Autumn 2006 newsletter

Service developments

Welcome to the Autumn '06 edition of our newsletter. We have plenty of new goodies ready for you:

- Our new **remote access** technology allows you to securely connect to your office PC, and work on it as if you were there! You see your desktop, just like you usually do – except you can see it over the internet. It's fast, it works with PCs, Macs and unix systems, and it uses state-of-the-art encryption to protect your session from prying eyes. This platform enables you to telecommute from anywhere in the world.

- **Squirrelmail** is now available! Old hands may remember Squirrelmail from a few years back – it's still around and better than ever. This brings to **three** the number of webmail systems available on our servers, the others being the standard '.cc' mail system, and UebiMiau. If you'd like to upgrade to either UebiMiau or Squirrelmail, contact us.

- Our **form processing software** is now available for purchase. It has been recently upgraded and can now run on almost any webserver. This software lets you convert the data you receive from online forms into a database – in fact it captures the data directly from the form and writes it into a database on your server, which you can then download with FTP (or arrange to download automatically). With this software, you can create a survey with hundreds of questions, and effortlessly open the results in Excel, Access, or any other CSV-capable software. More information: http://www.blazingfibre.net/prodserv/formproc.htm

- A **software library** is available to each hosting customer. These are powerful tools that you can use to enhance your website, and include:

    - shopping cart
    - forum/discussion board
    - content management system
    - blogging software

  Best of all, access to the library is free! Please contact us to have your access activated.

- **Webserver upgrades** are complete, the new systems run dual-core AMD Opteron 265s with 8Gb of RAM, and oodles of ultra-reliable RAID 10 diskspace. And you thought they were fast before.

- We have launched a **feedback form** – we'd really appreciate if you took 5 minutes to zoom over to http://www.blazingfibre.net/feedback.htm and fill it out. You'll help us improve the quality of our service to you.

- Our Spring '05 newsletter suggested replacing your Microsoft applications with alternatives, in order to gain improved functionality, stability and security, often for free. We thought we should mention this can be taken to its logical conclusion, in that Windows itself can now be replaced. We recently experimented with PC-BSD, a **complete unix-based desktop system** based on FreeBSD. This software duplicates the functionality of Windows XP; XP users will instantly recognise the menu layout and taskbar, and even the bundled applications will seem eerily familiar. The graphical installer also has an XP-like feel. While

Linux and even Sun unix-based desktop systems have been available for some time, they are not FreeBSD-based. We like PC-BSD because it integrates the best "free" unix (FreeBSD) and the best "free" user interface (KDE). Notably, Apple's OSX is also based upon FreeBSD, however Apple place their own interface (Darwin) on top. OSX, however is only made for Apple hardware, and costs money. PC-BSD is free to download, and it runs on IBM-compatible hardware.

For more information: http://www.pcbsd.org/

Current promotions

Our Accounts Department have hijacked this section to note the following. Please, contact us for more information.

- Hot on the heels of our wildly-popular early-bird reward scheme comes our **e-payment reward scheme:** if your full payment is made electronically, eg., by EFT or BACS, 2.5% of the value of that invoice will be credited to your account! This is **in addition** to any early-bird credits you may also earn, meaning you can earn up to 7.5% in credits on every invoice. For full details please see http://www.blazingfibre.net/mkt/epayments.htm

- **Late payments:** We suspect this initiative may not be so popular as some of the others mentioned. **Our billing system will now debit customer accounts if an invoice is overdue.** It will do this every 30 days, at the rate of 7.5% of the value of each invoice overdue. The debits will be made against any outstanding credits the customer may have earned by way of early-bird, epayment, referral or other schemes.

- **Monthly statements:** On the 1st of each month, a summary of outstanding credits, debits and invoices is emailed to each customer.

- **Fees, rates and charges:** Our input costs are rising, but still we keep our hourly rate the same. To cover costs, the following have been adjusted:

    - **Emergency Callout Fee:** if you request our attendance on the same day you place your request, an Emergency Callout Fee of £40 may be charged.
    - **After-Hours Rate** (small businesses* exempt): if you request work be performed outside business hours (09:00-18:00 Monday-Friday, excluding public holidays), an hourly rate of £60 will be charged.
    - **Minimum Charge:** an onsite call will never cost less than one hour's labour (presently £20/hr for small businesses* and £50/hr for larger businesses).

  * for these purposes, a small business is defined as a business with three computers or less

Regulatory developments

- The **Data Protection Act** (DPA) is an important piece of legislation with which all UK-based business-owners should familiarise themselves. In essence, if your business operates a filing system which holds names – a highly likely scenario – then the Data Protection Act applies to you. The DPA defines a number of responsibilities for such businesses, including one to ensure non-disclosure of personal information. This has a number of ramifications for business systems, in particular the need to collect, store, manipulate and dispose of customer data in a secure manner. Business owners should ensure their systems are compliant with the DPA.

  For more information: http://www.informationcommissioner.gov.uk/

Security developments

- Everyone we know is reporting more spam than ever, you can get yourself a **free spam filter** for Windows here: http://www.spampal.org/

  Spampal can protect multiple email accounts, and works with all popular email software, including Evolution, Eudora, and Outlook. Spampal can even be used to protect a whole network of machines – see http://www.blazingfibre.net/prodserv/filtering.htm for more information about that.

  Spam filtering doesn't just protect you from spam – viruses and "phishbait" are also delivered via email, as are a number of trojan horses. Often, your spamfilter will flag these mails as spam, and thus reduce the chances of you being affected by them.

  See also: http://www.blazingfibre.net/tech/spampal.htm

- See the last newsletter's Tip of the Newsletter section for information on **spyware** (all our previous newsletters are available from the support page on our website).

Tip-of-the-newsletter

by Dr C. P. Yu

If you have a query you'd like to see as tip-of-the-newsletter, send it in! Contact details are at the end.

Tip #3: processing images

[This is an abridged version of "Image Processing Basics" available at http://www.blazingfibre.net/tech/imageproc.htm]

Getting an image into or out of a computer is a task that can be done well, if some care is taken; poor image quality and/or oversized images are the usual alternatives. Broadly speaking, the process to be followed when scanning an image is as follows:

1. scan the document
2. adjust the image
3. crop the image
4. resize the image
5. choose an image format
6. save the image

1. scan the document

From within Photoshop, click File.. Import.. and then select the name of the device you're using to make the scan. The exact process varies between scanners, however a window will appear allowing you to control the scanner. The essentials are basically previewing the image, selecting the area you wish to scan in detail, and setting various controls such as image resolution. These steps are broken down as follows:

preview the scan: this means, get the scanner to take a quick look at the scanning surface (the glass plate that you put your photos on) and display all of it on the screen. This is for the purposes of step 2. Click Preview to tell the scanner to start.

select the area: this means using the mouse to draw a box around the part of the previewed image that you'd like to scan. Point at the previewed image, then click and drag to make the box. When you click 'Scan', the scanner will scan in detail just that area, and send that bit to the computer.

adjust properties: this means setting such parameters as scan mode (colour, grayscale), image resolution, and scaling. These can mostly be left alone, unless you want to play - however be sure to set the image resolution to a sensible value. If you're scanning a large area at 600 dots per inch (DPI), it will consume a lot of memory. Make sure you have lots of RAM, or your machine may run slowly. Similarly, if you're scanning a

small area at 72 DPI, it will be very low quality, and detail may be lost. Find a balance between image quality and processing time that suits the end application for the image. That is, if it's for the web, the image can be done quickly at relatively low quality, while if the image is to be stored over time, perhaps a larger, higher-resolution image would be more appropriate.

press Scan:Click the button labeled 'scan'. The scanner will then scan the selected area and send the image to the scanner control window, which will in turn send it to your image processing software (such as Photoshop). You will need to wait for Photoshop to finish importing the image before you can edit it. Click cancel to close the scanner control window and return to your image processing application.

2. adjust the image

Once you have the image inside the computer, first rotate it (if necessary) so you can see it properly.

Next, check the image for defects. Are details legible? Is the contrast balanced? Is the image bright enough? If detail has been lost, rescan. If brightness, contrast or colours need adjusting, use the image processing software to do this (in Photoshop, click Image.. Adjust.. Brightness and Contrast). Sample the results of 'auto' functions such as auto-levels and auto-contrast; then tweak manually as appropriate.

If your colour photo came out all greys, you need to rescan the image, taking care to select 'RGB color' instead of 'greyscale' in the scanner control window.

3. crop the image

Cropping is the process of removing unwanted border material from the image. For example, if the photo is of three people posing together, the left, right and upper regions of the photo are likely to show the surroundings. While these can prove descriptive, they detract attention from the focus of the image, and certainly where filesize is an issue, they take up space. Extraneous image should be cropped, so as to minimise filesizes and maximise viewer experience.

4. resize the image

Before resizing, consider again the end use of the image. For what purpose are you scanning it? For posterity? Is it a quick snap for a friend? Or intended to support a business proposition? If the image needs to be good quality, consider not resizing it at all. Every retouch you do reduces the quality of the image, sometimes drastically. If the end use has exact size specificiations (say, 100x100 pixels) then resize the image to those values. If you're not sure, as a rule of thumb, a decent size for a photo is 600 pixels across; a generous size for a photo is 800 or 1024 pixels across.

5. choose an image format

Again, the end use of the image determines the appropriate format to save it in. Diagrams and line drawings are best saved as GIFs (GIF does not antialias colour variations - JPG will wreck a schematic). Saving as GIF will automatically reduce your colour depth to 8-bit (256 colours), but that's usually OK for a diagram. Photos, or other full-colour (16-bit+) images not needing to be top-quality can be saved as JPEG (which supports 24-bit colour). Any high-quality, full-colour photos or other images should be saved as TIFF (which also supports 24-bit colour).

Photos intended for ultimate saving as JPEG should be saved as TIFF, if they are to be further processed before being saved as JPEG. Each time a JPEG is saved, it throws away some data (this is known as "lossy" compression), which means repeated resaving will result in degraded image quality. TIFF, being a non-lossy format, does not have this problem - however the filesizes are much larger as a result.

6. save the image

JPEGs: adjust the quality control to suit the image. if the image is for posterity, use a higher quality, however balance this against the increased filesizes that increased quality produces. Use JPEG's lossy compression carefully; it's possible to use JPEG compression to completely mash an image. Setting it too high however will produce little or no reduction in image size; indeed JPEG compression with 100% quality will produce an image almost identical in quality to TIFF.

GIFs: to minimise filesize, adjust the number of colours downwards (this may degrade your image - keep an eye on the preview as you do it).

TIFFs: compression (LZW format) should be selected, if the option is presented. Otherwise, the final filesize is large. The compression is lossless (that is, it does not detract from image quality).

Once you've saved the image, open it with an image viewer (such as ACDSee) and check that it came out the way you intended.

tips:

- Avoid resizing the X dimension without proportionally resizing the Y dimension; doing so will produce distortion.
- Use TIFF whenever you need a perfect reproduction of your image. Use JPEG when you want to minimise disk space and transfer time.
- Avoid using GIF on images with more than 256 colours; 8-bit colour is all that GIF can handle.
- To created animated graphics, you must use GIFs. To create 24-bit animations, use Flash.
- Check the final file size of images you have saved. A JPEG that's more than 300k is likely to be excessively large in some respect. TIFFs of up to 5Mb are not uncommon, however, even with compression enabled.
- When emailing images to people, consider the transfer time at both ends (yours and theirs) and storage capacity at their end. If you send a 3Mb TIFF to your friend's Hotmail account over a 56k modem, you'll spend maybe an hour uploading it, only to have it bounce because their mailbox would overflow if your email went into it. Hotmail may even send all 3Mb back to you, meaning another hour for you, downloading the bounced message. To avoid this, don't send large images to small inboxes! :)
- Images scanned from printed material (eg, a magazine, or flyer) sometimes contain a fine patterned effect, which is visible up very close (300%). This effect looks slightly noisy to the eye, and increases filesize significantly. It is a relic of the printing process, which places dots of different colours at different places. Photoshop has a function specifically to remove it, which can be found under Filter.. Noise.. Despeckle. This filter does not need to be used if the item being scanned is a photo.
- Don't expect TIFF, GIF or JPG to compress with ZIP (or any other compression program), as they are already compressed with a good algorithm, which means that can't really be compressed any more. There's no diskspace advantage to be had zipping up a bunch of JPEGs. Sometimes the ZIP header information makes the resultant file bigger than the total size of the files it contains, in these circumstances.

the difference between TIFF and JPEG

JPG will remove information from the image that it thinks you cannot see. This is usually OK because you really can't see it; however if you intend to reuse the image (say, zoom in on a particular item, cut it out with Photoshop and resize the item really big) you will see distortion (caused by JPEG's lossy compression technique). So, TIFF is best for valuable images. The penalty for quality is size, so trade-off as appropriate. JPEG does allow the compression factor to be set; perhaps use 80% for images you value and 50% or below for an unimportant web graphic (for example). 100% is not equivalent to TIFF quality, due to antialiasing.

If you're building an image library, and you have ready access to stacks of storage space (including the same amount again for backups), then saving everything as massive TIFFs is probably the best long-term solution.

Contacting us

We'd love to hear your suggestions and comments. Our contact details are as follows:

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