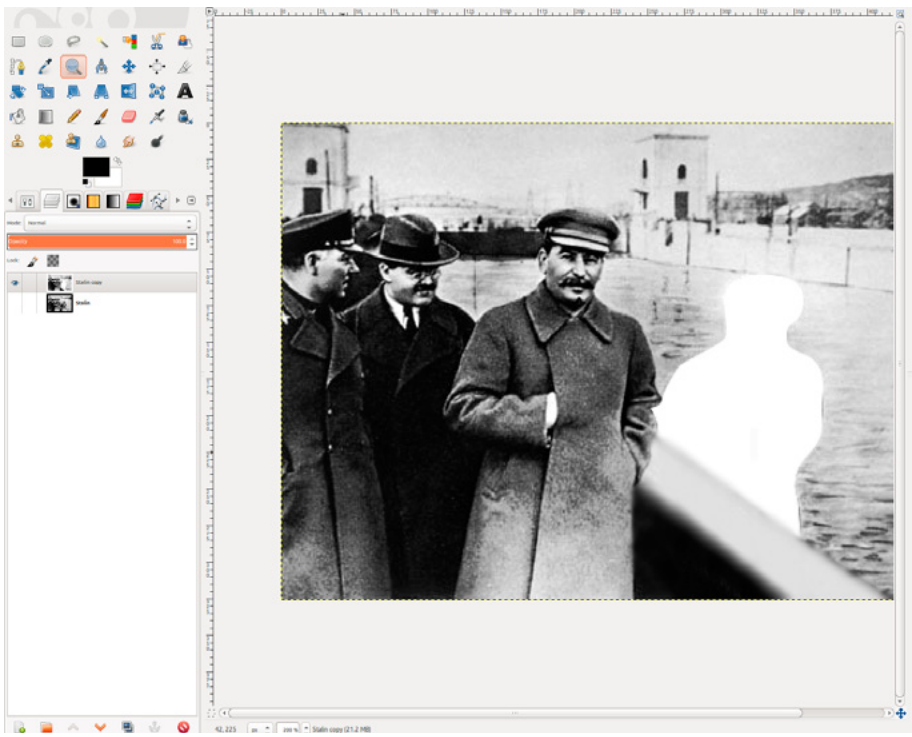
Give this layer 50% opacity, delete the overlap on Stalin's left arm and return the opacity to 100% [Figure 8].



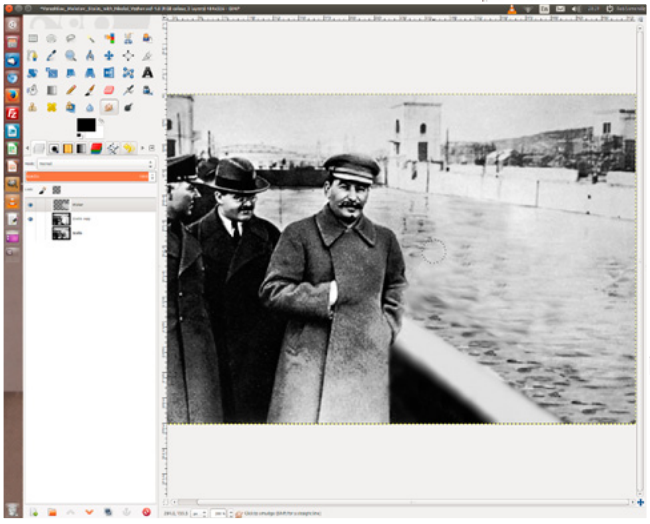
Use the block brush (Colour E0E0E0) rotated 90 degrees to airbrush any gaps on the top part of the wall [Figure 9].

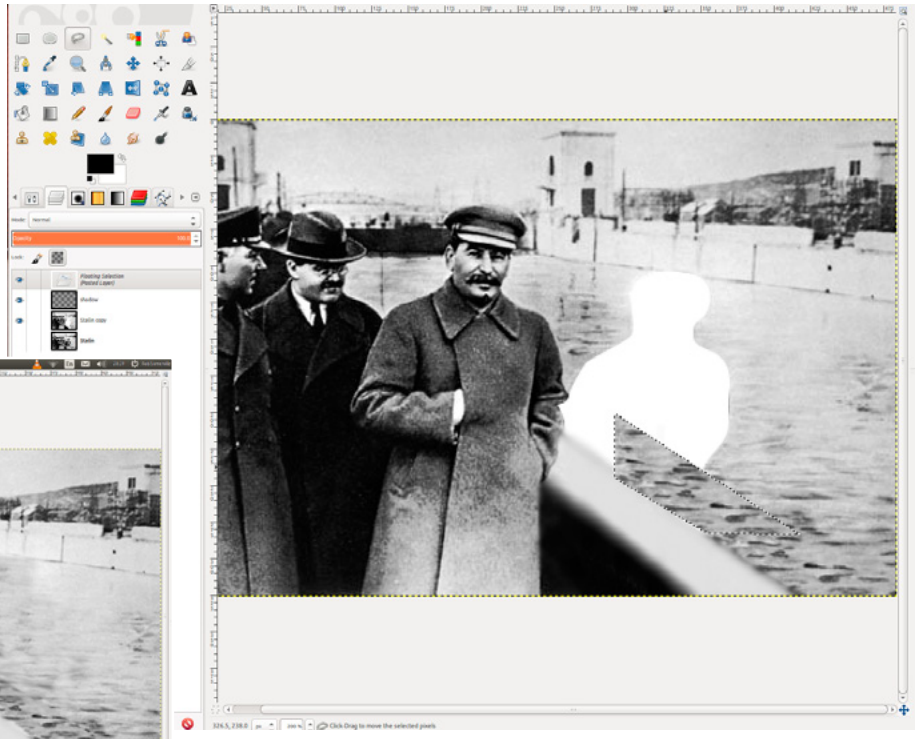


Create a new layer and using the airbrush tool touch up the shadow. Adjust the opacity of the layer to get a realistic appearance and merge the layer twice. Run the blur tool lightly over the sharp edges of the wall. Save the image [Figure 10].

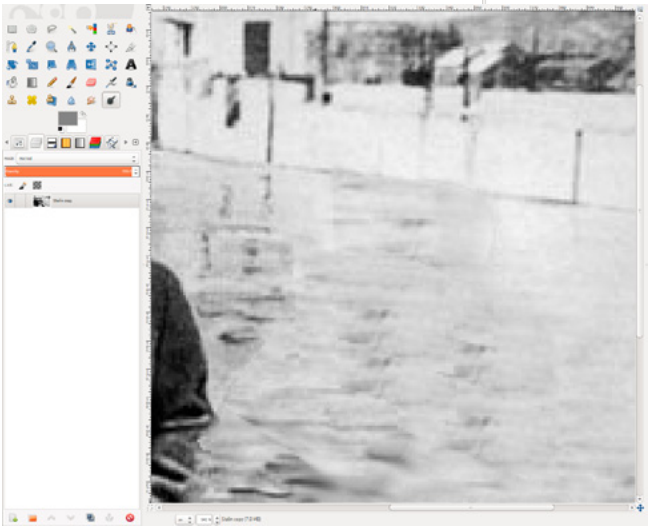


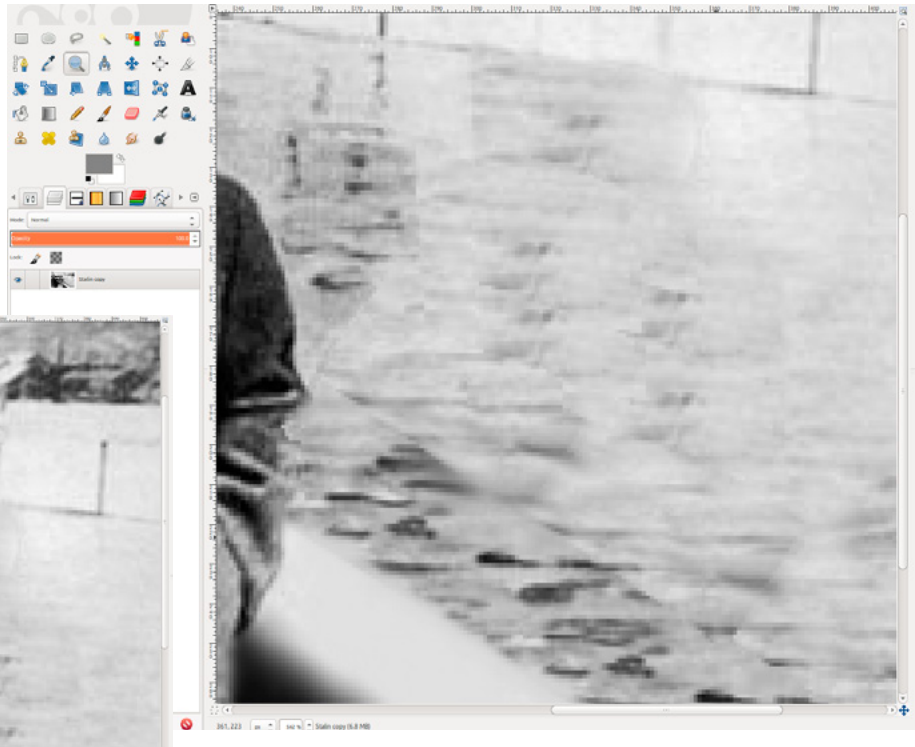
Create a new transparent layer called water and select a foreground patch of water from the lower layer. Copy and paste this into the new layer and work towards Stalin's arm. Repeat slightly higher up from the bottom right of the image to get a realistic water pattern. Use the [Figure 11 and 12]



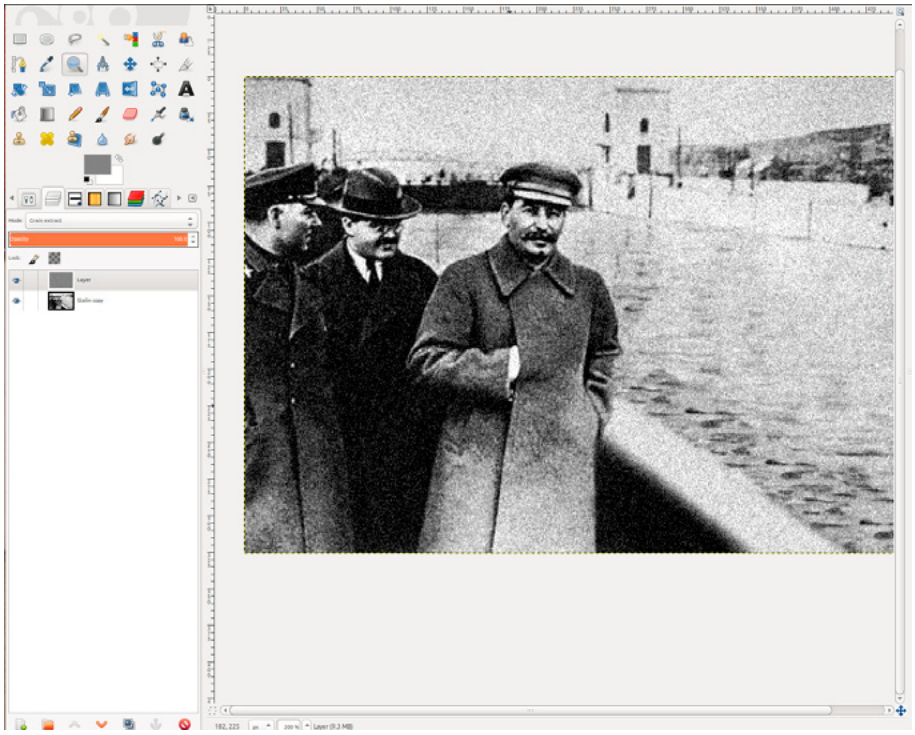


Under close examination, the modifications would not pass close examination. In particular although the wave pattern is fine, the contrast varies and is patchy. Touch this up with the dodge tool, adjusting the brush shape and size as required [Figure 13 & 14].



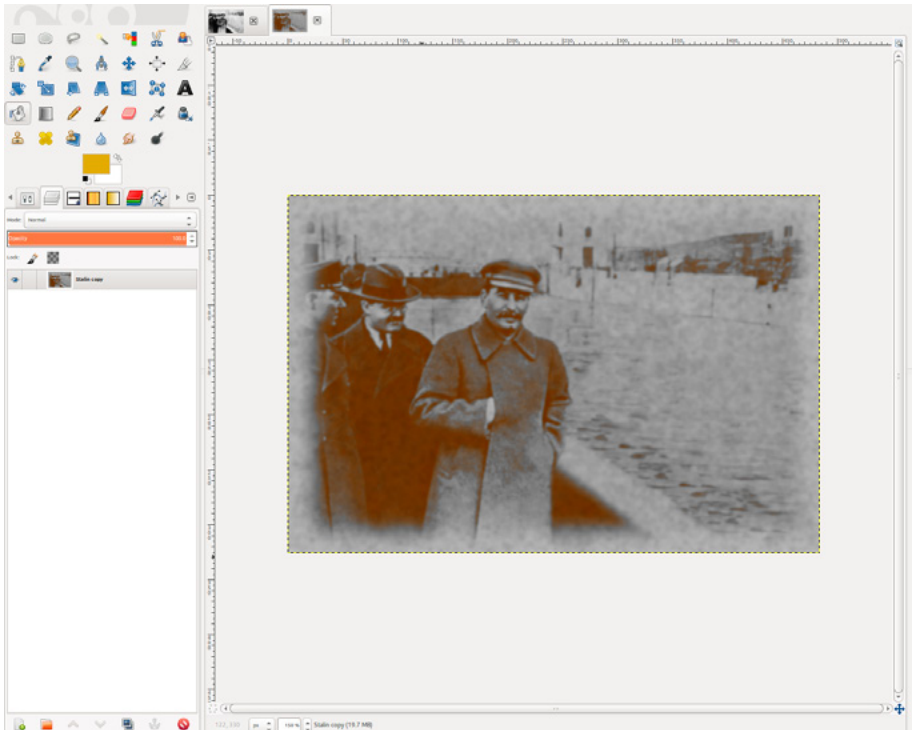


Add a new layer and fill this with 50% grey (828282). From the filters dialogue, select Noise → RGB noise. From the Colours menu, desaturate by luminosity. Then change the new layer mode to grain extract. This will result in a grainy image [Figure 15].



To create a sepia toned image, disable the grain layer and select Filters → Decor → Old photo [Figure 16].

Congratulations, you can now join the ranks of the propagandists.



ROB SOMERVILLE

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Getting to Grips With the Gimp – Part 8

In the eighth part in our series on the Gimp we will look at how to extend the Gimp with extra add-ons.

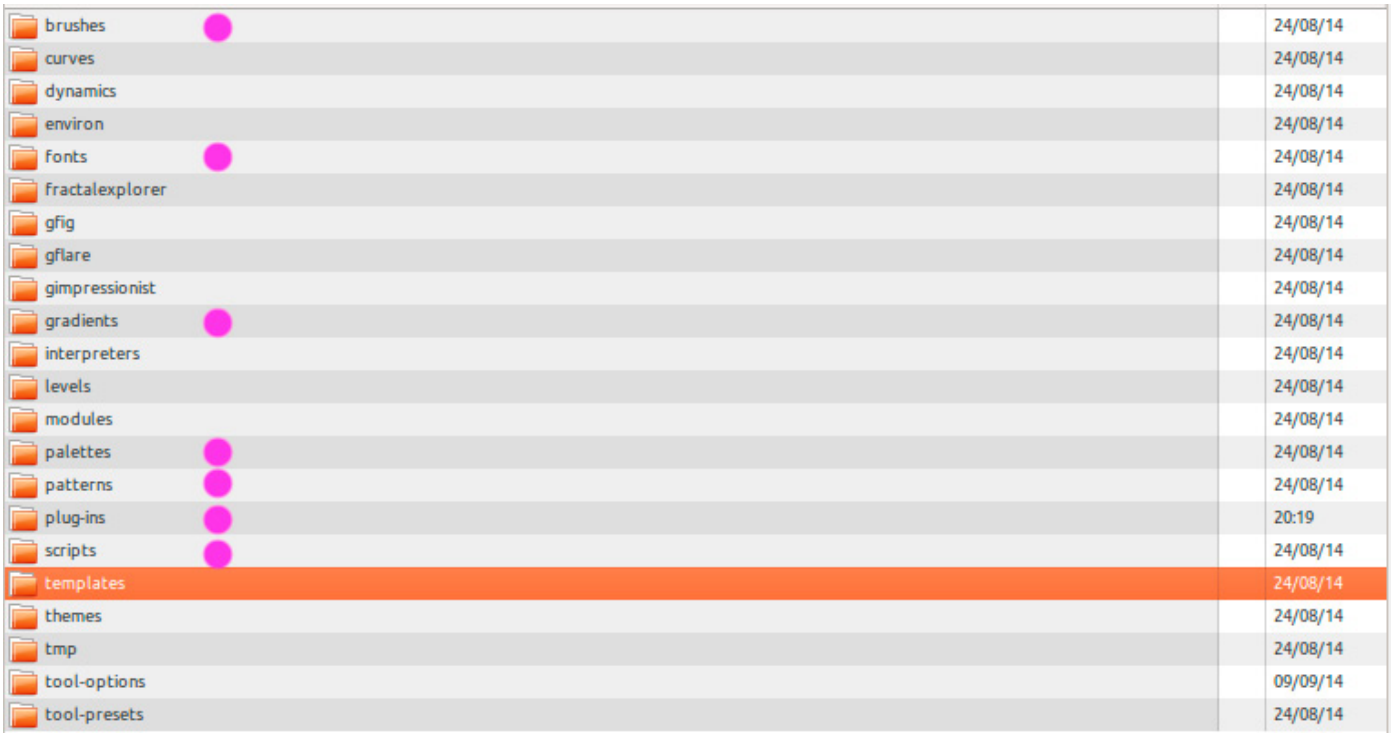
What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

The Gimp currently supports a number of add-ons: Brushes, Gradients, Patterns, Palettes, Fonts, Scripts and Plug-ins. Adding an extra resource is simplicity itself, once the desired add-on has been found, download and extract it into the relevant folder under the Gimp home folder. This is located in `/home/username/.gimp-2.8` for the current version of the Gimp where username is the account you are logged in as [Figure 1].



There are far too many resources on the web to list them all, but I have complied a list of some of the most popular in Table 1.

Table 1. Details and credits

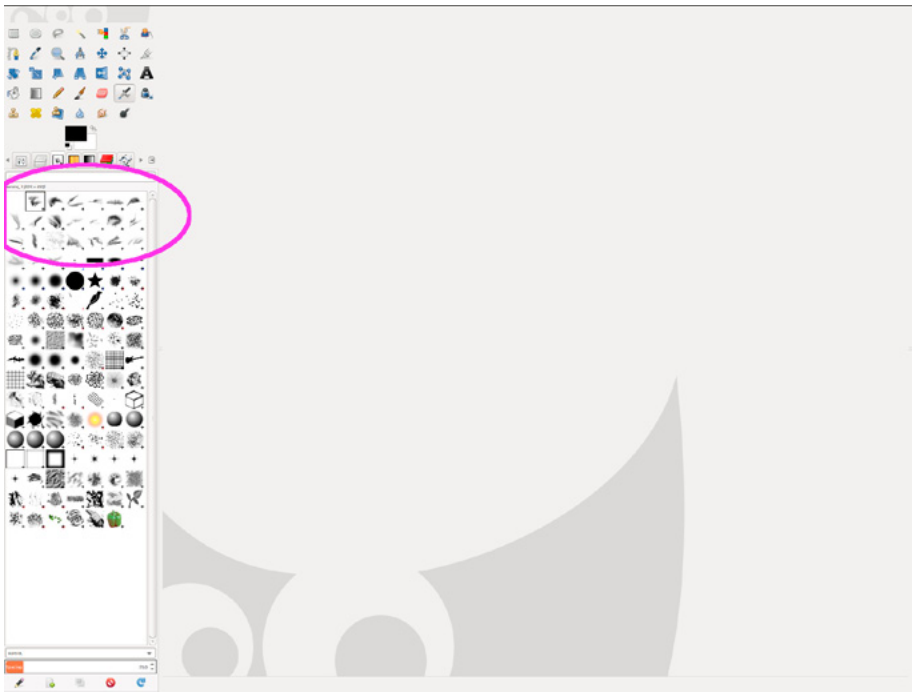
Resource	URL	Details and credit
Deviant art	*http://www.deviantart.com*	Massive resource of Gimp extras
Abstract fonts	*http://www.abstractfonts.com*	Font resource for private and commercial use
Gimp plugin registry	*http://registry.gimp.org*	Gimp plugins and scripts

Add a brush

Download the Aurora Borealis brush set from *http://www.deviantart.com/art/GIMP-Aurora-Brushes-71229165*.

Extract the Aurora directory from GIMP_Aurora_Brushes_by_Project_GimpBC.zip into `/home/username/.gimp-2.8/brushes` (I used Archive Manager for this).

Restart the Gimp – The new brushes will be found under the Brushes tab [Figure 2].

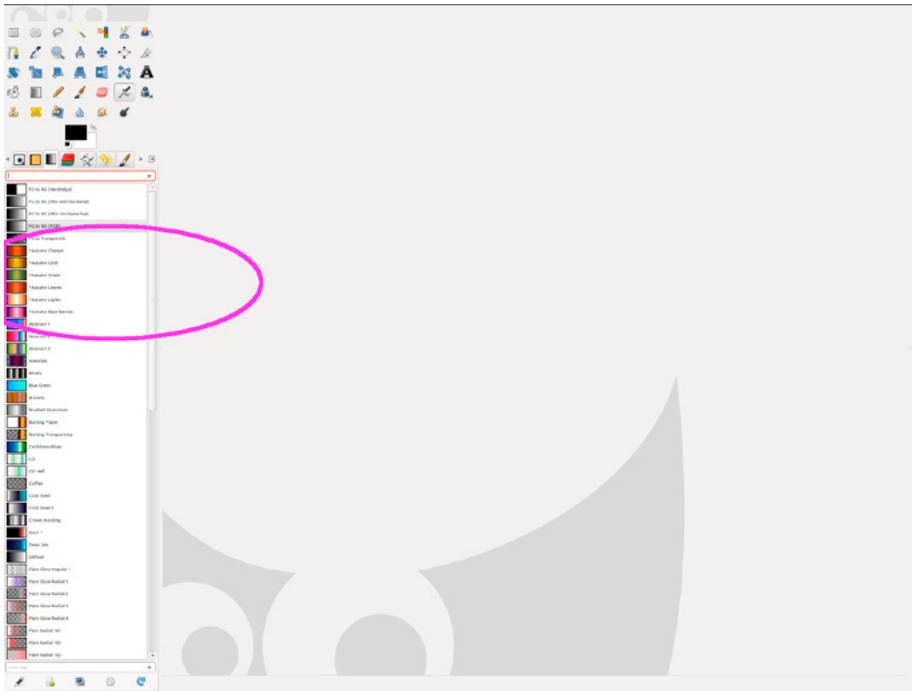


Add a gradient

Download the Autumn gradients from *http://www.deviantart.com/art/6-Autumn-Gradients-for-GIMP-187205931*.

Extract the 6 gradient files from 6_autumn_gradients_for_gimp_by_ln213-d33gh0r.zip into `/home/username/.gimp-2.8/gradients`.

Restart the Gimp – The new gradient will be found under the gradient tab [Figure 3].

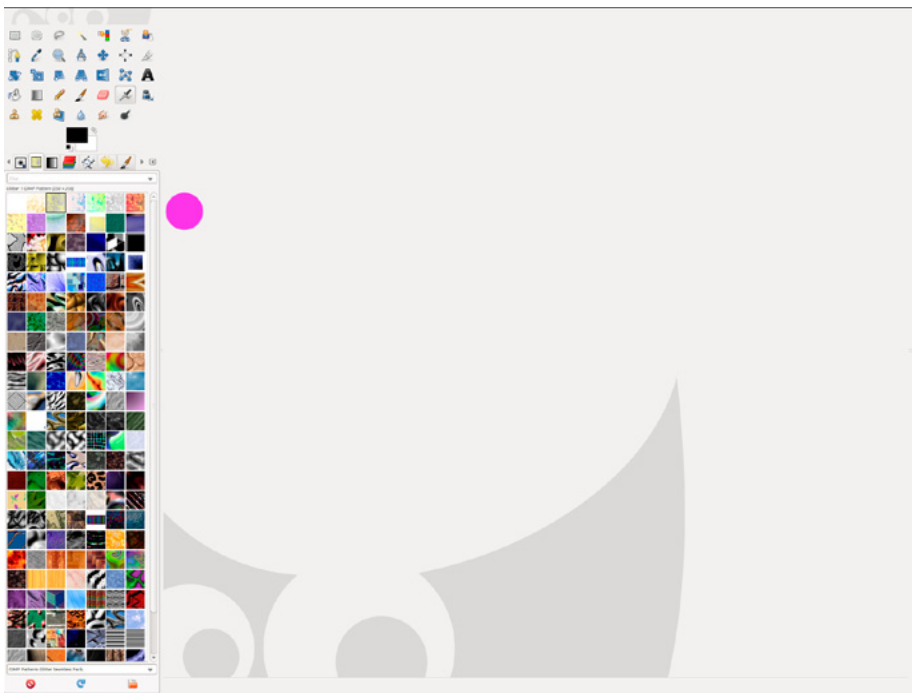


Add a pattern

Download Glitter Gimp Patterns from *http://www.deviantart.com/art/Glitter-GIMP-Patterns-187921791*.

Extract the folder and contents form glitter_gimp_patterns_by_jedania-d33vtdr.zip into `/home/username/.gimp-2.8/patterns` and delete the readme file as this will cause an error message in the Gimp.

Restart the Gimp – The new gradient will be found under the gradient tab [Figure 4].



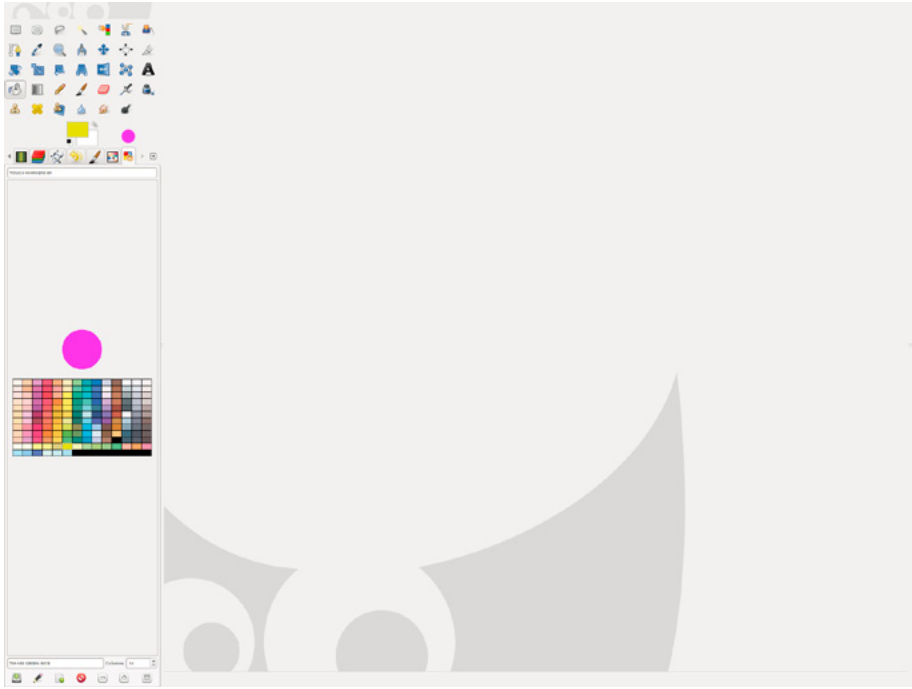
Add a palette

Download the Touch marker palette from *http://www.deviantart.com/art/Touch-marker-palette-for-GIMP-108710037*.

Extract the contents from Touch_marker_palette_for_GIMP_by_dfmurcia.zip into `/home/username/.gimp-2.8/palettes`.

Ensure the palettes tab is enabled via Windows → Dockable dialogues → Palettes.

Restart the Gimp – The new palette will be found under the palettes tab [Figure 5].

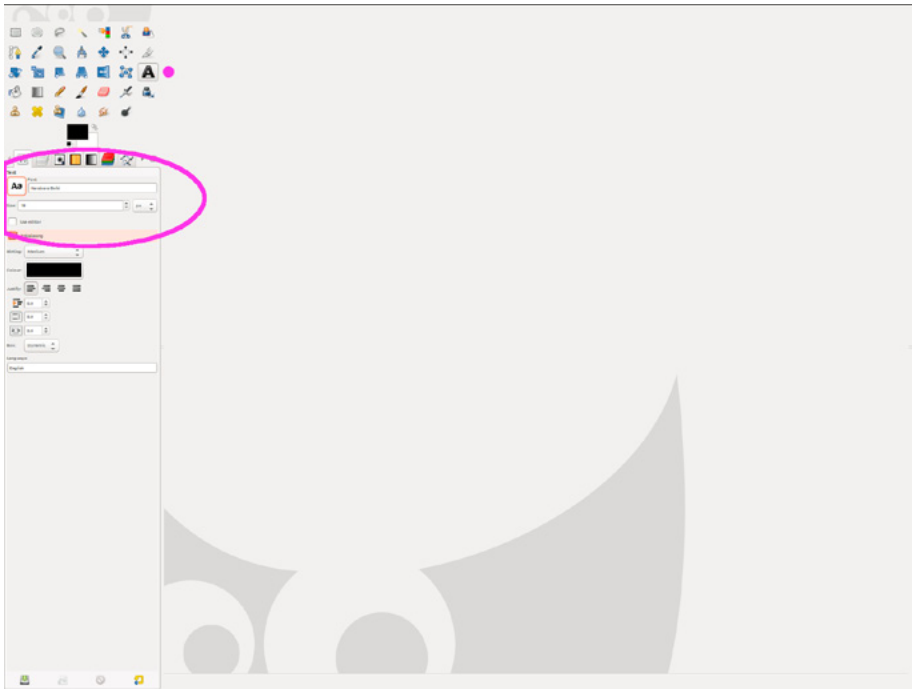


Add a font

Download Harabara regular from *http://www.abstractfonts.com*.

Extract the TTF file from harabara_regular.zip into into `/home/username/.gimp-2.8/fonts`.

Restart the Gimp and the font will be available under the text button [Figure 6].

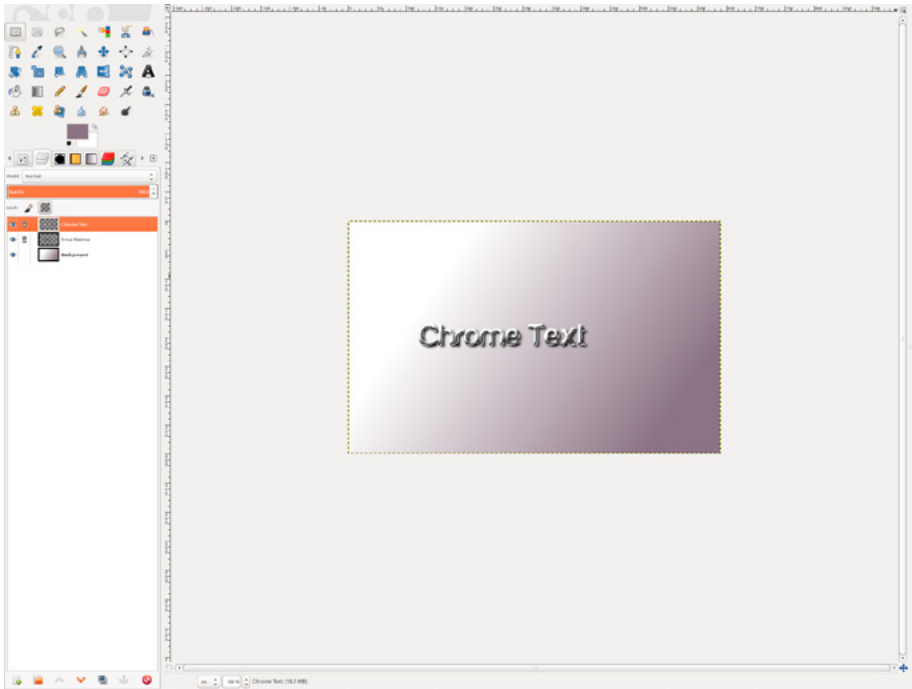


Add a script

Download the Gimp Chrome script by Fence-post from *http://www.deviantart.com/art/GIMP-Chrome-Scripts-77288538* into the `/home/username/.gimp-2.8/scripts` directory.

Refresh scripts by going to Filters → Script-Fu → Refresh scripts.

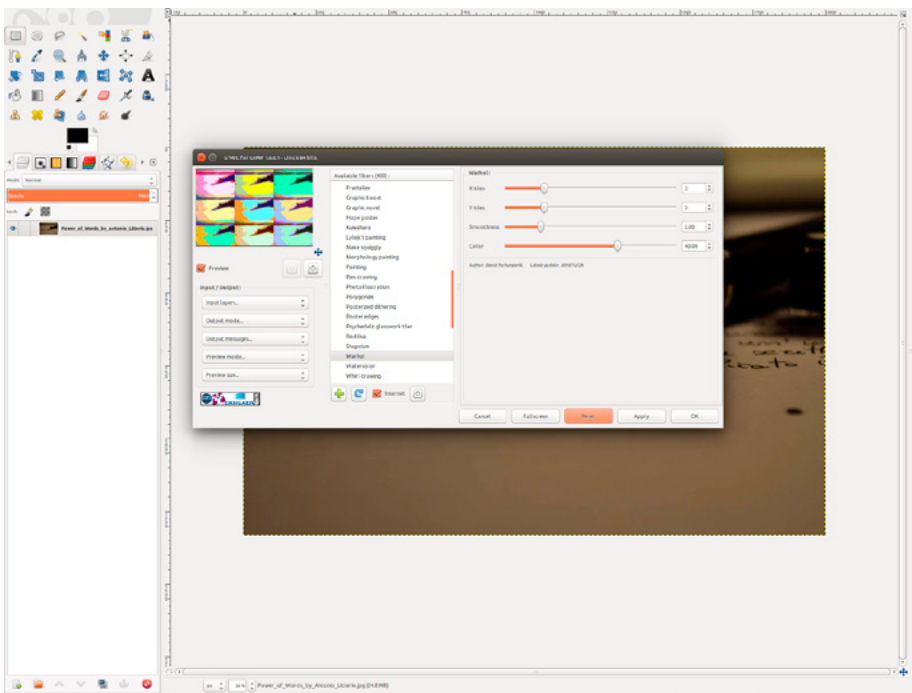
Add some text to a new image, and apply the filter via Filters → Alpha to logo → Fencepost chrome [Figure 7].



Add a plug-in

Download the G'MIC from *http://registry.gimp.org/node/13469* and extract the content of the zip file to `/home/username/.gimp-2.8/plugins` directory.

Restart the Gimp, load an image of your choice and run the plugin from Filters → G'MIC. You will now have an additional 400 effects you can apply to your image [Figure 8].



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Getting to Grips with the Gimp – Part 9

In the penultimate part in our series on the Gimp we will look at how to create a 3d package for a FreeBSD carton that is print ready.

What you will learn…

- How to manipulate images like a design pro

What you should know…

- General PC administration skills

In this tutorial we will create a realistic 3D object using the perspective tool that could potentially used for packaging any product. The key to this is accuracy and scaling, as any mismatch will ruin the final image.

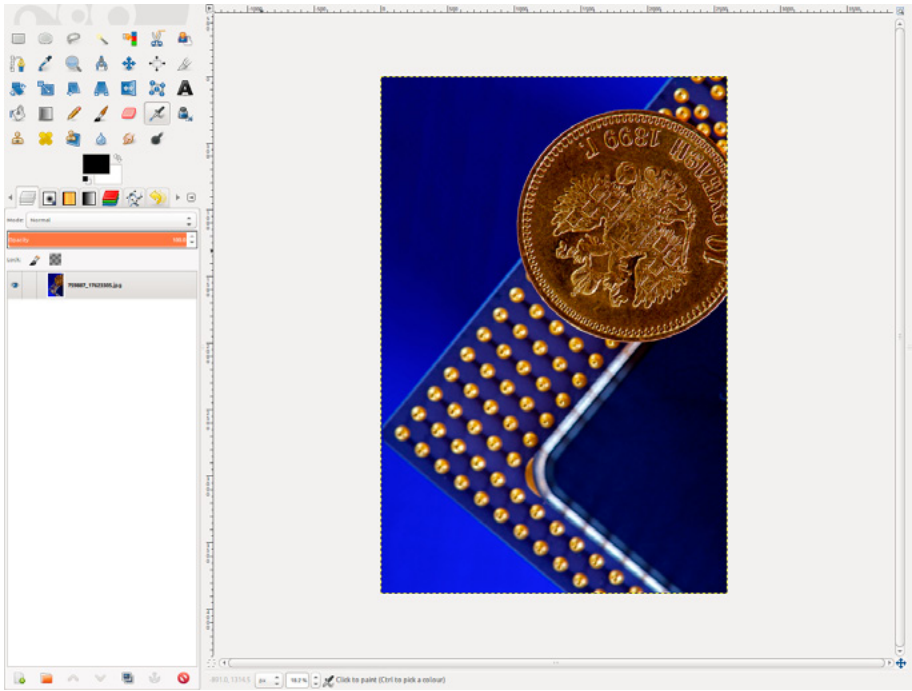
Download the images from Table 1.

Table 1. *Details and credits*

Resource	URL	Details and credit
FreeBSD website	*https://www.freebsd.org/logo/logo-basic.png*	FreeBSD Logo and fonts
CPU core	*http://www.freeimages.com/photo/759887*	**Gold roubles** 10 russian gold roubles and CPU by styf22
Power button	*http://www.freeimages.com/photo/675014*	**Power Button** Hard drive power button by jmonte

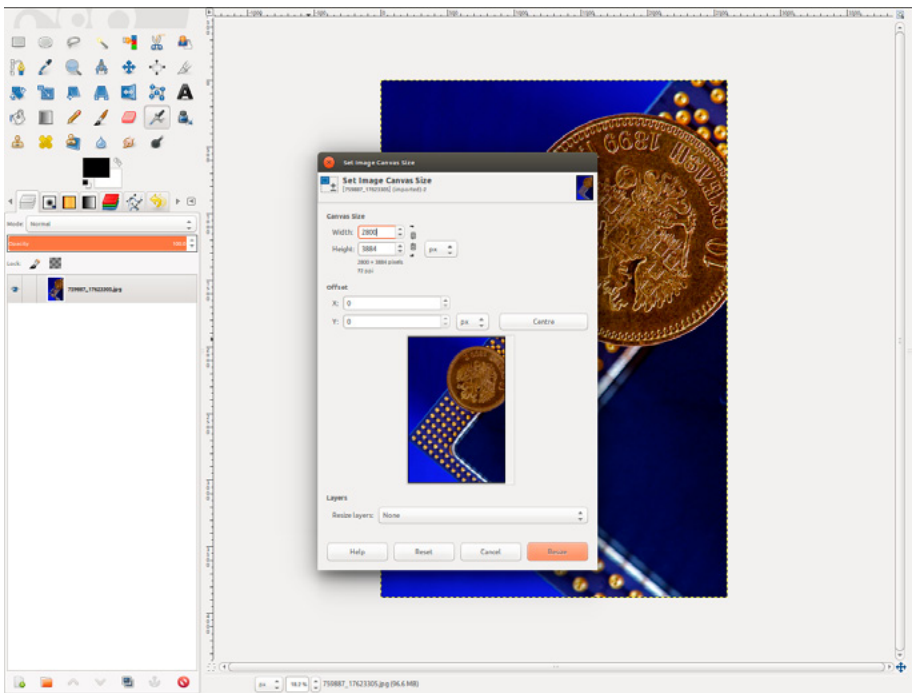
Step 1

Open the CPU image [Figure 1].



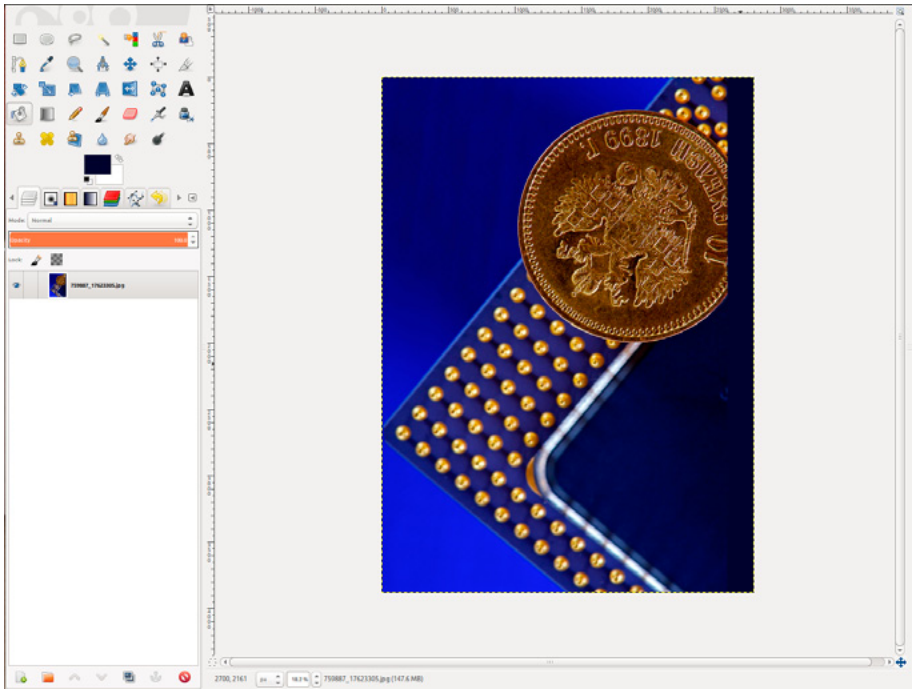
Step 2

Rescale the image to 2800px with the constraint disabled [Figure 2].



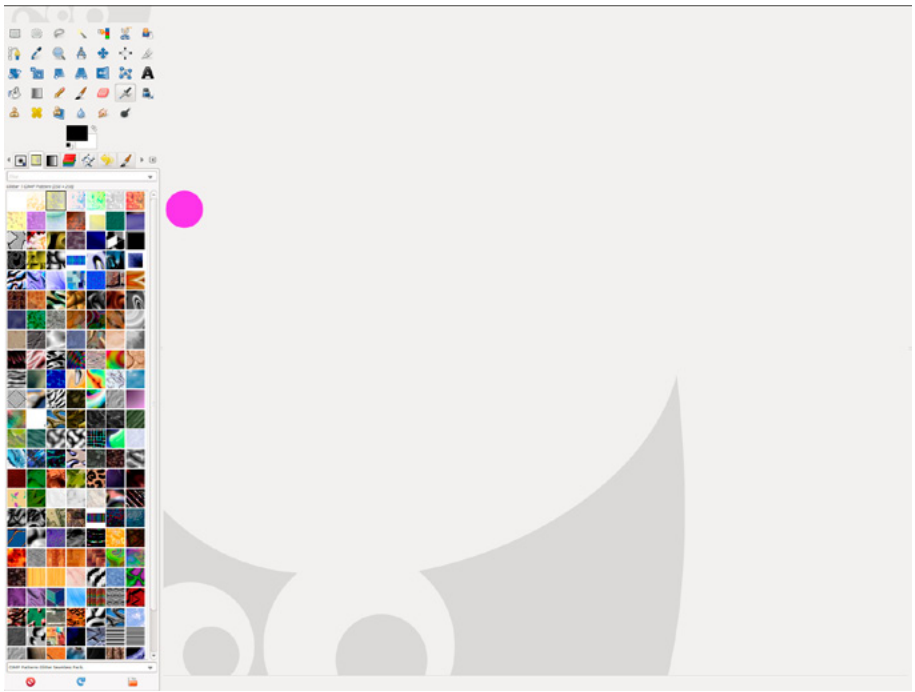
Step 3

Select Layer → Layer to image size. Use the colour picker tool, select a region in the core of the CPU and fill the right hand side of the expanded image [Figure 3].



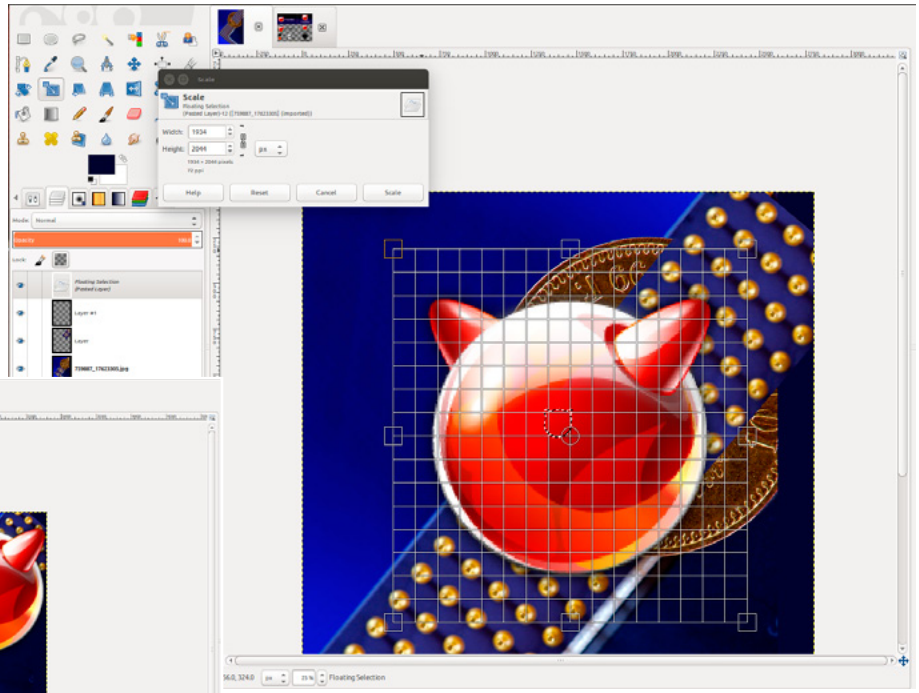
Step 4

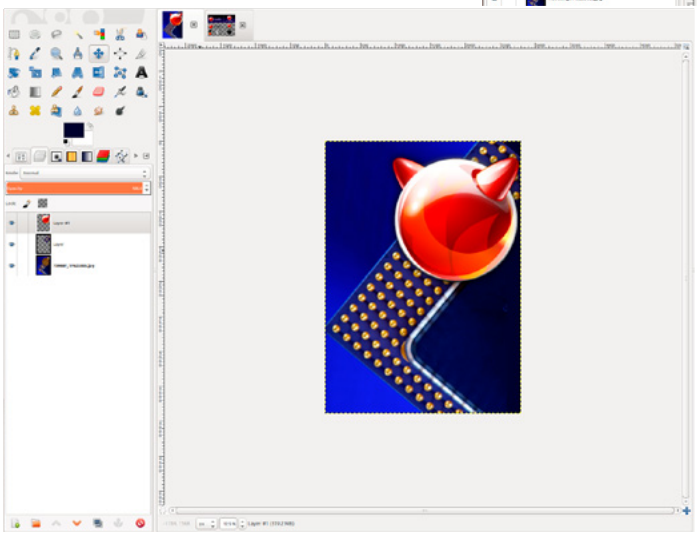
Create a new layer and click back on the original layer. Select some CPU pins from the lower left hand side using the lasso tool, copy the selection and paste into the new layer. Temporarily reduce the opacity of the layer while aligning so you can overlay the pins accurately [Figure 4].



Step 5

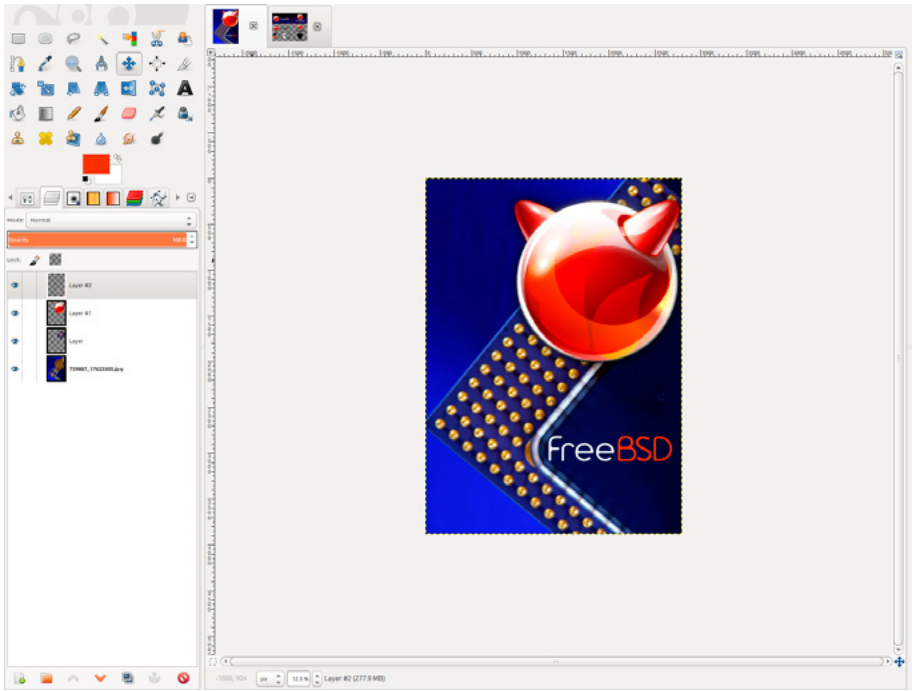
Open the FreeBSD logo image and select and copy the transparent Red Daemon sphere. Create a new layer in the CPU image and paste the result. Click on the scale tool and ensure the constrain is enabled. Scale the image to neatly overlay the coin [Figure 5, 6].





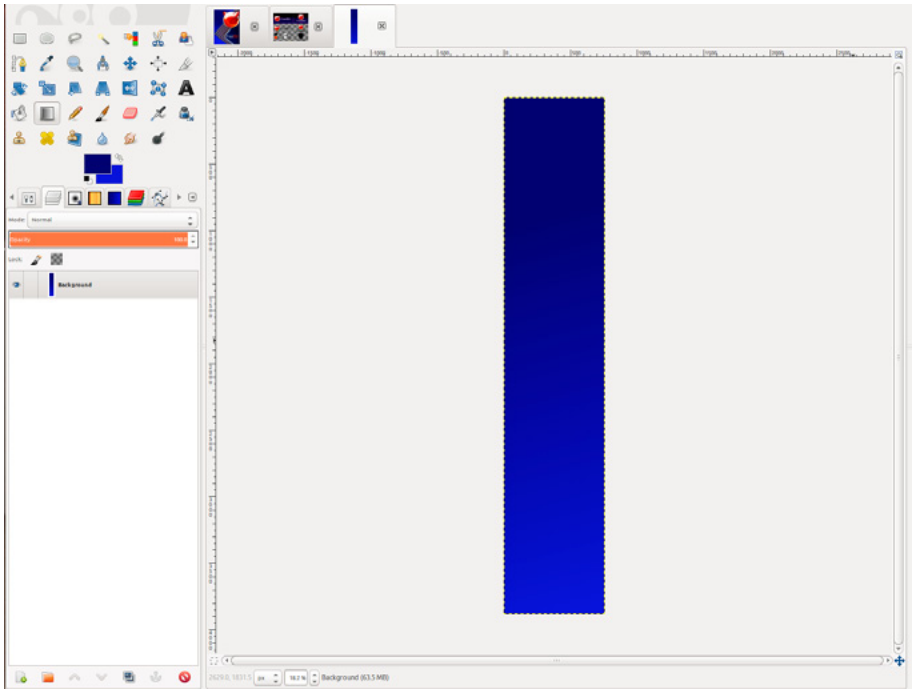
Step 6

Add a new layer. Hide all the other layers. Copy the transparent FreeBSD text in black into the new layer. With constrain enabled, scale to 1500px and anchor the layer. Add a new layer. Set the foreground colour to #ff3300, select a square bounding box around “BSD” and fill with red. Repeat with the “Free” text and fill with white. Set the layer to Addition. Reveal the other layers and move the FreeBSD text to the edge of the CPU die. Select Layer → Layer to image size [Figure 7].



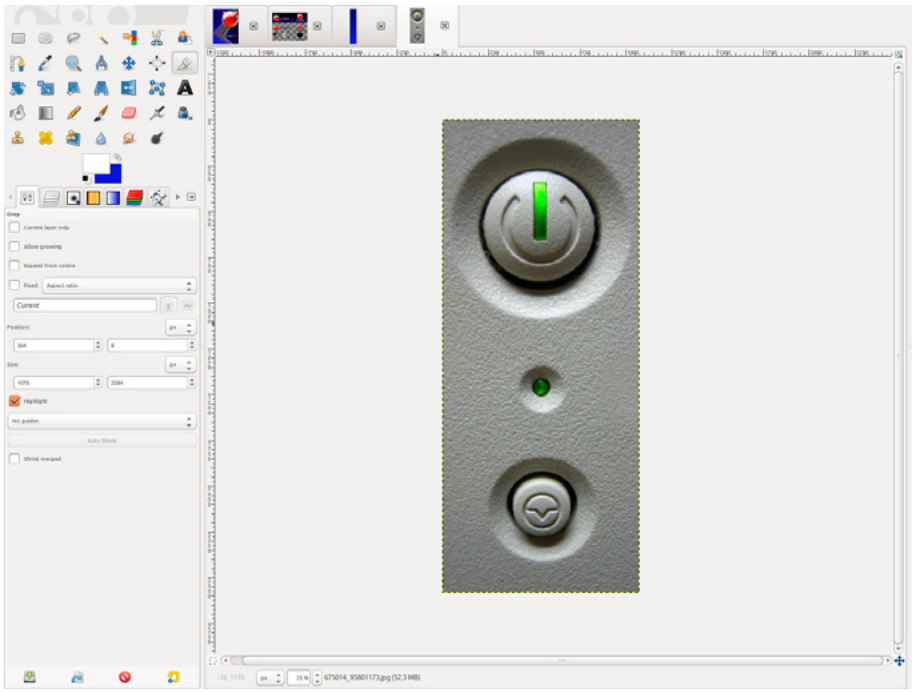
Step 7

Set the resolution of the image to 300 pixels/in in both axis (Image → Scale). Create a new image with the same resolution 760 × 3884 pixels. Select the light and dark blue from the left hand side of the original image using the pick tool and set the foreground and background accordingly. Switch to the new image and use the gradient blend tool to fill the new image [Figure 8].



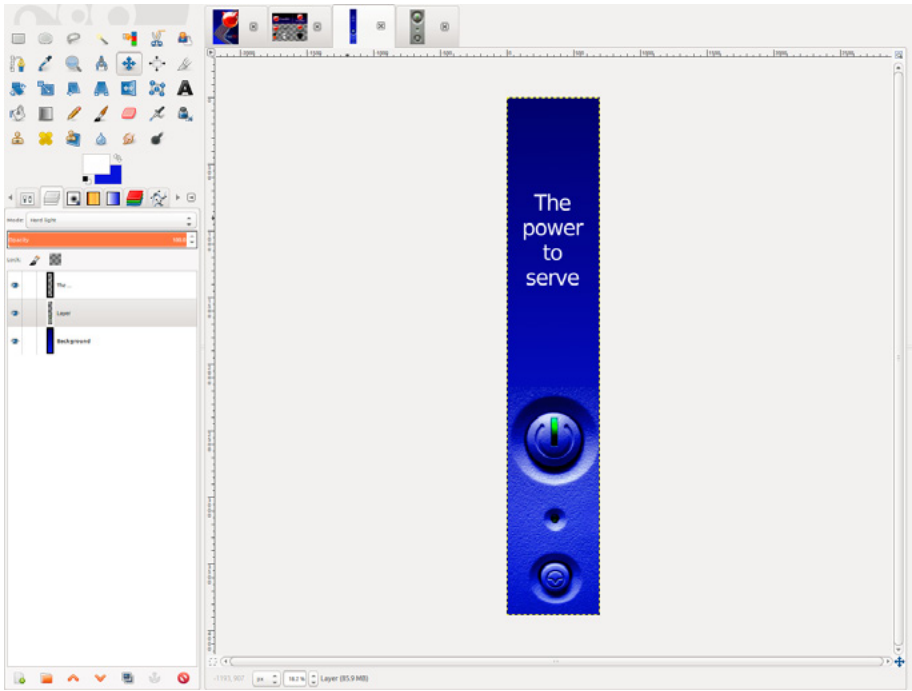
Step 8

Scale both the side and front images to 50% constrained. Open the hard drive light image and use the clone tool to remove the symbol engraved on the right hand side. Crop so that the switches are central [Figure 9].



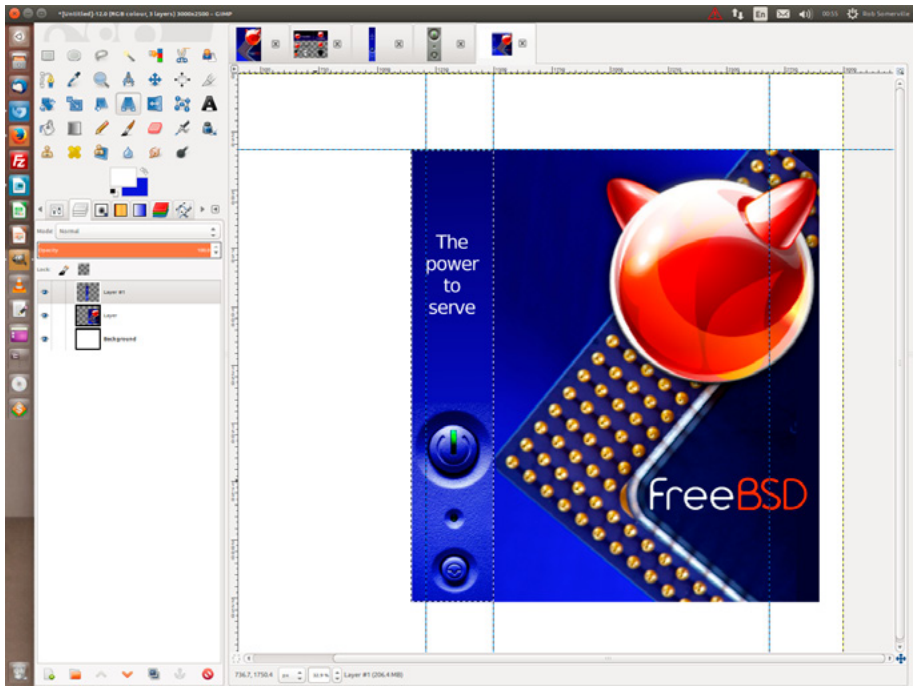
Step 9

Add a new layer to the side image and paste then scale the switches so they line up in the centre of the image. Add “The power to serve” text adjusting the kerning and size to fix the maximum width. Set the switch layer to hard light [Figure 10].



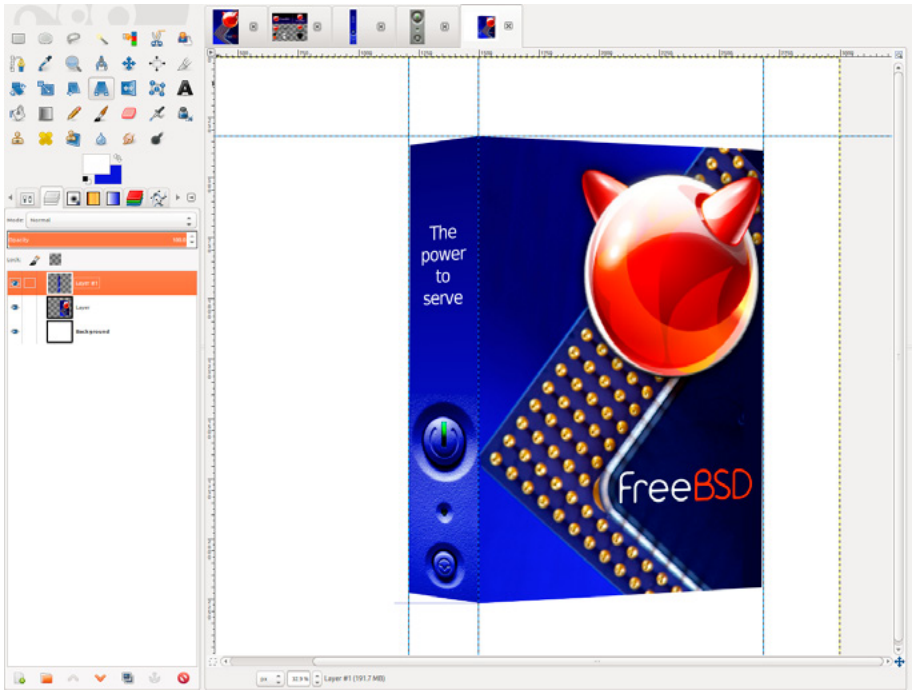
Step 10

Merge visible layers on both images. Create a new page with a white background 3000 x 2500 px. Add a guide at 50% of the vertical (Image → Guides by percent). Add a horizontal guide part way down the from the top of the page. Create two new layers, copy and paste the side image and front images into separate layers. Add two vertical guides one aligned against the 'P' and one intersecting the “S” [Figure 11].



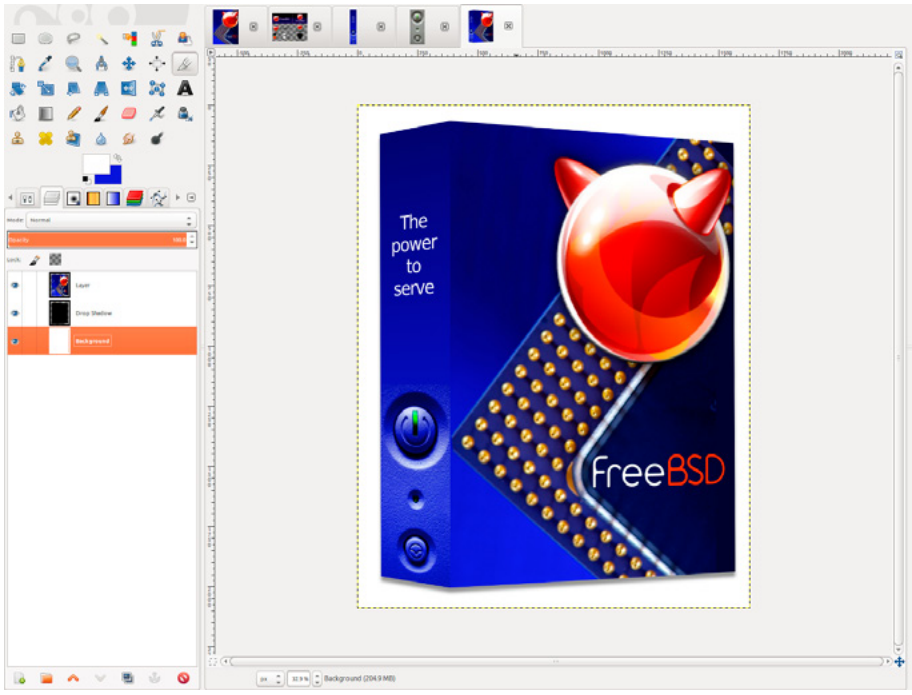
Step 11

Click on the left hand layer and using the square selection tool, outline the left hand panel. Click on the perspective tool and alight the vertical axis to match the left-hand guide then click on Transform. Anchor the layer. Repeat with the right hand panel and the right hand guide [Figure 12].



Step 12

Merge down the two layers, and add a shadow with 0 x offset and 20 y offset and blur radius. Give the shadow a 40% opacity. Crop and export as required [Figure 13].



ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

Improve your Firewall Auditing

As a penetration tester you have to be an expert in multiple technologies. Typically you are auditing systems installed and maintained by experienced people, often protective of their own methods and technologies. On any particular assessment testers may have to perform an analysis of Windows systems, UNIX systems, web applications, databases, wireless networking and a variety of network protocols and firewall devices. Any security issues identified within those technologies will then have to be explained in a way that both management and system maintainers can understand.

The network scanning phase of a penetration assessment will quickly identify a number of security weaknesses and services running on the scanned systems. This enables a tester to quickly focus on potentially vulnerable systems and services using a variety of tools that are designed to probe and examine them in more detail e.g. web service query tools. However this is only part of the picture and a more thorough analysis of most systems will involve having administrative access in order to examine in detail how they have been configured. In the case of firewalls, switches, routers and other infrastructure devices this could mean manually reviewing the configuration files saved from a wide variety of devices.

Although various tools exist that can examine some elements of a configuration, the assessment would typically end up being a largely manual process. Nipper Studio is a tool that enables penetration testers, and non-security professionals, to quickly perform a detailed analysis of network infrastructure devices. Nipper Studio does this by examining the actual configuration of the device, enabling a much more comprehensive and precise audit than a scanner could ever achieve.

Device Auditing	Scanners	Nipper Studio
Audit without Network Traffic	✗	✓
Authentication Configuration	✗	✓
Authorization Configuration	✗	✓
Accounting/Logging Configuration	✗	✓
Intrusion Detection/Prevention Configuration	✗	✓
Password Encryption Settings	✗	✓
Timeout Configuration	✗	✓
Physical Port Audit	✗	✓
Routing Configuration	✗	✓
VLAN Configuration	✗	✓
Network Address Translation	✗	✓
Network Protocols	✗	✓
Device Specific Options	✗	✓
Time Synchronization	✗	✓
Warning Messages (Banners)	✓*	✓
Network Administration Services	✓*	✓
Network Service Analysis	✓*	✓
Password Strength Assessment	✓*	✓
Software Vulnerability Analysis	✓*	✓
Network Filtering (ACL) Audit	✓*	✓
Wireless Networking	✓*	✓
VPN Configuration	✓*	✓

* Limitations and constraints will prevent a detailed audit

Getting to Grips with the Gimp – Part 10

In the final part in our series on the Gimp we will wrap up and take a look at how to further improve your Gimp experience.

What you will learn…

- How to manipulate images like a design pro

What you should know…

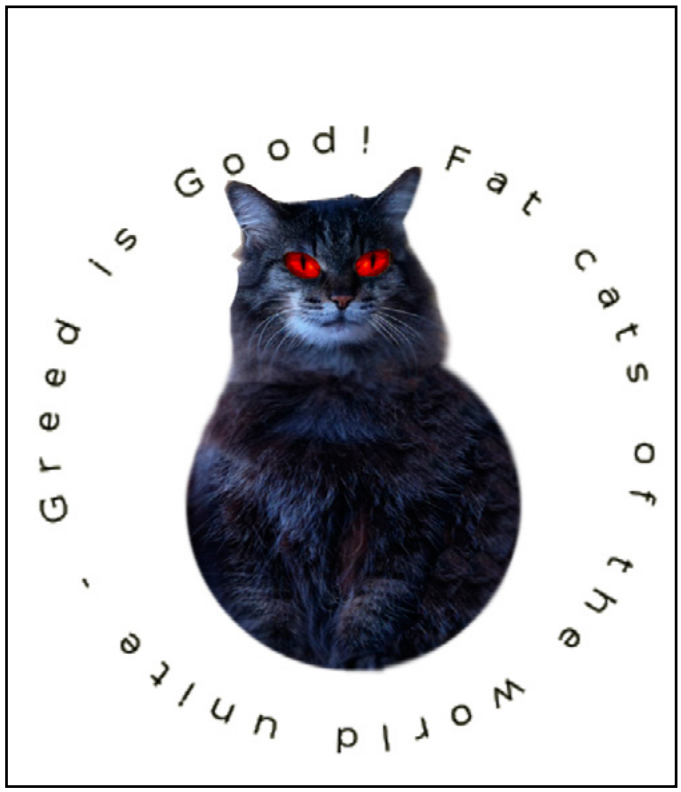
- General PC administration skills

Over the past 9 articles, we have covered pretty much all the basic and intermediate skills required to use the Gimp effectively. We will now look at some of the softer skills and additional resources to improve your graphic design capabilities.

Work-flow

Under pressure of a deadline? Not sure of the result you will achieve by applying a particular filter? While Ctrl Z will get you out of many sticky situations, saving regularly in XCF will prevent you from serious frustration. While hardware and software had improved greatly over the years, it is easy to get "drawn in" to the creative zone and when that keyboard or PC locks up a backup is essential. Remember also, that an exported image e.g. a JPG will not hold Gimp specific data such as layers etc.

If you are processing a lot of images e.g. for a website, keep a copy of the image masters in a separate directory in case you inadvertently overwrite one of the images. This is useful where you manipulate an image and find something missing or wrong in the final product. It is easy



to miss something when you are looking at it for a long time, and often these little errors will not show up until the last moment.

Tuning and customising the Gimp

Depending on the type of workload you anticipate you will be performing, you may be required to perform a number of repetitive tasks. For example, in web design, often images need to be scaled to a certain size. Gimp provides extensive hooks for key bindings that can be modified via edit → keyboard shortcuts. For instance, binding Ctrl Alt R to the scale menu item will allow the quick resizing of images to a desired size. One the size has been set, this will be repeated each time Ctrl Alt R is pressed.

Loading, importing and designing your own brushes, paths, gradients and patterns is simplicity itself, just right click in the white space in the toolbox area. You can then reuse these as desired.

There are countless additional resources on the web, deviantart.com being amongst one of the best.

Working with a design brief

Apart from getting inspiration, the most difficult part of design is getting the idea and concept out of the clients head into a format you can translate into an image or graphic. Don't be surprised if you need to have 2 or more passes until they are happy. I always start with 3 mock ups using different styles and moods to try and gauge what is required. If the client really wants orange and blue text on a green speckled polka-dot background so be it, just be thankful it is not your company logo!

Ultimately, beauty is in the eye of the beholder, and sometimes going against the grain does work. Personally, I find when I hit that "wow" moment when it just seems right (often without being able to qualify exactly why). The whole concept has to fit, culturally as well as how the message is communicated. People read different things into different images – one landing page I did for a website was approved by the communications manager and we both agreed the imagery was powerful, stunning and got the point across extremely well, while others were offended. Ultimately, you will never please 100% of the people 100% of the time. The occasional bit of controversy though is good if it raises the profile of the subject.

Writing your own Gimp plug-ins

If you are a competent C programmer, the Gimp can be easily extended with a few lines of C. For more information, see *http://developer.gimp.org/writing-a-plug-in/3/index.html*.

Automated versus manual

There is a plethora of plug-ins and filters etc. available for the Gimp, many of them mimicking the capabilities of Photoshop. However, part of the fun (and the learning experience) is developing the skill of knowing what looks good and how to make a good image outstanding. While an automated filter or plug-in may scratch that itch for instant gratification, understanding the underlying mechanics of how the image is transformed can be of great benefit.

Many of the most stunning effects are achieved by applying multiple processes and manipulating many layers and selections. Don't be afraid to experiment, keep a notepad handy of the processes you have used and how you have arrived there.

Your work environment

If you are serious about graphic design you will need a decent monitor, graphics card, a way to perform colour management and possibly a graphics tablet. Colours on a LCD display differ wildly from that on an LCD display, and colours for print appear different from those on screen. Lighting is also important, glare and fluorescent light can make it difficult if not impossible to work accurately over long periods of time.

Artwork and resources

While there is nothing new under the sun, just grabbing images off Google for graphic design purposes is considered very bad form in professional circles. Either use a professional stock agency such as Istock or material with a Creative Commons licence. Better still, take your own photographs. This is particularly important when performing graphic design for third parties, as their reputation could be at stake.

Inspiration is another matter entirely. Few artists would be narrow minded enough to complain if a particular technique is copied, and will probably look upon your endeavours as a compliment particularly if attributed. Getting inspiration is often the hardest part of design, so always be on the look out for new ideas and try to envisage how the designer has built the resulting image.

Design tutorials

If you cannot be a good example you will have to be a terrible warning. Have a look at *http://thatcaption.com/25-photoshop-fails* or Google Photoshop fails to learn from the mistakes of others. Again, it is always easy to miss something, so an extra pair of eyes is always helpful to spot glaring errors in the final proof. Be conscious though that beauty is in the eye of the beholder. For an in-depth set of tutorials on graphic design, have a look at *http://www.lynda.com/Design-training-tutorials/40-0.html*. This covers techniques such as composition, typography, colour and logo design.

And finally

I hope you have enjoyed this series on the Gimp. It is one of my most treasured Open Source programs due to its reliability, flexibility and the fact that it has never let me down. Experimentation is the key, and I hope you enjoy working with the Gimp as much as I have.

ROB SOMERVILLE

Rob Somerville has been passionate about technology since his early teens. A keen advocate of open systems since the mid-eighties, he has worked in many corporate sectors including finance, automotive, airlines, government and media in a variety of roles from technical support, system administrator, developer, systems integrator and IT manager. He has moved on from CP/M and nixie tubes but keeps a soldering iron handy just in case.

Using FreeBSD as a File Server with ZFS

Ivan Voras

The ZFS storage workshop will teach you how to create a ZFS file system from scratch and build a file server on top of it, but it will also teach you how ZFS, file systems and storage servers work in general. You will learn what ZFS looks like, its many features and quirks, and how to use it in a FreeBSD server as a building block of a small file server.

ZFS is the ground-breaking file system originally developed at Sun Inc. for their Solaris operating system. It was open-sourced as a part of their OpenSolaris initiative and from there has spread to multiple other operating systems. FreeBSD was the first one to implement a working port, and though it has taken a fairly long time of tweaking and stabilization, it is now a robust and popular choice. There are products which successfully build upon the technologies of FreeBSD and ZFS, such as FreeNAS and its related enterprise-class products from iXsystems, which automate and simplify a lot of the tasks, but all of them use the same ZFS interface under the hood, which is not that complicated in itself.

The requirements for this workshop are decent knowledge of FreeBSD, a basic familiarity with command-line operations, and a system (possibly a virtual machine) on which the student will perform the required tasks, containing at least four hard drives (physical or virtual). Since the topic of this workshop is file servers, the participants must prepare a virtual or a physical machine with at least two disk drives (and preferably 4), which which to perform the exercises and the setup from the workshop.

http://bsdmag.org/course/using-freebsd-as-a-file-server-with-zfs-2/

Ivan Voras is a FreeBSD developer and a long-time user, starting with FreeBSD 4.3 and throughout all the versions since. In real life he is a researcher, system administrator and a developer, as opportunity presents itself, with a wide range of experience from hardware hacking to cloud computing. He is currently employed at the University of Zagreb Faculty of Electrical Engineering and Eomputing and lives in Zagreb, Croatia. You can follow him on his blog in English at http://ivoras.net/blog or in Croatian at http://hrblog.ivoras.net/, as well as Google+ at https://plus.google.com/+IvanVoras.

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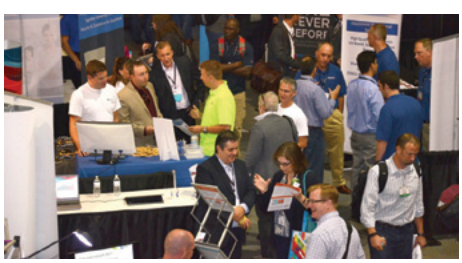

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