

The **NEW** PCLinuxOS Magazine

Volume 32

September, 2009

PCLinuxOS rulz!

Sept '09

PCLinuxOS Magazine

- IRC: The forgotten chat frontier
- Video file format comparison
- Behind The Scenes: Neal Brooks
- Scripts-R-US: Repo Speed Test
- KDE 4.3 vs Windows 7 Comparison
- PCLinuxOS on the Acer Aspire One
- Through The Lens: Photo Management Software
- Set Up Easy Samba File Sharing

Plus More Inside!

Computer Languages A to Z: C/C++

**Wiki Wicket
Share printer w/Windows w/o Samba**

A Cheap Film Scanner

Movie Archiving

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Welcome From The Editor

Welcome to the September, 2009 issue of the **NEW PCLinuxOS Magazine**. For me, personally, it has been a very busy past month. I learned Scribus – at least I have enough of a handle on it to assist with the magazine's layout.

But enough about me. This month we have lots of material that should appeal to a large section of the PCLinuxOS community. In his continuation of his series of articles, Patrick G. Horneker reviews **photo management software** in his Through The Lens article. Andrew Huff **compares Windows 7 and KDE 4.3**, and gives us a peek at how well **PCLinuxOS runs on his Acer Aspire One netbook**. From the PCLinuxOS Gnome forum, David Lally walks us, step by step, through **setting up Samba file sharing the easy way**. In the second installment of **Behind The Scenes**, we get to learn more about **Neal Brooks** and how he met the challenge of creating PCLXDE, the PCLinuxOS LXDE remaster.

Don Crissti, from the PCLinuxOS Gnome camp, gives us the second **Scripts-R-Us** column, with a script to test the speed of the various PCLinuxOS repositories. Ms_meme turns her **Forum Foibles** attention to exploring some of the more interesting forum members' signatures, as well as offering up yet another reworked musical piece in **ms_meme's nook**. We get to learn the easy way to share a printer connected to a PCLinuxOS computer with Windows without Samba, in the **Wiki Wicket**. There's a short, yet informative, article on how to **use openssl to create secure, random passwords**. Malcolm Ripley shows us how to make an inexpensive, **home made film scanner** from parts you

may just have lying around. Malcolm also walks us through the **use of dvd::rip to create archives of your home DVD collection**.

I complete my series of articles on file format comparisons, taking a look at **video file formats** this month. I have also written an article on the grand daddy of all Internet chat software, called **IRC: The Forgotten Chat Frontier**, and walk you through setting up XChat so you can join in on the fun there. Gary Ratliff, Sr. is back, and continues his series of articles on computer programming languages, in **Computer Languages A to Z: C/C++**. Plus, Mark Szorady provides us with another installment of **Double Take**, along with a **GIMP tip** on how to work with layers.



We, the magazine staff, hope you enjoy this new issue of the **NEW PCLinuxOS Magazine**. This month's cover is by Timeth, winner of the PCLinuxOS Mascot competition with his entry of "Dobie the Bull," and commemorates that "Back To School" time of year.

To the magazine staff and all who have contributed to this month's issue, I'd like to send out a huge thank you. And, to the PCLinuxOS community, thanks for giving us the audience with your readership, and thank you to every member of the PCLinuxOS community for your contributions in making this one of the best – if not the best – Linux distribution around.

Paul Arnote [parnote]
PCLinuxOS Magazine Chief Editor

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PCLinuxOS Magazine Forum:

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Main PCLinuxOS Forum:

<http://www.pclinuxos.com/forum/index.php?board=34.0>

MyPCLinuxOS Forum:

<http://mypclinuxos.com/forum/index.php?board=157.0>



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Visit us online at <http://www.pclosmag.com>

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KDE 4.3 and Windows 7 Comparison

by Andrew Huff (athaki)

Today I'm comparing the interfaces for Windows 7 and KDE 4.3, making note of how they compare, differ and which one is best for 'Joe User'.



Windows 7

I'll start with Windows 7, which is one of the most anticipated releases for the Microsoft camp ever (especially due to the numerous bad reviews of Vista).

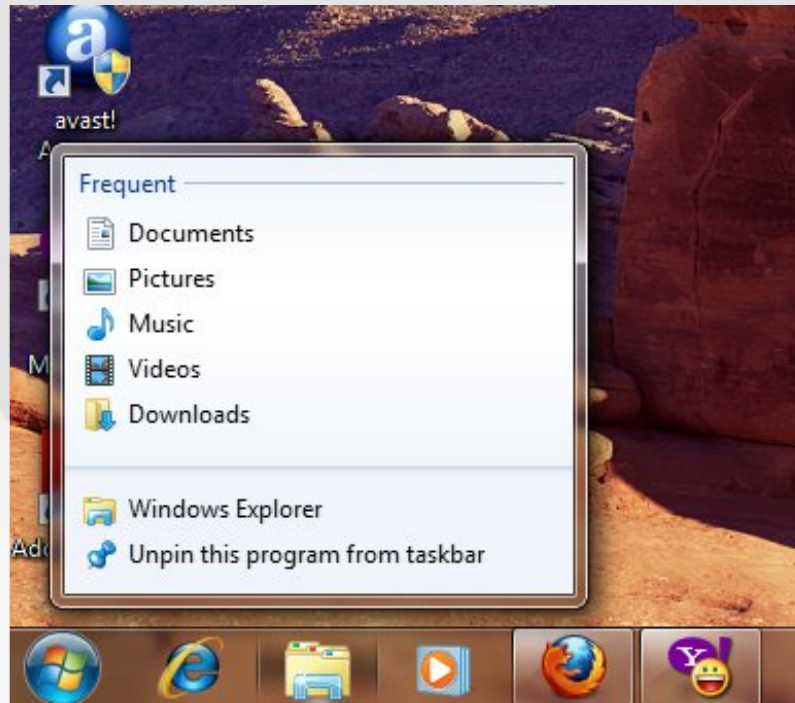
Windows 7 comes in six different versions, three of which will be available to the consumer at retail: Windows 7 Home Premium, Professional and Ultimate. Windows 7 Starter is targeting installation on netbooks, while Windows Home Basic is intended for sale only in emerging markets. The sixth version, Windows 7 Enterprise, falls right below Windows 7 Ultimate, and is intended for volume licensing.

Most users will go for the Home Premium edition, unless they are looking for specific business-related features of Windows 7 such as: connecting to a domain, operating as a Remote Desktop server, file system encryption, presentation mode and Windows XP mode (requires an additional 1 GB of memory, 15 GB hard drive space, and a processor capable of hardware virtualization). Windows 7 Ultimate will not have any of the 'Ultimate Extras' that Vista had.

In the end, if you're just going to be doing basic word processing, listening to music, watching DVD/Blue

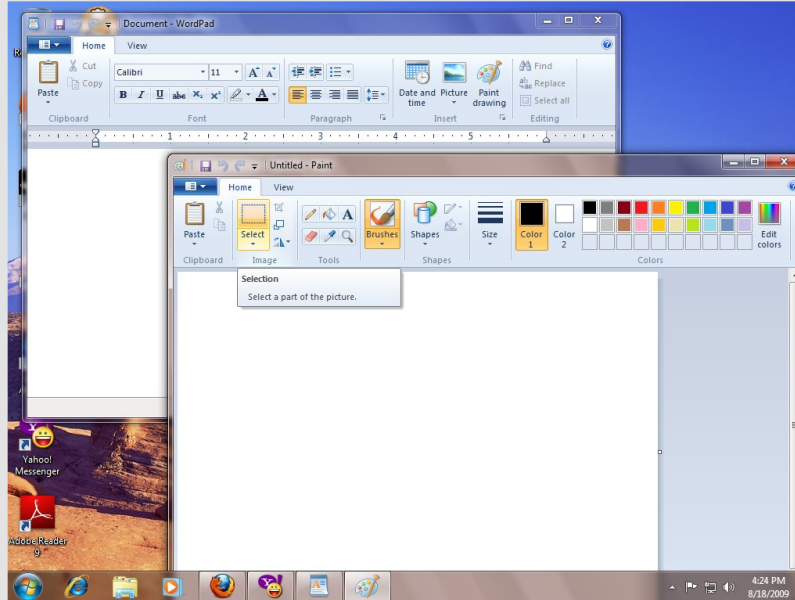
Ray/Video files and surfing the internet, Windows 7 Home Premium will be the one best suited.

Windows 7 does have a smaller initial memory footprint, and programs feel a little snappier than on Vista, but in my experience the differences were negligible from when I used Vista. User Account Control does seem less 'in your face' than in Vista. However, I'm personally so used to it that it's difficult for me to determine when it's not notifying me about something. In the interface department, the taskbar is larger (reminiscent of KDE) and when one right-clicks, one gets this nice menu:



This is nice, but how many average people would actually right click on a taskbar icon? The start menu is not too different from Vista, but it does make 'shutdown' the default option.

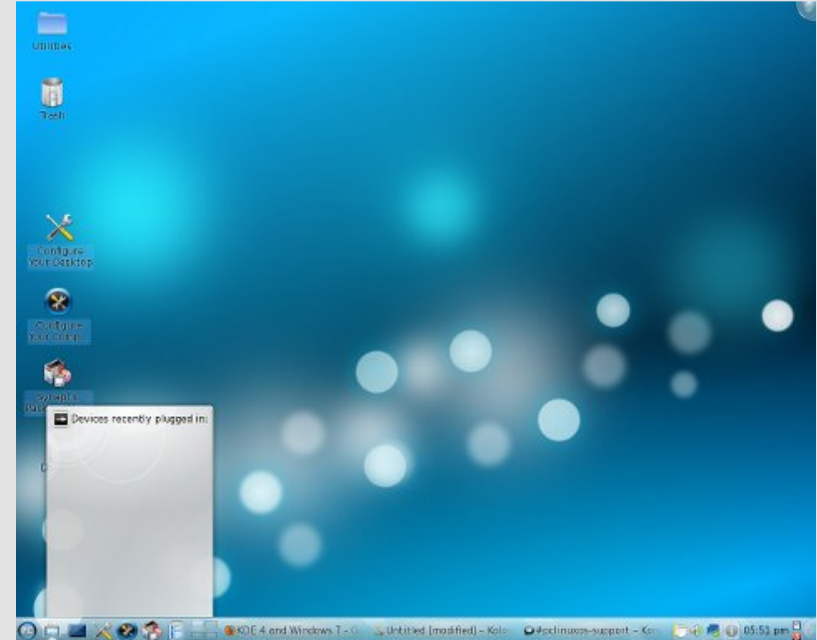
The ribbon interface has also been incorporated into Wordpad and Paint (screen shot on the following page).



Windows 7 also includes something called 'Libraries', which combines folders of your choosing into one window. For example, the documents library includes the folders 'My Documents' and 'Public Documents.' One can add folders to the default libraries (Documents, Pictures, Videos and Music) or create their own.

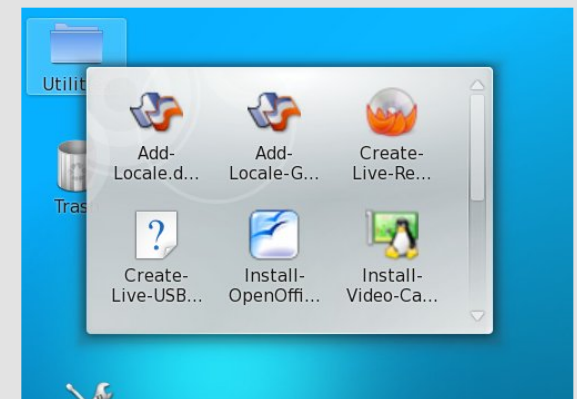
PCLinuxOS KDE 4.3

In the PCLinuxOS version of KDE 4.3, the PC menu remains mostly similar to the KDE 3.5.10 version. However, the 'factory shipped' version of KDE 4.3 comes with an empty desktop, which is similar to the default desktop of Ubuntu. KDE 4.3 has a dedicated taskbar button for any media that could be inserted into the computer. This ranges from DVD and CDs to flash media and camera cards.



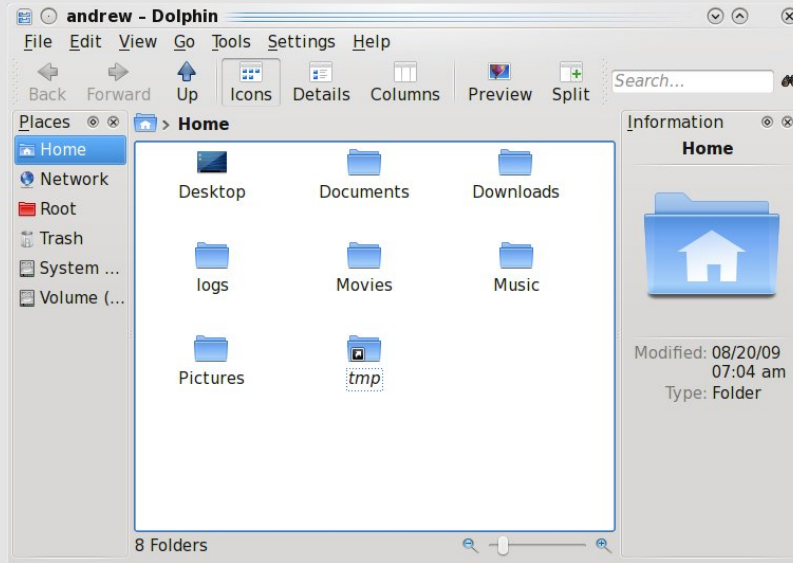
Another aspect is the folder preview option when one hovers over a folder on the desktop:

Memory use on KDE 4.3 seems rather efficient. On my 2GB RAM machine, KDE 4 is using 221MB with Firefox open, which could mean that it



could be installed successfully on computers with 256MB of RAM. Windows 7, on the other hand, has a

minimum memory requirement of 1 GB. The biggest difference for users switching from KDE 3.5 to KDE 4.3 would be getting used to the new file manager, Dolphin.



The interface is very intuitive and straightforward. It shouldn't be too big of a problem for new users to use.

So, which version should 'Joe User' install? As stated above, if they're just doing basic tasks, Windows 7 Home Premium would fit their bill. However, as we all know, PCLinuxOS is more than capable of doing those same tasks as well. PCLinuxOS also has the good fortune of being 'gratis', whereas one would have to pay at least \$119.99 US to acquire an upgrade license for Windows 7.

The full retail version of Windows 7 Home Premium will set you back \$199.99 US. Windows 7 Professional (equivalent to the Vista Business Edition) will cost

\$199.99 US for the upgrade, and \$299.99 US for the full retail version. If you opt for Windows 7 Ultimate, the upgrade version will cost \$219.99 US, and the full retail version will run you \$319.99 US. Microsoft has offered heavily discounted "pre-orders" of Windows 7 Upgrade, allowing Windows XP and Windows Vista users to upgrade to Windows 7 Home Premium for \$49.99 US, and to Windows 7 Professional for only \$99.99 US.

It's also important to keep in mind that these prices reflect only the price of the operating system. Under a Windows operating system, you still have to pay for the applications that make you productive. Running PCLinuxOS on your computer gives you not only the operating system free of charge, but also free access to all of the more than 11,000 programs in the PCLinuxOS repository.

Aside from the cost, Windows 7 has much "loftier" hardware requirements. The 32-bit version of Windows 7 requires 1 GB of memory, a video card with a minimum of 128 MB of memory, and 16 GB of hard drive space. The 64-bit version of Windows 7 requires double the memory (2 GB) and 20 GB of hard drive space. Contrast this to KDE 4.3, which requires only 4 GB of hard drive space, and will run on a computer with as little as 256 MB of memory, although 512 MB of memory and 10 GB of hard drive space are recommended.

So there you have it – a comparison of KDE 4.3 and Windows 7. Where do you want to go today?

Sharing A Printer To Windows ... WITHOUT SAMBA

The PCLinuxOS Wiki is currently undergoing a "from-the-ground-up" reorganization and rebuild, and they are seeking members of the community to assist with the task. If you would like to help, go on over to the Wiki site and sign up! Meanwhile, during this rebuilding period, I'd like to share one of my favorite Wiki finds from the "old Wiki," that I saved from digital oblivion some time ago that works exceptionally well with the current version of PCLinuxOS. - Paul Arnote, PCLinuxOS Magazine Chief Editor

Sharing a printer with a Windows box usually requires Samba. In this tutorial, I will show you how to do it, without.

On your PCLinuxOS Print Server

1. Install your printer normally, using the PCLinuxOS Control Center.
2. Make sure CUPS in PCC » System » Configure system services is set to start on boot.
3. Open the KDE Control Center, and browse for Peripherals » Printers.
4. Activate Administrator Mode, and go to Print Server » Configure Print Server » Browsing » Browsing Addresses.

5. Click Add, and set the type to Allow. Enter the range of your network computers. You can enter a wildcard mask into the first box, like 192.168.1.*.

6. Go to Print Server » Restart print server to restart everything and apply your new changes.

On your Windows clients

1. Control Panel » Printers and Faxes » Add Printer » Network Printer

2. Enter the url as
`http://yourprintserversname:631/printers/printername.`

"yourprintserversname" is the address of the computer your printer is attached to (e.g., 192.168.1.100).
"printername" is the name you call the printer in CUPS (e.g., HP_LASERJET_P1006).

You should now have a wonderful Samba-less printer now!

I do not know who the original author is, but this has made my life very easy, allowing me to set up my wife's WinXP laptop to be able to print to my HP LaserJet P1006, attached to my PCLinuxOS desktop system. And it works perfectly, every time.

One consideration to make is to make the IP address of the computer that has the printer attached a static IP

address. This way, the address doesn't change or get reassigned by the router.

Do you have a favorite tip, trick, or technique that belongs in the Wiki? Do you have a favorite Wiki "find"

that has saved you time and work? If so, send them along to the PCLinuxOS Magazine staff. The "PCLinuxOS Wiki Wicket" is planned as a regular feature of the PCLinuxOS Magazine, featuring a new item from the PCLinuxOS Wiki in each issue.

Create Secure Passwords With openssl

If you have ever had to attempt to create a secure password, you may have undoubtedly tried to join together phrases, words and numbers in a seemingly random manner. We've all done it. But did you know that the ability to create secure passwords is no further away than the command line?

Enter the following at a command line prompt in terminal:

```
openssl rand -base64 6
```

This will create an eight character password, comprised of 6 random bits of base64-encoded data. Would you like a randomly generated 16 character password? Enter the following at the command line prompt in terminal:

```
openssl rand -base64 12
```

When we send random data through the base64 encoding process, the output string length will always be a multiple of four. If there isn't enough random data, "=" will be added to the end of the string to pad it out until the string length is a multiple of four.

So then, what do we do if we want to generate a random 25 character string to use as a WPA key? We will have to chop it off ourselves. Enter the following at the command line prompt in terminal:

```
openssl rand -base64 25 | cut -c1-25
```

Be sure to record your newly generated password in a secure place, should you ever forget it. With the number of possibilities, it's astronomically unlikely that you will generate the same password again.

You may also add redirection to the end of the above commands, to save your new password into a file, which can (should) be moved to a secure folder on your computer.

For example, `openssl rand -base64 6 >pass8` will save the generated password into a file, named "pass8." You can name the file whatever you like -- just be sure to move it to the secure folder, to keep it from "prying eyes." After all, there is nothing quite like forgetting your old passwords.

Through The Lens: Photo Management Software

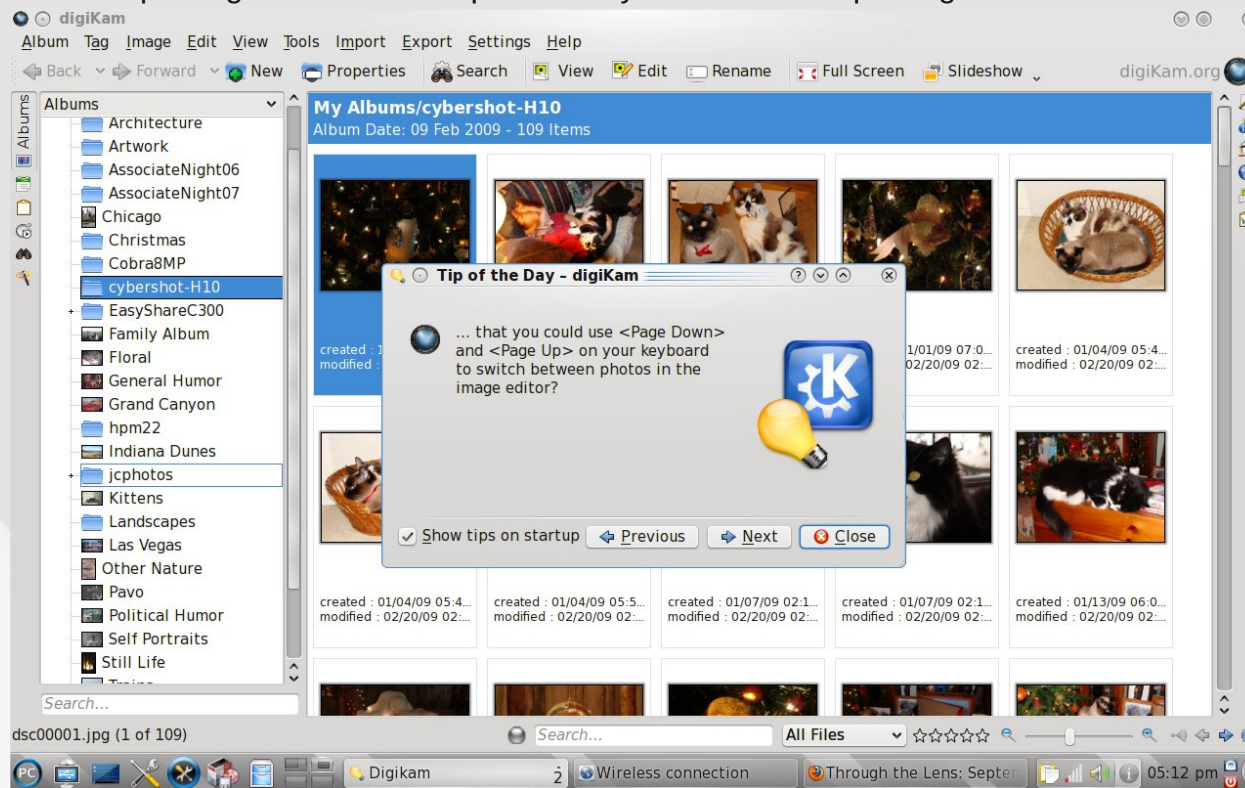
by Patrick G Horneker

If you are like me and have a large collection of photographs, you will need software to organize your collections. PCLinuxOS has several pieces of software to accomplish this task. The two most popular packages in this category are DigiKam for KDE, and F-Spot for GNOME. There are more software packages that can be installed from Synaptic such as Google Picasa, flphoto, and feh. In addition, if you have Wine installed, you can install some photo management software packages for Windows provided by various

photofinishers on CD-Rs that you get with film photofinishing orders.

DigiKam

This is my absolute favorite photo management application, and it is a part of PCLinuxOS 2009.1 KDE edition. (If you are not running the KDE edition of PCLinuxOS, you will need to launch Synaptic, then download and install the digikam package. The package is found in the Graphics section.)



If you have upgraded to KDE4 by installing the task-kde4 package, you will need to reinstall DigiKam as the older KDE3 application was removed at the time of upgrading. The KDE4 version of DigiKam is now in the Graphics Desktop/KDE4 section.

Note: Though DigiKam was designed to be used with KDE, it can run under any window manager. If you choose to run DigiKam outside of KDE, keep in mind that

DigiKam on KDE 3.5.10

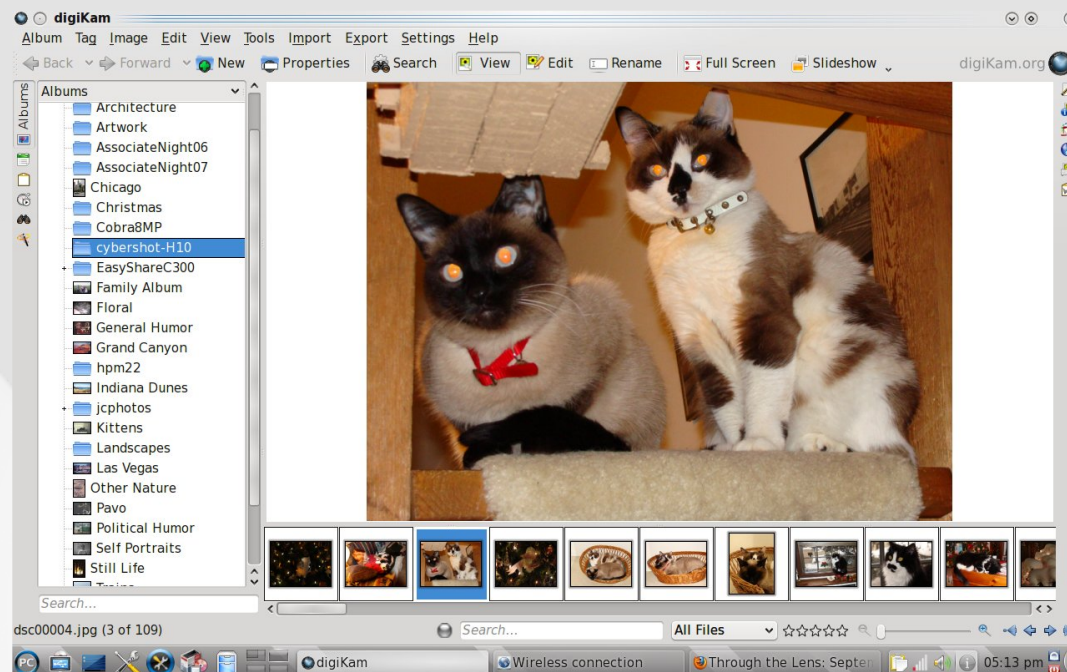
the basic KDE libraries will need to load before DigiKam is launched, hence increasing the time needed for DigiKam to load.

When you launch DigiKam the first time, you will be asked for a directory where your photograph collection is stored. By default, it is the Pictures directory in your home directory, for example /home/patrick/Pictures on my laptop. DigiKam will then build a database of thumbnails for each photograph you have in that directory, and any subdirectories contained within that directory. Next, a set of plugins will load providing the many great features of this photo management application. Finally, the main application window opens up as shown here.

What you see here is toolbars at each edge of the application window, then a layout similar to what you would find in Nautilus or Konqueror (running as a file manager rather than a web browser). In fact, DigiKam is really a the Konqueror browser adapted for photo management.

The version I am running is Version 1.0.0 of DigiKam for KDE4. The Tip of the Day window appears on the screen, and the home directory appears in the sidebar instead of the Pictures directory as in the KDE3 version.

When you click on a folder, a dynamically generated HTML page containing the thumbnails of photographs in that folder appears in the window.



This example shows images taken with my Cybershot DSC-H10 camera. (The EasyShare C300, hpm22 and Cobra8MP refers to the Kodak EasyShare C300, Hewlett-Packard PhotoSmart M22, and the Cobra 8 Megapixel cameras.)

Note: In the case of the Cobra, this was known as the Black Friday special, as it was typically available as a big bargain on Black Friday, the largest sales day of any retail business in the US, and is always the day after Thanksgiving. Black Friday

DigiKam on KDE 4.3

is the official beginning of the holiday season in the retail business, and massive crowds build up at stores nationwide as early as two in the morning on that day to get the best bargains at the start of the holiday shopping season.

Cameras like these are typical bargains at that time of the year.

What's New with the KDE4 version of DigiKam

Version 1.0.0 now shows a filmstrip inside the application window below the image that you wish to see a larger view. This allows you to scroll through your photographs without having to return to the multiple thumbnail view first to look at the next photograph. This feature was first implemented with F-Spot, which will be discussed next.

You can put on a slideshow this way, and there is a new toolbar under the application menu that allows for this to happen.

In the last issue, I discussed the Kooka scanning application. From the Import menu, you can launch Kooka to scan images directly to DigiKam. The menu also allows you to import images from any camera supported by the gphoto suite. If your camera communicates with your PCLinuxOS machine as a USB Mass Storage device, that device will automatically appear in the Import menu.

The Export menu allows you to create CD or DVD archives of your photograph collection, create web

galleries of your photographs, export to Flickr or PicasaWeb, or simply copy images to another directory on your hard drive for further processing.

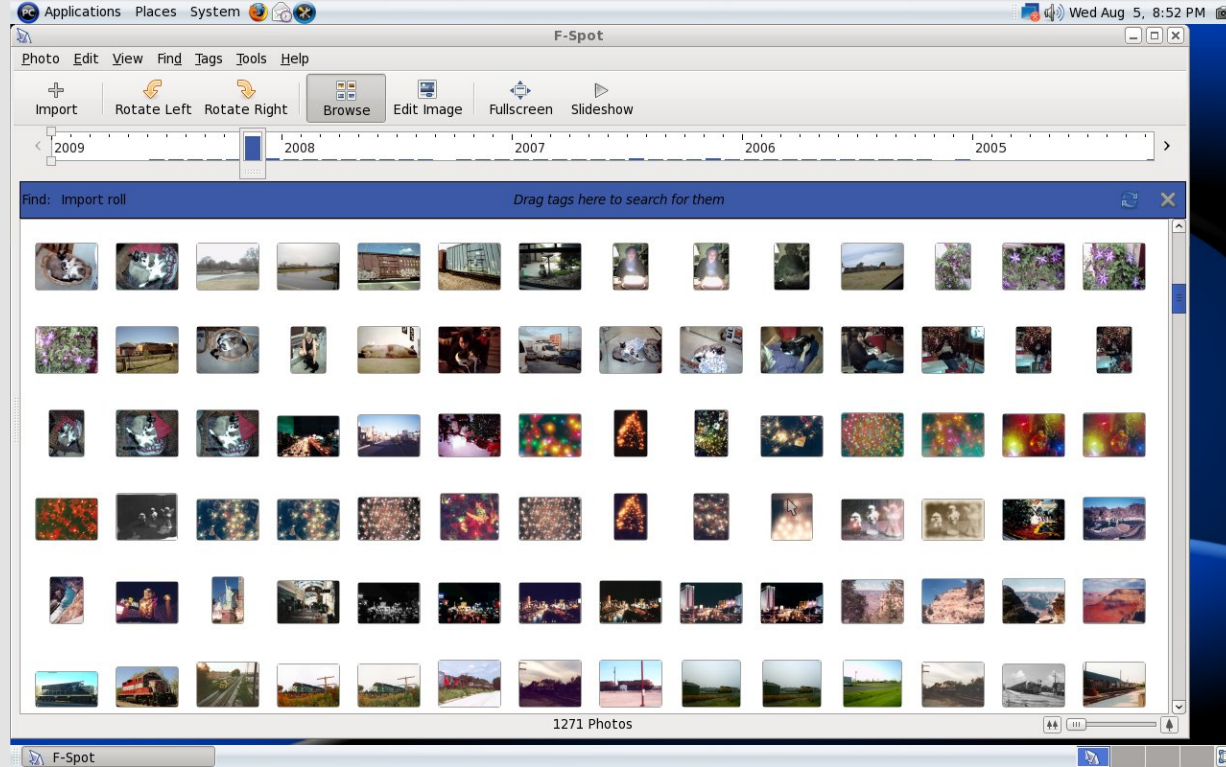
F-Spot

This is the other major photo management application for PCLinuxOS. This application is included with PCLinuxOS GNOME edition. If you are running any other edition of PCLinuxOS, you will need to launch Synaptic and download f-spot from the Graphics section. Since this application was written in C#, the Mono project and its dependencies will also be installed, and hence this will be a lengthy download (unless you have a really fast broadband connection to the Internet).

F-Spot was written for the GNOME desktop and runs best under GNOME. When you first run F-Spot, you will be prompted to select a directory where your photographs are stored.

F-Spot stores its database in Photos on your home directory. If you store your collection in the Pictures directory as I do, you would want to click on Select Folder, then choose Pictures, click on OK, and your pictures will be imported to F-Spot.

When F-Spot is finished, you will see thumbnails of the images that have been imported. Click on Import to build the database.



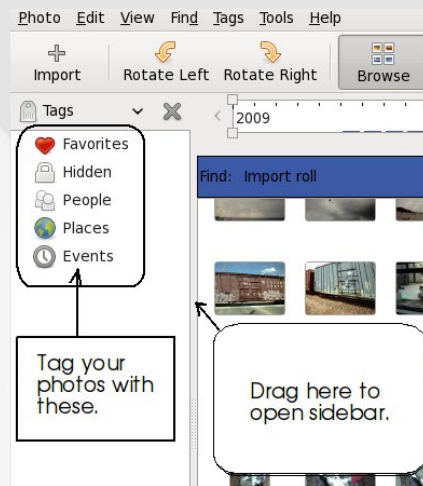
drag out the sidebar.

F-Spot provides a timeline and a search bar. The sidebar works after your photographs have been tagged. The sidebar provides the tags you can use, or you can create your own tags.

The easiest way to tag photographs is to select images, right click on the selection, then select the tags you want from the popup menu.

Once images have been tagged, you can then drag the tags from the sidebar to

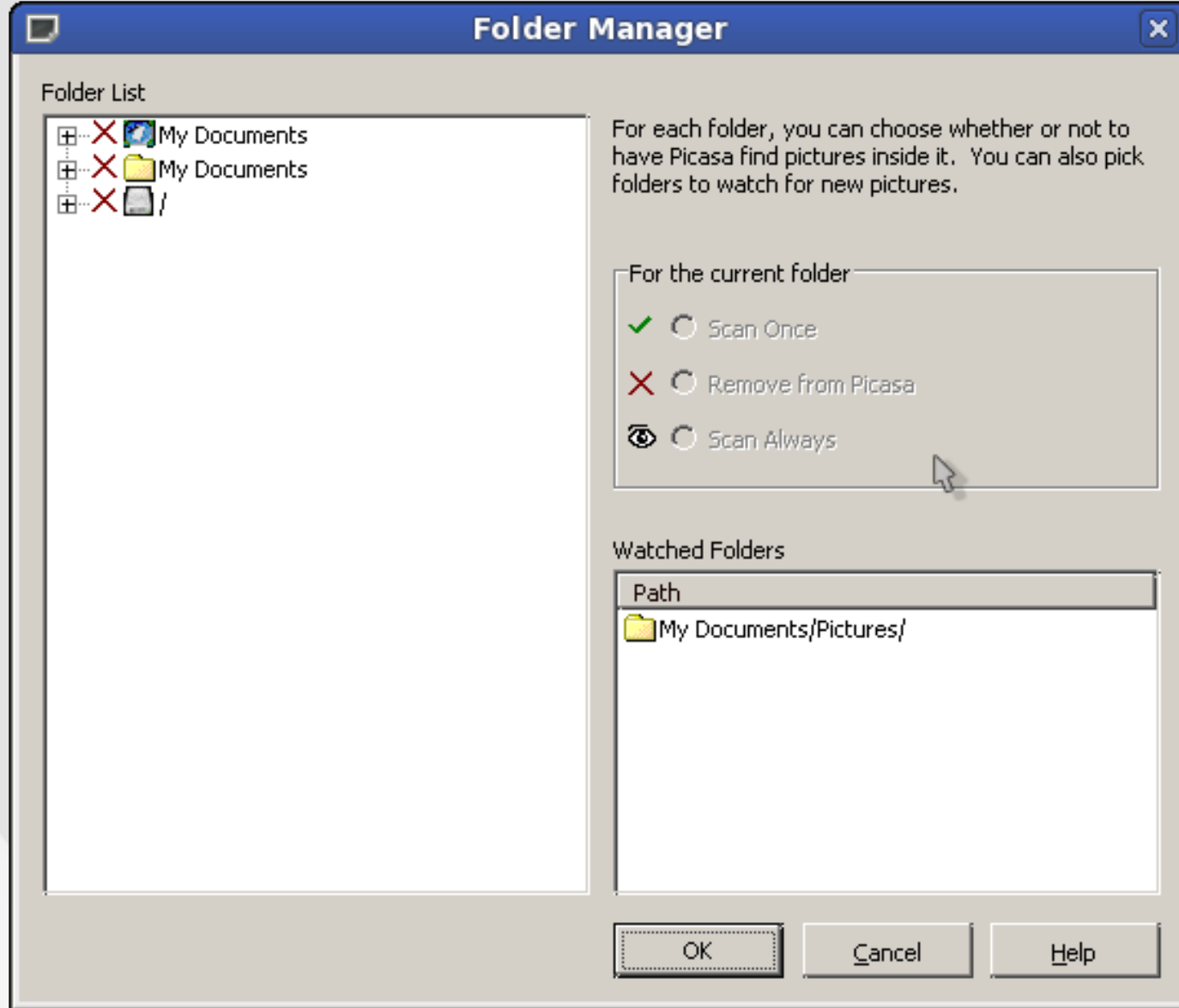
F-Spot on PCLinuxOS Gnome 2009



the search bar to display only images that have been tagged with the tag you have dragged to the search bar.

There is a sidebar in the application. To access this, move the mouse to the left side of the application window, with the mouse pointer inside the window, wait for the cursor to change to horizontal arrows, then

Like DigiKam, F-Spot has export options that allow you to create web galleries and post to Flickr. Unlike DigiKam, the tagging system is more suitable to photograph organization. F-Spot also has version tracking, where if you modify the image in any way with F-Spot, you can save and recall multiple versions of the same image.



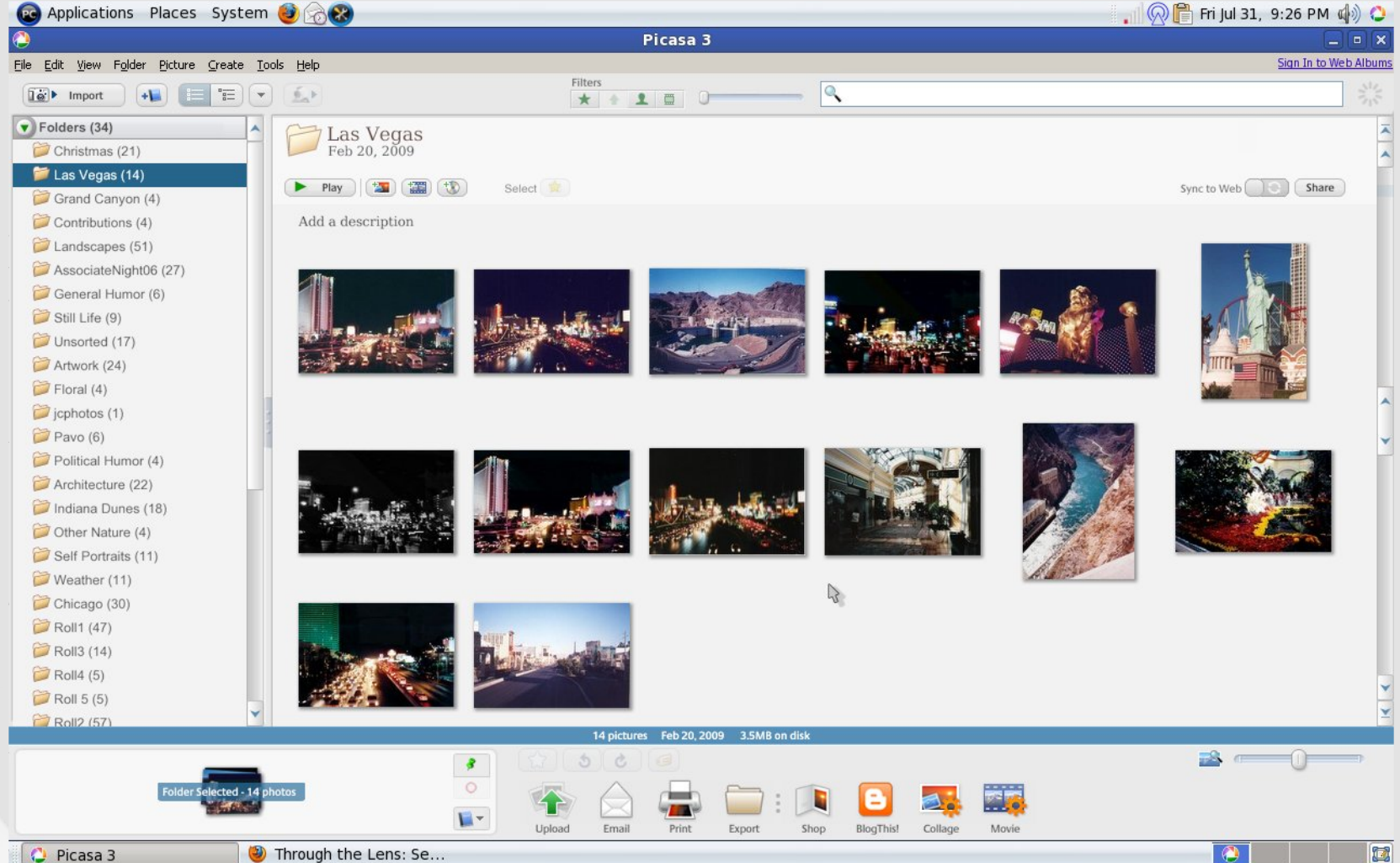
Google Picasa

This is Google's software package for organizing of photographs, and was designed to be used with PicasaWeb, Google's photo sharing service. You can install this package from Synaptic. It can be found under the Applications/Graphics section.

When you first run Picasa, it will start scanning the entire contents of your home directory. This means all of your documents,

Google Picasa Folder Manager

music files, downloads, and everything else will be



Google Picasa 3 running on PCLinuxOS

Like DigiKam, you get a listing of folders on the left sidebar, and the thumbnails of all the images your collection. As you scroll up and down the thumbnail, the header changes showing which folder you are now

will be used to create new folders at PicasaWeb. Once you click on Upload, you will be prompted to login with your Google account before the uploading process begins.

Once you start uploading your images, a window will open showing the progress of your uploads. You will want to click on the checkbox labelled Don't eat all my bandwidth, especially if you want to do other things while your photographs are being uploaded.

Once you have your photographs uploaded to PicasaWeb, you will be able to share them and order prints and gifts made from them.

Note: You can also use DigiKam with PicasaWeb.



Ordering screen on Picasa 3

While running DigiKam, select Export to Picasaweb from the Export menu.

Setup Picasa to Enable Ordering

There is a bug in the current version of Picasa that prevents you from accessing the online shop. The solution to this problem can be found at the support forum for the Picasa package. To fix this, you will need to login as root (to be able to make changes to the file not in the user account), open a text editor and load this file:

```
/opt/google/picasa/3.0/wine/drive_c/Program\
Files/Google/Picasa3/runtime/defaults.ini
```

(You may or may not need to include the backslash depending on which editor you use to open this file.)

then you will need to change the line containing printerURL, which is showing an incorrect URL, resulting in a blank window opening up instead of the photo ordering page. The corrected defaults.ini should read as follows:

```
[LifeScapeUpdater]
versionFileURL=http://updates.picasoftware.com/pica
sa2/wine/currentversion.ini
readmeURL=http://readme.picasa.com/wine/
printerURL=https://client4.google.com/providers/printers
.html
```

```
[Track]
name=wine
```

The highlighted line shows the correct URL for ordering of prints from your photographs. Once this is fixed, clicking on Shop will yield the screen on the previous page.

Note that you really have freedom of choice here.

There are sixteen different vendors for which you can submit print orders. Walgreens and CVS are two of those choices, and they provide their own ordering software in addition to what you can order from Picasa.

Note on Photofinishing Retailers

Walgreens, CVS, and Wal-Mart allow you to order online and then pick up your prints at a nearby store in one hour. This of course, brings out the utmost convenience when it comes to digital photography, provided that you have a store nearby where you live.

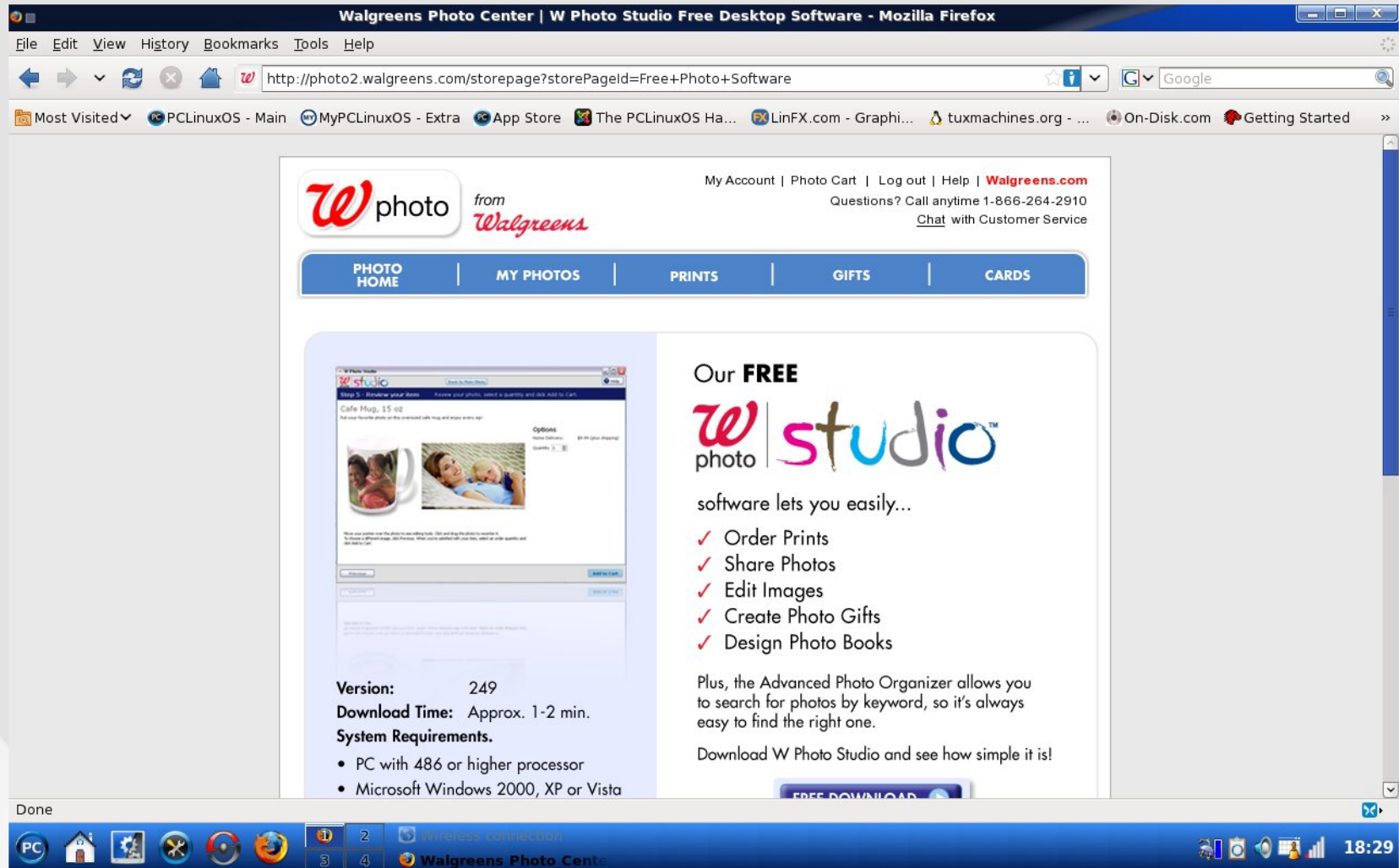
W Photo Studio (Walgreens)

This photo management is a Windows application that runs on PCLinuxOS with Wine installed, and was designed to be used with the WPhoto.com photofinishing services. (WPhoto.com is a microsite for the Walgreens drug store chain providing digital photofinishing services.)

There are two ways to get this software. The first is to order a CD-R for a nominal fee added to your film

photofinishing order. The second is to download the software from Wphoto.com.

This is a 84.7MB download, so a fast internet connection is recommended.



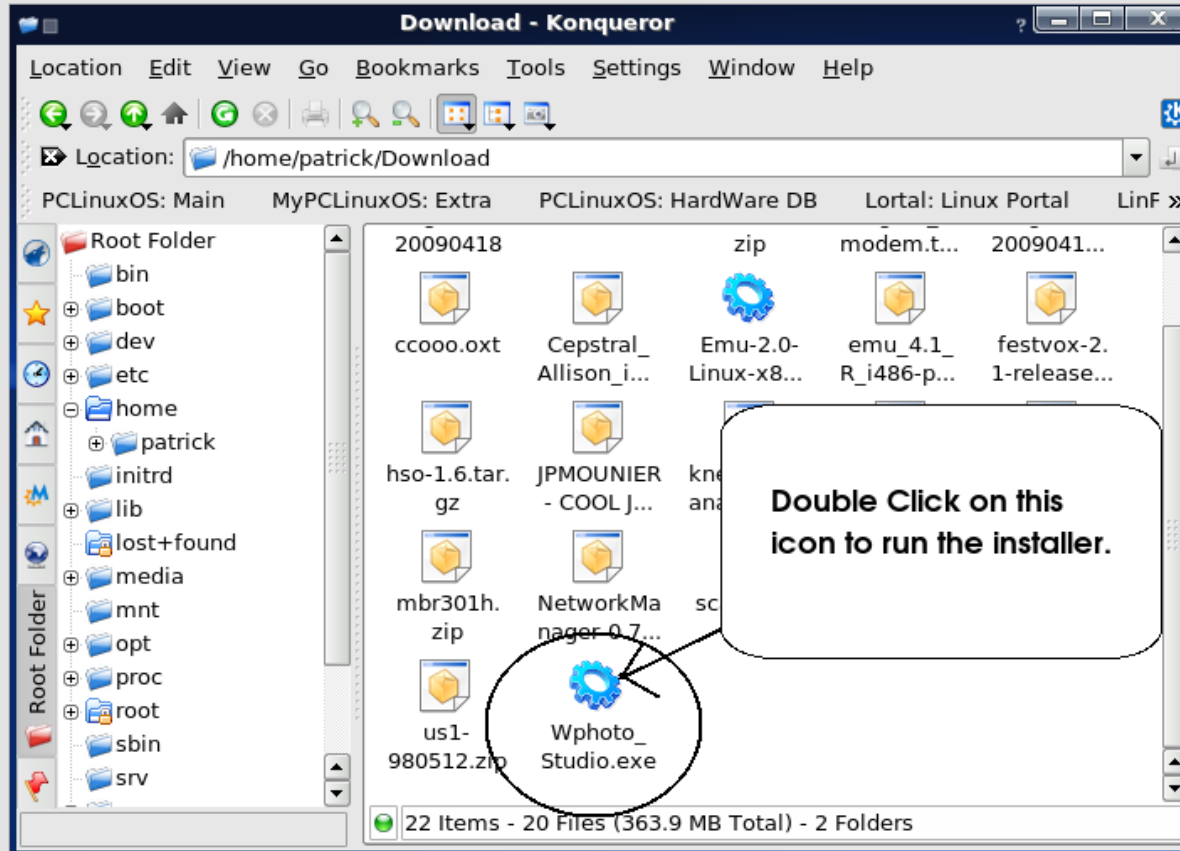
WPhoto running in Wine on PCLinuxOS

I recommend downloading from Wphoto.com to be sure you get the latest version of W Photo Studio.

If you do not have Wine installed, you will need to launch Synaptic and download wine-dev (and its

dependencies) from the Emulators section. The wine-dev package contains the latest version of Wine.

If you are installing from a CD-R you received with your film photofinishing order, you will need to double click on photoappsetup.exe to install W Photo Studio.



The WPhoto software installer in Konqueror

If you downloaded the package, create an empty directory (or use a directory you allocated for downloads) and drag the downloaded file to that directory, then double click on Wphoto_Studio.exe to launch the installer.

Just follow the instructions on the installer, agree to the license agreement (this is not free software), and let the installer do the work. An icon will appear on your desktop (if you are running KDE or GNOME), and you will be able to launch W Photo Studio from PCLinuxOS.

When you launch W Photo Studio, the screen here is what you will see. As this is a Windows application not all functionality is guaranteed under PCLinuxOS. This depends upon the current functionality of the Wine package. On my PCLinuxOS

machine, I have the latest version of Wine installed.

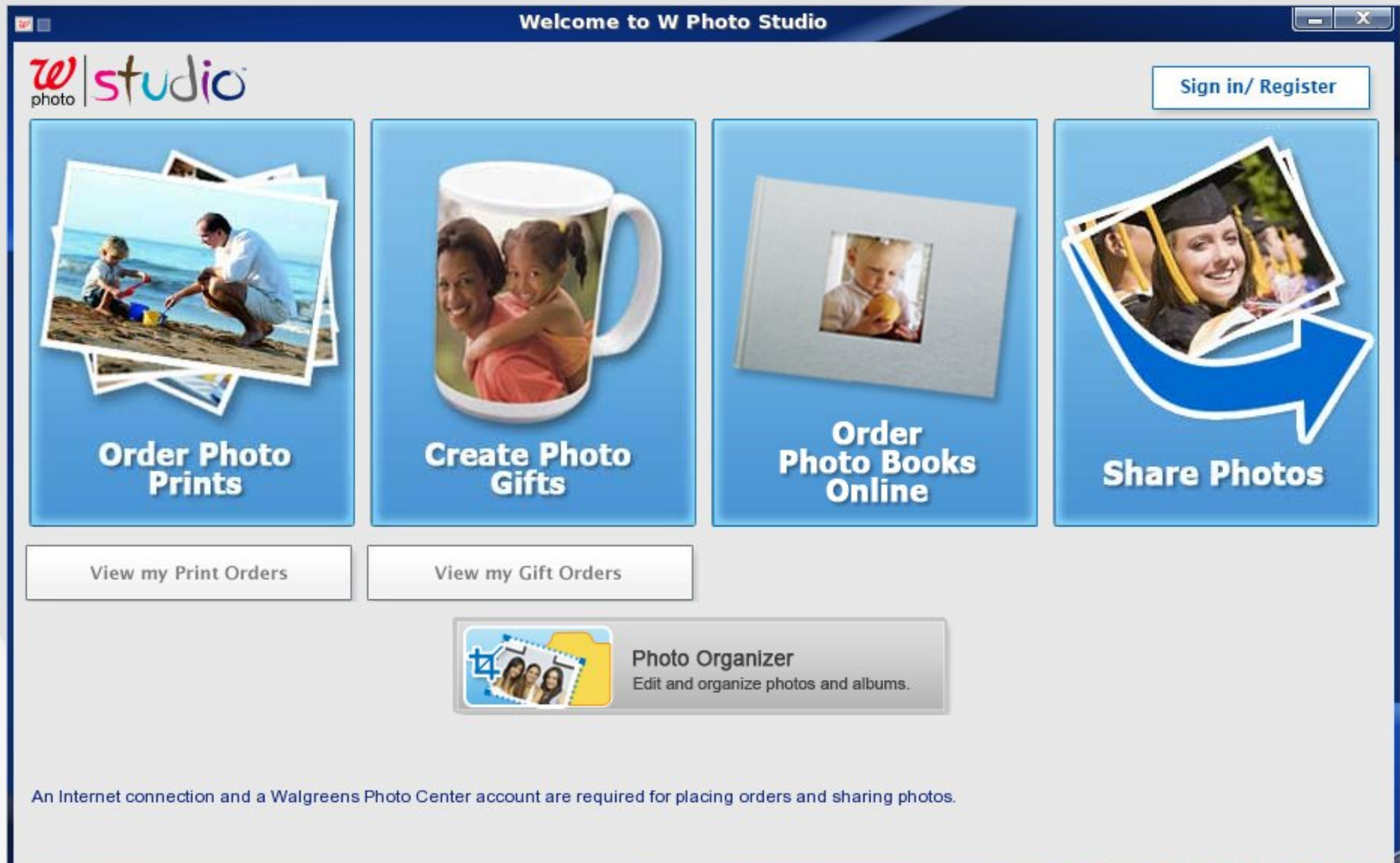
W Photo Studio comes with some specialized DLL files (Windows libraries) that launch Internet Explorer and take you to WPhoto.com. Since we are running this on PCLinuxOS, the four options that are shown on the screen may not work as the Internet Explorer

functionality implemented with Wine does not support the specialized DLL files.

However, the Photo Organizer near the bottom of this window does function as expected. This button launches the actual photograph organizing application.

When you launch Photo Organizer for the first time, it will attempt to search your hard drive for photographs.

The drive letter used depends upon how you configured Wine. On my PCLinuxOS system, Photo Organizer uses drive E, which is configured to use my home directory.



WPhoto Welcome screen on PCLinuxOS

Since Windows applications were designed to work with the NTFS, FAT16 and FAT32 file systems, of course it will crash when it comes across the ext3, ext4 or other non-Microsoft file system. To prevent this, click on Stop Search to close the window.

The screen you see here is what you get upon first launch.

Click on Switch to Folders View to access your home directory. The gallery you see will update to display all images found in the current directory.

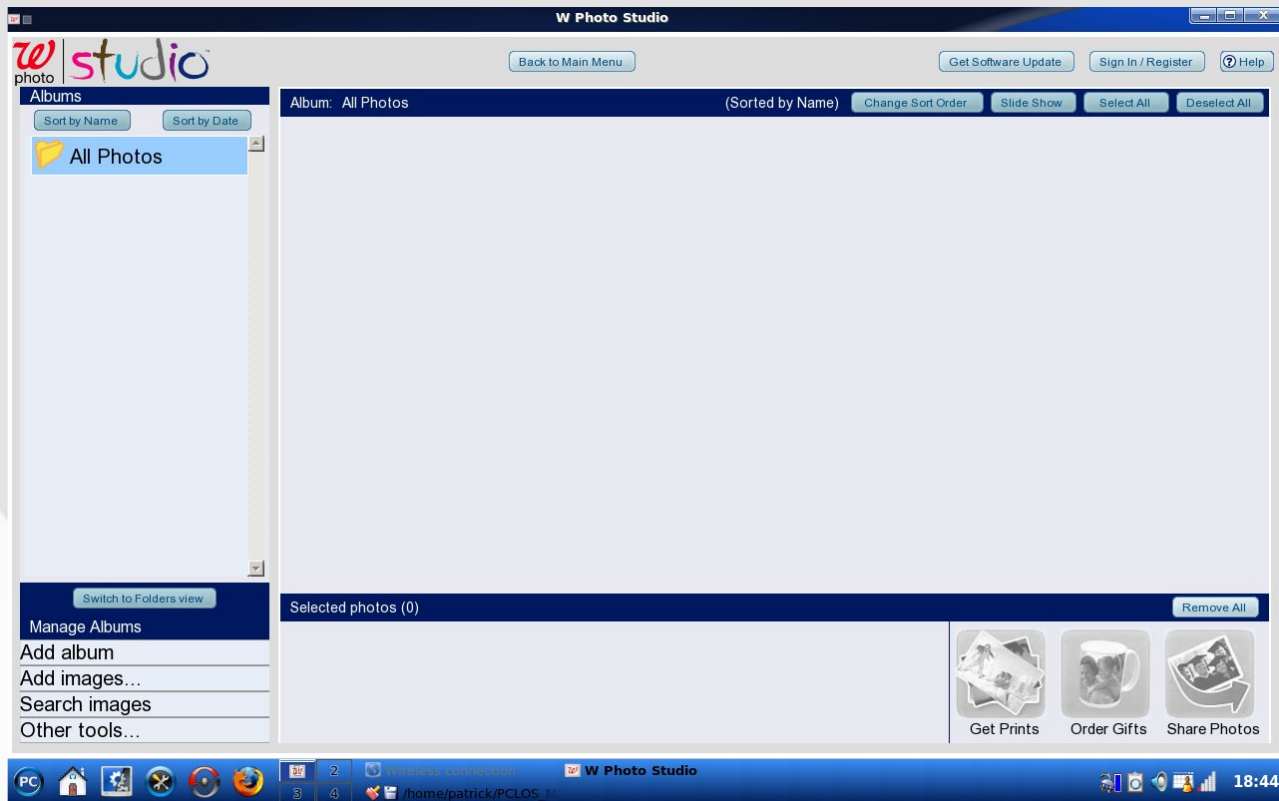
If you have ever been in a Walgreens drug store in the US, this software has the same functionality as the WPhoto kiosks in their photofinishing department.

Now the bad news. The online functionality relies on specialized DLL files, which may or may not work with the current version of WINE that comes with PCLinuxOS. To this date, I have not tested this functionality.

To get around this, you can launch any web browser, and log in to WPhoto.com. There you can upload your

photographs, select your images to order and place your order there.

In short, W Photo Studio is a rudimentary program for organization of photographs, but not much else. You would be better off using a native Linux package such as DigiKam or F-Spot, then launching a web browser to upload and order printed photographs from your favorite photofinisher.



WPhoto Photo Gallery screen

Walgreens provides an online version of the software where you can organize your photographs, and you can use Firefox, Opera, or other compatible browser from PCLinuxOS.

CVS/Caremark

Rival chain CVS Pharmacy provides a online storage and photo organization tool on their photofinishing microsite. Their software package is a branded version of Corel Photo Album, with functionality for uploading to their microsite.

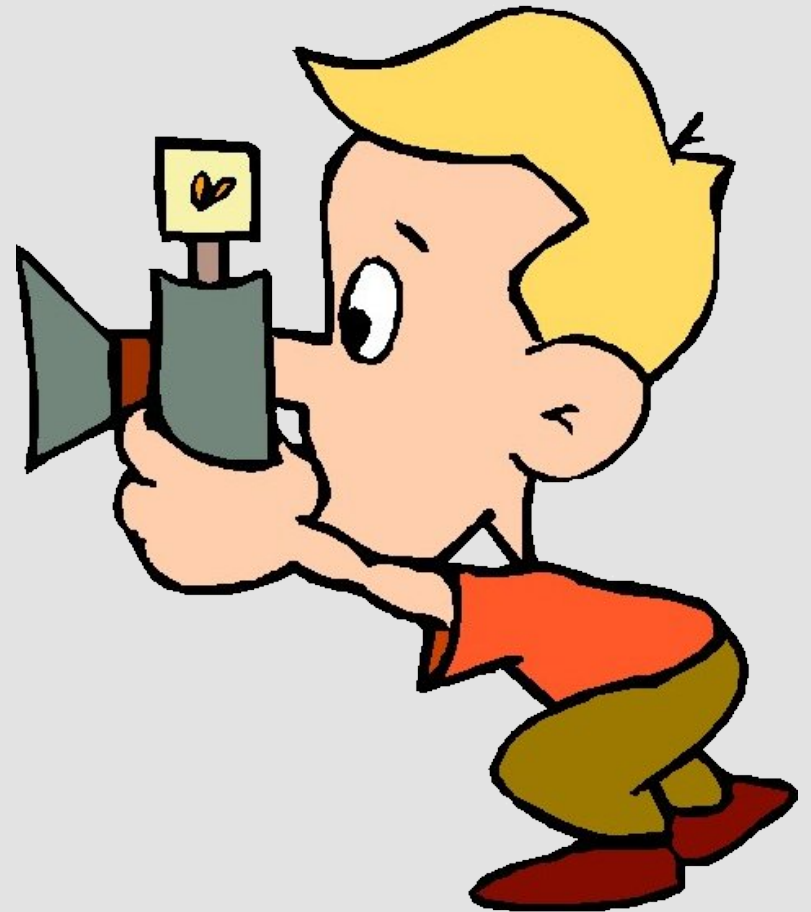
Corel Photo Album 6

I got a copy of Corel Photo Album 6 when I purchased a Lexar memory card for my Cybershot. I decided to give this package a try. The installer launches, but I was unable to get past the License Agreement as that part of the installer would not let me click on the Next button after I scrolled down to the bottom of the License Agreement. I am not sure if this is a bug in Wine or a bug in the installer. Since I was not able to get past this screen, I cannot say whether this application will work on PCLinuxOS or not.

Meijer Photo/Snapfish

Meijer has been one of my favorite places to shop offline for most anything. Their digital photofinishing services utilizes Snapfish, the digital photofinishing

division of Hewlett-Packard. Their stores feature kiosks equipped with Hewlett-Packard hardware, including a ScanJet scanner. Snapfish has online photograph storage and organization. Fortunately, for us PCLinuxOS users, according to Snapfish, you can use Firefox to upload photographs to the Snapfish site, despite the fact that only Internet Explorer is mentioned in their FAQ list.



Easy Samba File Sharing Set Up

by David Lilly ([sarcastic_bastard on linuxgator.org](#))

Ok, we seem to have a few people asking this one, and rather than me keep repeating it (even I get tired of repeating the same thing 300 times), I figured it might be an idea to throw up something a little straight forward for you lot. This method will enable you to set up Samba Shares (similar to windows file-sharing over a network) without needing to use passwords. But there's nothing stopping you setting it up with passwords either. It's just that I'm sure most folk would like simple file-sharing enabled in their home network, for ease of use. Either way, the basics are the same.

Now, I've found myself doing this in 2 slightly different methods before in the past, both achieving the same result. But one requires an extra step, but for a reason. Bear with me here.

It's a good idea to make sure all needed Samba packages are installed first, so open up Synaptic (your package manager), and ensure Samba Client and Samba Server are installed.

Now, the straight-forward method is as follows. Go up top to System, then Administration, then Configure Your Computer (**PCLinuxOS Control Center**). I usually select to "Add This Launcher to panel", since it saves time later when you want it. In here, select **Network and Internet**, then **Manage Hosts Definitions**. By default, mine (and yours) will show an IP Address of 127.0.0.1, and a hostname of localhost. This always gave me grief when trying to set up Samba, until I worked out I needed to change this. Either double-click

on the line with 127.0.0.1, or click on it and select Modify on the right. Same result either way. Leave the IP Address bit alone, but where it says Host Name, change it to something you would like your PC to be seen as on the Network (there's a little more to it, but this is just simpler), such as Bob, Truck, Matt's PC, etc. Give it a distinctive name. This is what it will show up as on the network when connected and sharing with other PCs. Mine is named Xero. Then, when you've done that, and before closing it off, write "localhost" in the line below, where it says "host aliases". Click OK, and now you will see your PC with it's new name, and localhost off to the right where there was nothing. Click OK at the bottom again, and close off so that you are back at the PCLinuxOS Control Center again.

Down the left hand side again, choose **Sharing** from the top, then **Set Up A File And Print Server**. If Samba is not already installed it will prompt to, and install itself. Next, it will walk you through the configuration. Unless you need something more than basic, such as working with a domain (which I know nothing about anyway, so we'll leave that), choose Standalone at the bottom, and click next.

Now, you need to select the Workgroup name. All the PCs in the network must share the same workgroup to see each other properly. By default, Microsoft OS's usually choose either MSHOME or WORKGROUP as the workgroup, so if you are expecting to connect with Windows PCs now, or later, this is where to change it. If all the PCs are just running PCLinuxOS, or Mandriva

for that matter, the default of MDKGROUP should suffice, but you can also change it to something else, such as WORKGROUP, or PEACH, or whatever you like really. But all the PC's will need to use the same workgroup name. That is all you need to really worry about.

The line under that says NetbiosName, and you can either add your PC's name (eg. Xero) there, or change it to something else you might want it seen as on the network, or, since we've already named it previously, you can just leave it blank, and it should default to the name you gave it previously. You really don't "need" to fill this in as your PC already has a name, but if you prefer, or want it to be seen on the network as something other than what we named it before.

You can basically click next all the rest of the way thru this, til it's done. Any basic network will be satisfied with the defaults, and you'll be told you've "Successfully Configured your Samba Server", at which point you can click Finish at the bottom right, and it should close off, leaving you back at the PCLinuxOS Control Center.

Now, you should (in the PCLinuxOS Control Center) go to **Mount Points**, and select **Set up Sharing of your Hard disk partitions**. Here it will ask how you want to setup allow users to share directories. You can set it so no-one can share (defeating the entire purpose of this), allow everyone (allowing all users to share folders as they wish to define), or Custom (allowing you to setup custom permissions, as to who can share, and what). For a simple home-network, I suggest just choosing "Allow all users," hit OK at the bottom right,

and making sure SMB is selected, then hit OK again. You'll find yourself back in PCLinuxOS Control Center (again).

Now that the Samba server is set up, and configured, all that is left to do is to define our "shares". There is basically 2 ways I can suggest to you (as these are how i have successfully done mine before). I should point out that I have my OS's (XP, and PCLinuxOS Gnome, with XP not being booted in months) on my first primary drive, and I have 2 other drives I use for storage. Both are formatted as ext3, but if yours are formatted as FAT32 or NTFS, it should make no difference. You may need to allow or set up write access to the NTFS partitions, but reading from them should be fine either way.

With my drives set up as they are, I can either set up shares through the PCLinuxOS Control Center, under Manage Configuration of Samba, or I can use the "right-click" option when clicking on folders, and choosing "Share." This second option will only work for folders in your /HOME/USERNAME directory. If you prefer the simplicity of the second method, but, like me, your data is on drives/partitions other than your /home, there is a way around it. It is also best recommended if you are the only user for your PC. Otherwise, the other way is recommended, as others won't have access to them as they'll be in YOUR home directory.

I want to share certain folders off my drive/partition, but don't want to share the whole thing (I do have private

stuff there also). If i want to just be able to right-click on it to share, the simplest way to accomplish this is to unmount the partition and remount it under my /home directory. It isn't hard at all. Just do this. In the PCLinuxOS Control Center (yeah, we do everything from here, I wish others had it, it makes life so much easier), select Mount Points again, then "Create, delete, and resize partitions". Click on Continue from the bubble that pops up. Now, you'll see your hard drives and their partitions listed. To mount my 2nd drive (hdb on the top tab) under /home, I click on the tab to select it, then click on and select the partition, and choose the "Unmount" button that appears down the left (make sure you aren't doing anything on it, or it will throw up an error, as you can't unmount it while it's being used). The drive is now no longer mounted, and is currently inaccessible. Now select "Mount point" from the left-hand options. It will show you the last listed mount-point for the drive, such as /mnt/hdb1, or in my case (I already changed the name to something more recognizable) to /mnt/300GIG (it's a 300 GB drive, making it easier to locate since I know what is saved to what drive). To mount it under /home, we change this to /home/yourusernamehere/namewechoose for partition (eg. /home/david/300GIG), then click OK, and select "Mount" from the left hand side options. Your drive/partition is now mounted under /300GIG in your home folder. If you look in your /home directory now, you will now see a new folder, named 300GIG (or whatever you chose to call it). Repeat this for any drives/partitions you wish to add this way. Click Done at bottom when finished. Remember, this is only suggested if you are the only user on the PC, as others won't have access to your /home directory.

Now, the other "official" way, particularly if the PC is multi-user, is to, in the PCLinuxOS Control Center (beginning to see the pattern here?), and select "**Manage Configuration of Samba**". If we chose "Allow all users" then we won't need to create any users, it's all straight-forward. On the first tab, File Share, click on Add on the far right, and a box will appear. Now, as we "haven't" moved things to /home (which is why we're doing it this way), my drive/partition is still mounted under /mnt/300GIG (though yours might be /mnt/hdb1, or something similar, it's best to be sure you know which first), under "DrakSamba Add Entry" there are 3 boxes to fill, and an "open" button to the right. Click on the "Open" button, and it will open in your /home directory (mine being /home/david).

Now, there are 2 columns, and a series of buttons above them. One button shows my /home/david directory listed, and has up/down arrows on it. Clicking on this button shows me 3 options, /home/david, /home, or /. Click on /, and you will find yourself navigated to the / (or root directory), where everything else can be found. Find /mnt, and double-click on it, so that now you can see everything in /mnt, such as my 300GIG (or whatever yours is called). Select this 300GIG, and you can choose to either share this entire drive/partition, or double-click on and open it, then select which folders inside you wish to share. I will choose, for example, my MOVIES folder, and double-click on it to open and display it's contents. Now that you have opened it, it is now selected. At this point, you can simply click on OK, and find yourself back at the

"DrakSamba add entry" box, but now with the share directory listed at the bottom . Now, at the top line, "Name of share", call it what you wish it to be seen as on the network, MOVIES for example. Underneath, in Comments, I write MOVIES again. I've tried not filling comments in, but it complains, and asks me to enter a comment for share. Can't continue without it, so I add the name again, or at least something else to describe what's there. Click OK. You've now created a share. To add more, click on Add at the right, and repeat with any other folders/partitions you wish to share. Once you've chosen them, click OK at the bottom.

All your shares should be showing up now on the network. If not, then, back in PCLinuxOS Control Centre, click on System, and then "Enable or Disable Services". Check that Smb is marked as running, and make sure now has a check in box to start at boot. If your network shares are still not showing on the network, click on Stop next to Samba. Then after a few seconds choose Start again. Give it a minute, and it should now show. If it still fails (rare), then a reboot should fix it, and everything should work perfectly.

I currently don't have a working switch to connect my PCs with and test this, as it's mostly from memory, but it should all be fine. Feel free to point out if I missed anything, I can edit to add it in. Like I said, working from memory, pretty sure, but it's possible I've missed something. If it still isn't working correctly, go back into the PCLinuxOS Control Center (after a reboot preferably) and into Mount Points, then Manage Configuration of Samba, and where your shares are listed, double-click on one, or click modify to the right,

and Choose to make the share Public, or Browseable, by clicking on the box marked so and activating Yes. Then click on OK and close off. It should be fine. Please tell me if I'm missing anything, and i'll amend it. Hope this is of help to those feeling lost when setting up Samba file sharing.

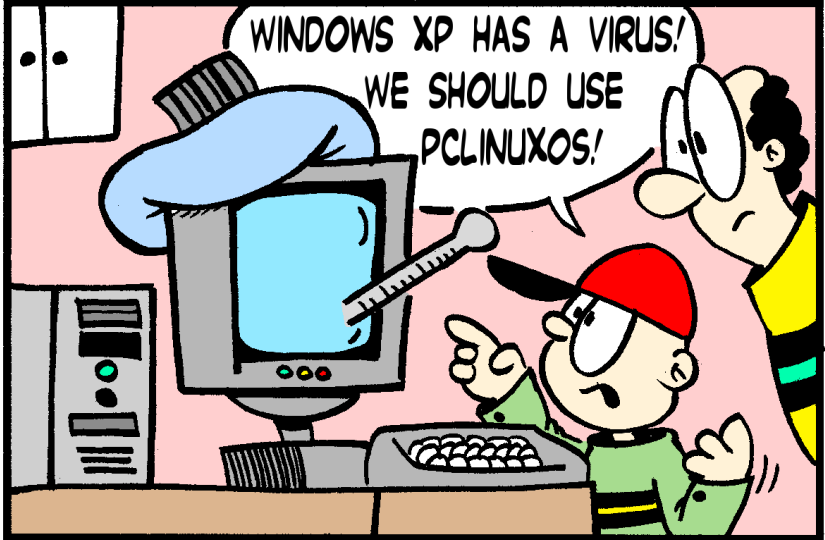


**PCLinuxOS
Phoenix**

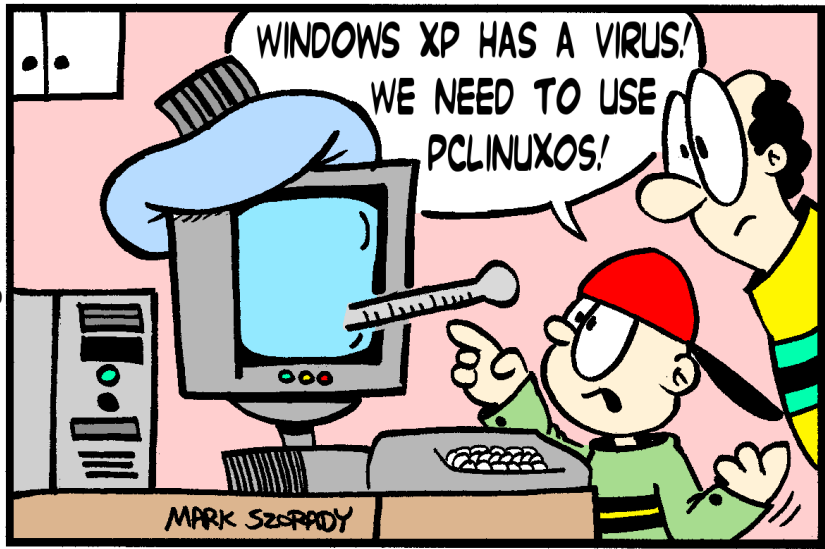
**XFCE
Remaster**

DOUBLE TAKE

DOUBLE TAKE By Mark Szorady



Find at Least Seven Differences Between Cartoons!



Answers on Page 38

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Mark's Quick Gimp Tip

The Gimp is incredibly powerful. When it comes to digital editing, the Gimp can do anything those higher end apps can do. Whether it's removing scratches from old photographs, restoring and sharpening digital images, or enhancing your photos, the Gimp can do it all! However, one of the stumbling blocks to learning the Gimp is understanding the basic idea of "Layers."

Working in Layers allows the user to isolate the portion of an image so it can be worked on and manipulated separately from the original (or base image) without destroying the original image. Think of layers as panes of glass that are placed on top of the photo/image you're editing. You can then copy and move part of the base image up and onto a new pane of glass (or layer) and then manipulate it in any number of ways using Gimp's digital tools. But most new users have a hard time understanding how layers work, are created, moved around, etc. Sometimes, showing the new user a completed Gimp file, complete with layers, is the best way. I've linked to a photo that I edited in Gimp. You can download it at: http://www.georgetoon.com/Gimp_Tip/September. Extract the .xcf file and then open it in Gimp. Play with the layers. Toggle them on and off, move them around, erase them, duplicate them, etc. Have fun with it. In the process, you'll better understand the whole idea behind working with Layers.



IRC: The Forgotten Chat Frontier

by Paul Arnote (parnote)

Internet Relay Chat, more commonly referred to as IRC, is one of the older chat services on the internet. IRC was started in 1988 (10 years before Yahoo! released Yahoo! Pager, the forerunner of Yahoo! Messenger). It didn't really take off until 1991, during the Gulf War, when updates about the war kept users "tuned in" to their IRC chat channels.

However, due to the popularity of instant messenger programs, like Yahoo! Messenger and MSN Messenger, IRC has become the forgotten frontier for a lot of computer users. Even today, it lives deep in the shadows of the various Internet social networking sites. In a lot of ways, IRC was the Internet social network of its time. I know this was the case for me, until I started frequenting IRC again (after a lengthy hiatus) when I started working on revitalizing the PCLinuxOS Magazine.

The Past

Back in 1996, when I was still running Windows 95® and before I knew about Linux, I was running mIRC, a then-popular IRC client, which is still popular among Windows users today. Yahoo! Messenger (initially known as Yahoo! Pager) was still two years from being released. ICQ would only just be released in late 1996. The only other way for people to "chat" across the Internet was via America Online, a.k.a. AOL. And, if you didn't have an AOL account, that left IRC as the only other way to chat with users who had interests similar to yours across the Internet.

Many of you may not have even been involved with computers at that time, and may not have even had a chance to use IRC, the grand-daddy of Internet chat who once ruled the roost. For those of you who fall in this category, you are in for a treat.

Living at the time in a very small, central Missouri town whose sidewalks literally rolled up at 7 p.m., IRC was my connection to the "outside world." For me, it was either watch TV or chat on IRC. Since I worked night shift at the hospital, my "waking hours" were what everyone else considered "sleeping hours." Thus, there wasn't much of anything of interest on late night on TV (it was even worse then, than it is now). So the choice was obvious. I'd log in to IRC and spend the evening, and long into the night, speaking with my "friends" – other "night owls" – on IRC.

I still have vivid memories of the excitement felt when I was able to chat, instantaneously, with another user from another country. Often times, conversations on IRC went late into the night, discussing every conceivable topic and solving the world's problems in the process. In 1998, I knew that I was moving from smallville, central Missouri, to the hustle and bustle of the Chigacoland area, in Northwest Indiana. So IRC helped me make friends in Indiana long before I ever moved there.

Then, when Yahoo! released their Yahoo! Pager software in 1998, it literally burst upon the scene with a fury. Everyone who was anyone was downloading and

using Yahoo! Pager. For a while, I bounced between using Yahoo! Pager and my comfortable, old friend, mIRC. I kept with mIRC mostly, but more and more, Yahoo! Pager became my software of choice. After a while, I forgot about that old friend, mIRC. I would occasionally revisit that old friend, but the visits became less and less frequent, until they stopped altogether.

Fast Forward To The Present

Now fast forward to June, 2009 – 10 years later. I needed a better, faster, more immediate way to communicate with Archie, who truly lives half way around the globe from me. Brainstorming sessions simply aren't as effective via email; you need the immediacy offered by chat software. Late during my evening, Archie was just starting his day. And early in my day, Archie was just ending his day. We are literally, 13 hours apart right now, because of daylight savings time. So, Archie urged me to pop onto IRC.

Once there, things felt somewhat foreign, yet at the same time, there was something familiar about it all. My old friend was still there, behaving as it always did, despite me having forgotten the “lay of the land” and many of the once-familiar commands. It didn't take long, though, before I was remembering the old commands and navigating IRC much as I had 10 years earlier.

Today, IRC continues to serve its users. In fact, as recently as May, 2009, IRC was serving more than 500,000 users at one time, through hundreds of

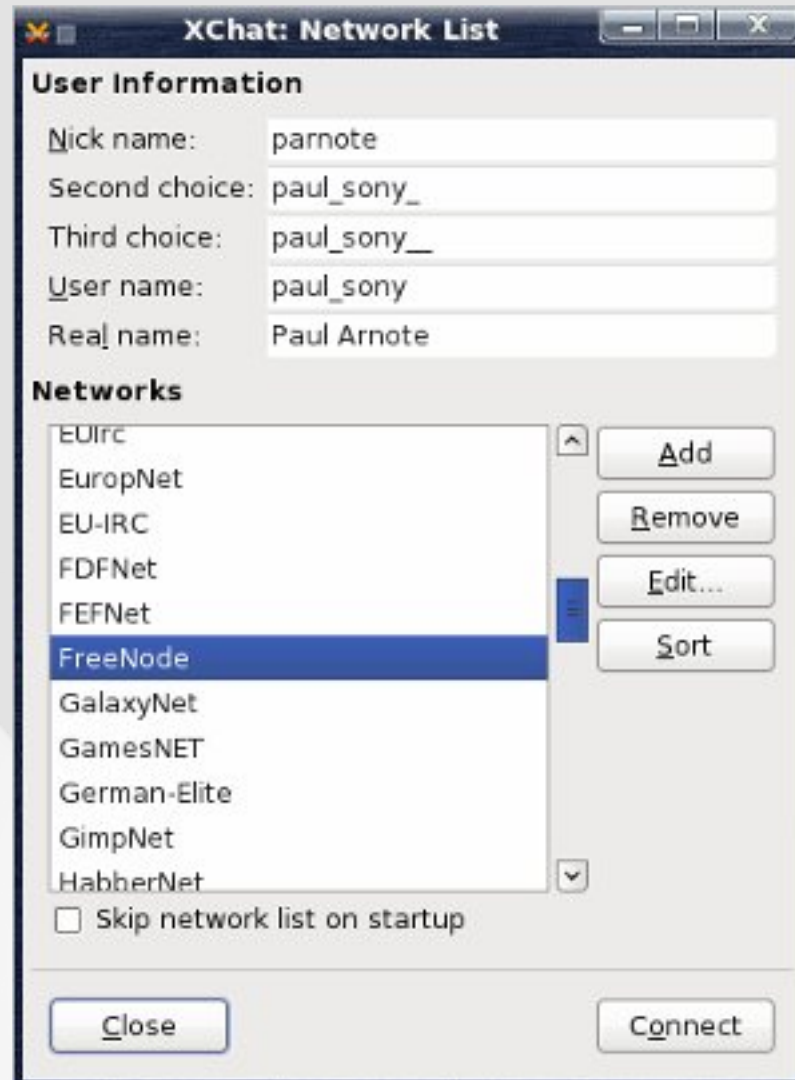
thousands of channels, operating on approximately 1,500 servers around the world.

You Can Join the Fun, Too – XChat

PCLinuxOS makes it easy for you to join in on the fun and discussions on IRC. In all full PCLinuxOS 2009 installations, there is a chat software client installed by default, called XChat. While there are other programs in the PCLinuxOS repository that allow you to connect to IRC (e.g., Konversation, Pidgin, Kopete, and kvirc, among others. There is even ChatZilla, an IRC plugin for Firefox.), we will restrict our discussion to how to use IRC via XChat. I'll leave the use of the other programs as something for you to experiment with.

Getting started with XChat is not difficult at all. When you first launch XChat, you will first be shown the IRC network window. It is here where you can decide which IRC network you would like to connect to. There are several IRC networks to choose from, but for our purposes, we'll leave it at the default, FreeNode. It's on the FreeNode server where all the PCLinuxOS IRC chat channels are located. But you should allow yourself to explore the other IRC networks. Back when I was a “heavy” IRC user, EFNet, DALnet, and UnderNet were all very popular IRC networks. I haven't yet re-investigated them, as I've been busy, and quite happy, participating in the discussions on the PCLinuxOS channels.

IRC channel names start with “#” at the beginning of their names. There are several PCLinuxOS channels already set up for you to chat in. The default, #pclinuxos, is more of a common area. It’s open to everyone. You can engage in conversations with other PCLinuxOS users there, but don’t ask support type



questions in there. For support, there are two other channels: #pclinuxos-fixme and #pclinuxos-support. The fixme channel exists to help you fix problems with your PCLinuxOS that may be preventing you from accessing your PCLinuxOS installation, or where you have limited abilities due to something that may have gone awry with an update. The support channel is for all other types of PCLinuxOS support questions. There is a channel for the PCLinuxOS Magazine, called #pclinuxos-mag, where everyone and anyone can join to discuss ideas and topics concerning the PCLinuxOS magazine. The #pclinuxos-package channel is set up for the PCLinuxOS packagers. If you are interested in joining the ranks of the packagers for PCLinuxOS, this may be the place for you to hang out. Then, there is #pclinuxos-naughty (no it’s not what you think), which is a channel devoted to discussing PCLinuxOS and its variants. There are even channels specific for various members of the PCLinuxOS international community. For Polish users, there is #pclinuxos-pl, and for French users, they can chat – in French – in #pclinuxos-fr.

Simply pressing the “Connect” button in the first dialog box will get you connected, but we can do something here to improve your experience. First, enter your nick name that you want to use in IRC in the space at the top of the window. You can also alter the information displayed on the next four lines as you choose. Next, click on the “Edit...” button, and we can set up the IRC channels we want to automatically log into whenever we start XChat. On the line labeled “Favorite Channels:,” list the channels you wish to automatically



log into when you connect to the FreeNode IRC network. Separate multiple channels with a comma. Again, the choices for the PCLinuxOS channels are:

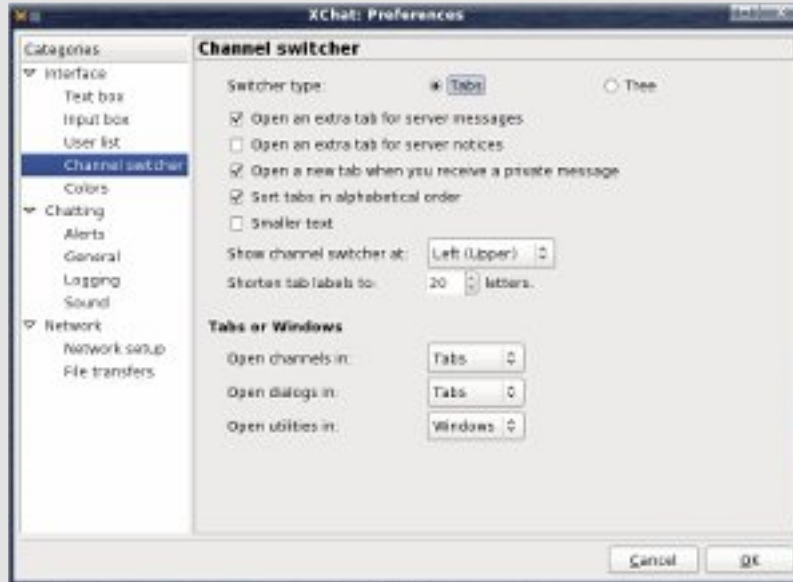
- #pclinuxos
- #pclinuxos-dev (invitation only)
- #pclinuxos-fixme
- #pclinuxos-fr
- #pclinuxos-mag
- #pclinuxos-naughty
- #pclinuxos-package
- #pclinuxos-pl
- #pclinuxos-support

Once you are done setting up your favorite rooms, select “Close” in the Edit dialog, then “Connect” in the Network List dialog box. You will now be connected to XChat, and be connected to the chat channels you set up as your favorites. Your XChat window should look something like this:



Although it's a matter of personal preference, we can modify this window to improve its appearance and increase its functionality. The default view is called “tree view.” The “tree” on the left side of the window shows you all the channels you are connected to. My personal preference is for the “tab view,” where the channels you are logged into appear as tabs across the bottom of the

window. By using the “tab view,” I gain more screen real estate, width-wise, for my message area (the center part of the window). To change to the “tab view,” go to the Settings menu and select Preferences. This will bring up a dialog box as follows:



Highlight “Channel Switcher,” and change the Switcher Type from “Tree” to “Tab,” at the top of the dialog box. Hitting “OK” will change your window to something that looks like this:



While you are in the Settings > Preferences dialog box, poke around in there. You can change the font used to display the text in your message window, the color of your message text, the default directory where files shared with you are shared, specify a sound to play when you receive a message (only sound files with the *.wav file extension work), time-stamping the conversations, and lots of other settings. You can even set XChat to log all your conversations for later reference or posterity.

#pclipinuxos Do you notice how some tabs have light red text (the #pclipinuxos channel in the screen shot)? The color changes to light red when there are new messages/conversations in that channel. Do you also notice that some tabs are in dark red (the **#pclipinuxos-package** channels in the screen shot)?

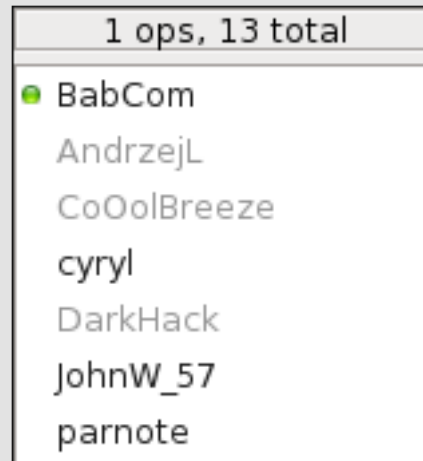
Those indicate that someone has either joined or left the channel. If someone addresses you directly with **#pclipinuxos-mag** your nickname, the channel tab will be highlighted in blue text. Tabs with black text have no new messages.

Also, take note of the horizontal red line in the message window. That red line means you were doing something else when that message came in, and the XChat window didn't have the focus at that time. It could be that you went to check on something on a web site, or you were typing a paper for school. To catch up on the conversation or follow what's happened since you

switched away from IRC, just start reading after the red line.

The right side of the screen, whether you are using the “Tree View” or the “Tab View,” lists the users who are also logged into that specific chat channel. Notice how some users have a green dot next to their name? These users are the “channel operators,” or just “ops.” Other IRC chat software may use an “@” symbol to designate the “ops” of the channel. Their job is to maintain order in the channel. Should you choose to not adhere to the channel rules and etiquette, you can either be “Kicked” (where you are kicked out of the channel for a period of time), or worse, “Banned” (where your IP address is recorded and you will not ever be allowed back into the channel). Only “ops” can “Kick” or “Ban” you. By the way, one sure way to get kicked out of an IRC channel is to log into IRC while you running your computer as the “root” user. You should never log into, or routinely run your computer, as the root user.

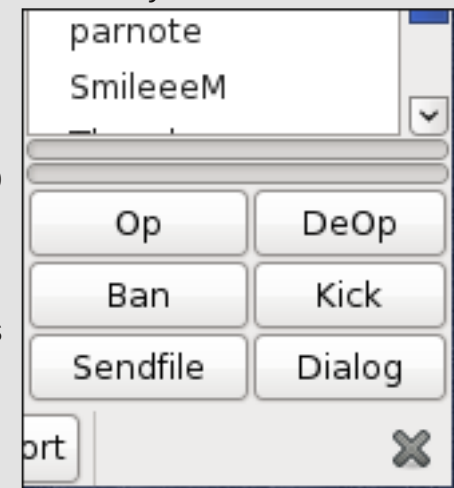
Also, when looking at the user pane, did you notice that one user at the top had a funny name (in the screen shot above, it's BabCom)? That is a “bot.” Two other common names you are likely to see are “ChanServ” and “BTOB.” The “bot” locks down that specific channel



so no one can “steal it,” and may perform other jobs, like logging whatever chats occur there, giving “ops” to certain users, monitoring the channel for adherence to the rules ... pretty much whatever the “bot” author and user decides that they want the “bot” to monitor.

We can further enhance our chat window by placing buttons under the user list pane, allowing us to perform special functions with those users. By highlighting the name of a user, we can then hit any one of the six buttons down below.

The Op, DeOp, Ban, and Kick buttons only function for those who are designated as an op in a channel. You can also send a file to someone in a similar way. Highlight the user's nickname that you want to send a file to, hit the Sendfile button, find the



file you want to send, and hit OK. It's considered proper etiquette to let the other user know that a file is forthcoming. Highlighting the user's nickname and selecting the Dialog button opens a private chat with that user. Again, it's considered proper etiquette in some circumstances to ask the user's permission to send them a private message. Another use for this it to tell someone in the chat room something that you don't necessarily want everyone else to see or know about. We'll discuss

another way of doing this when we talk about the IRC commands. You can display these buttons simply by clicking on the View menu, and selecting Userlist Buttons.

There is one other enhancement to your chat window that you may – or may not – wish to make. These are the Mode Buttons, accessible under the View menu. These buttons are usually only of use to those who

us! Thanks! T N S I P M B K L
 in the support channel, just ask, we'll help
 have op status. To find out what each button means, simply hover your mouse over the button you want to know about.

With all these enhancements, this is what your XChat window will look like:



So now, it's time to get down to learning the commands that allow us to interact with IRC and its users.

IRC Commands

To interact with IRC, and its users, there is a set of commands that tells the IRC server what you want to

do. They are relatively simple to learn and use. All commands are entered on the chat line, near the bottom of the chat window.

/join <channel-name>

This is the command we use to join a channel. Say you are in the middle of a chat session, and decide to check out another chat channel. Simply typing “/join checkers” (without the quotes) will allow you to join the chat channel named “checkers” (if it exists ... my examples are only hypothetical).

/me <action>

If you want to let the rest of the channel that you feel faint, or that you are hot and sweaty, or anything else, this is the command to use. Typing “/me feels faint” (again, without the quotes), will display “*parnote feels faint” in the message window. The action can be whatever you want it to be. Just remember to keep it appropriate for the channel you are chatting in, or you may be finding yourself either kicked or banned from a channel.

/msg <user> <message>

To send a private message to another user, use this command. If you type “/msg parnote I need to tell you something” (without the quotes) will send me, parnote (my nickname in IRC) a private message that no one else in the channel can see. In XChat, the user you

sent the message to will have their nickname surrounded by reversed brackets, e.g., >parnote<. If the user responds to you, it will be in a new tab at the bottom of the XChat window. In some channels – like a singles channel – it's customary, and proper etiquette, to ask someone permission to send them a private message before doing so.

/nick <new-nickname>

If you want to change your nickname in the middle of your chat session, enter “/nick TheGrimReaper” (without quotes) to change your nickname to “TheGrimReaper.” Be sure your nickname is appropriate for the channel you are chatting in (and all the PCLinuxOS channels are considered “family” channels). Otherwise you may find yourself kicked or banned from a channel.

/notice <user> <message>

Similar to the /msg command, this command sends a message to another user, but without opening a private chat window.

/part

To leave a channel, simply enter “/part” on the message entry line. To leave all of the channels you are currently chatting in, enter “/partall” on the message entry line.

/ping <user>

Entering “/ping parnote” will give you the ping time, or lag time, between you and the person you pinged. Of course, you would replace my nickname with the nickname of the user you are wanting to ping. Lag time is the amount of time it takes from the time you type a message and it appears for others to read your messages.

/quit

Typing “/quit” on the message entry line causes you to leave IRC altogether, disconnecting you from the IRC server.

/ignore <user!*@*>

Sometimes, you may encounter someone who really, really annoys you. Or maybe there's someone who has a habit of harassing you. Or maybe there's some user that you just don't want to receive messages from (an ex girlfriend, boyfriend, wife, or husband perhaps?). This command allows you to ignore the specified user. Just enter “/ignore billybob!*@*” to ignore the user with the nickname “billybob.” To ignore all users with “billybob” as a part of their nickname, enter “/ignore billybob!*@*” and “billybob,” “billybob25,” and “billybobruns” will all be ignored. Adding NOSAVE at the end of the line will make the ignore command only effective for that chat session, and remove the ignore when you quit IRC. There are many other options for

this command, and you can read about them by following the links at the end of this article.

/unignore <user!*@*>

If you change your mind about ignoring someone, this command reverses the ignore command. It uses a syntax similar to the ignore command. So, if you decide that you would like to see messages from “billybob” again, just enter “/unignore billybob!*@*” on the message entry line.

/chat <user>

Sometimes, you may want to engage in a private chat with another user, independent of the IRC network. The “/chat timothy” command will send a DCC Chat request to the user “timothy,” and if he accepts, you can continue to chat, even if you get disconnected from the IRC server. Warning: do NOT accept any DCC request, whether it's for chat or file sends, from people you do not know.

/whois <user>

There are times when you may want to know if someone is who you think they are, or other times you may want to know more information about a user (like who their ISP is, their IP address, what other channels they are in, etc.). The “/whois charlieboy” command would tell you all that information about the user “charlieboy” (if he exists). The information will appear in the main window or tab from the IRC network you are connected to.

/away <optional message>

If you enter “/away going to bed now” in the message entry line, you will remain logged into IRC, but your user nickname will be marked as being away. If you have XChat set to display “away” messages, your status will display in the message window as “*parnote is away: going to bed now.” If you omit the optional message, you will still be marked as away, and only “*parnote is away” will be displayed, unless you've defined a standard away message in the XChat preferences dialog.

What now?

Now you know what the basic commands are to participate on IRC. The rest is now up to you. Go out and explore the different IRC networks. Try out the new commands you've learned. IRC really can be a fun way to communicate with others from all around the globe.

Before you do, however, let me remind you that IRC is primarily intended to transfer text. It is unencrypted, and thus security is your responsibility. It's not advisable to share personal information that you don't want everyone to have access to.

There are a lot of other resources for information on IRC. For example, you may wish to look at the full set of commands to see what all you can do while on IRC. I've only given you the basic command set here. There are many more commands available.

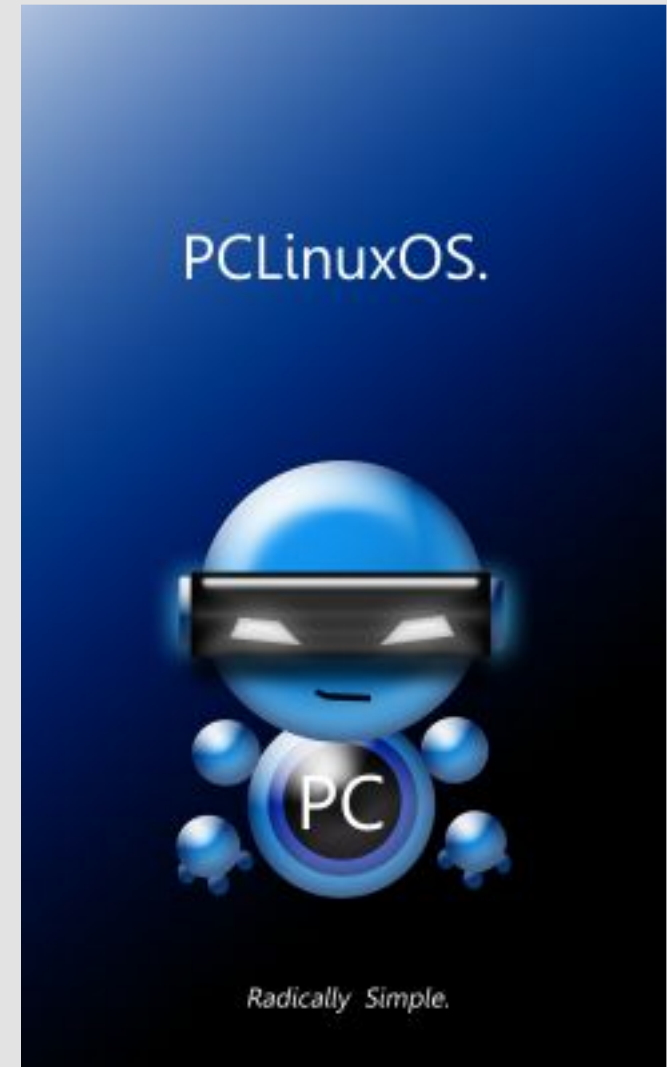
So, here are some resources that you may find particularly useful:

- XChat Help:
<http://t0x.in/xchat.html>
- XChat Main Page:
<http://xchat.org/docs/>
- IRC Beginner:
<http://www.ircbeginner.com/ircinfo/ircclass.html>
- Advanced IRC Commands:
<http://www.irchelp.org/irchelp/misc/ccosmos.html>

These should get you started quite well towards learning and using the grandfather of Internet chat software. Maybe IRC isn't so forgotten after all, but rather is alive and well, still keeping users connected more than 20 years after its debut. IRC was "social networking" before the rest of the world even knew what social networking was.



Answers to Mark Szorady's Double Take: (1) Hat backward; (2) Thermometer moved; (3) Keyboard keys smaller; (4) Shirt stripes different; (5) Arm moved; (6) Cabinet shorter; (7) "Has" changed to "Got."



PCLinuxOS 2009.2 on Acer Aspire One



by Andrew Huff (athaki)

In this short article I would like to detail my experience with PCLinuxOS on my Acer Aspire One.

I downloaded the PCLinuxOS 2009.2 iso file and used UnetBootin to install it to my 1GB flash drive. Once I loaded I logged in as root, clicked install, and followed the prompts. It couldn't have been easier. The install for

PCLinuxOS on this machine went pretty standard and within 20 minutes I had a working PCLinuxOS installation on my Aspire One. Everything except having the card readers hot-pluggable and the Fn keys for audio worked out of the box. The fix for the Fn keys is easy; go into PCLinuxOS Control Center and select Hardware and then keyboard layout. What worked for

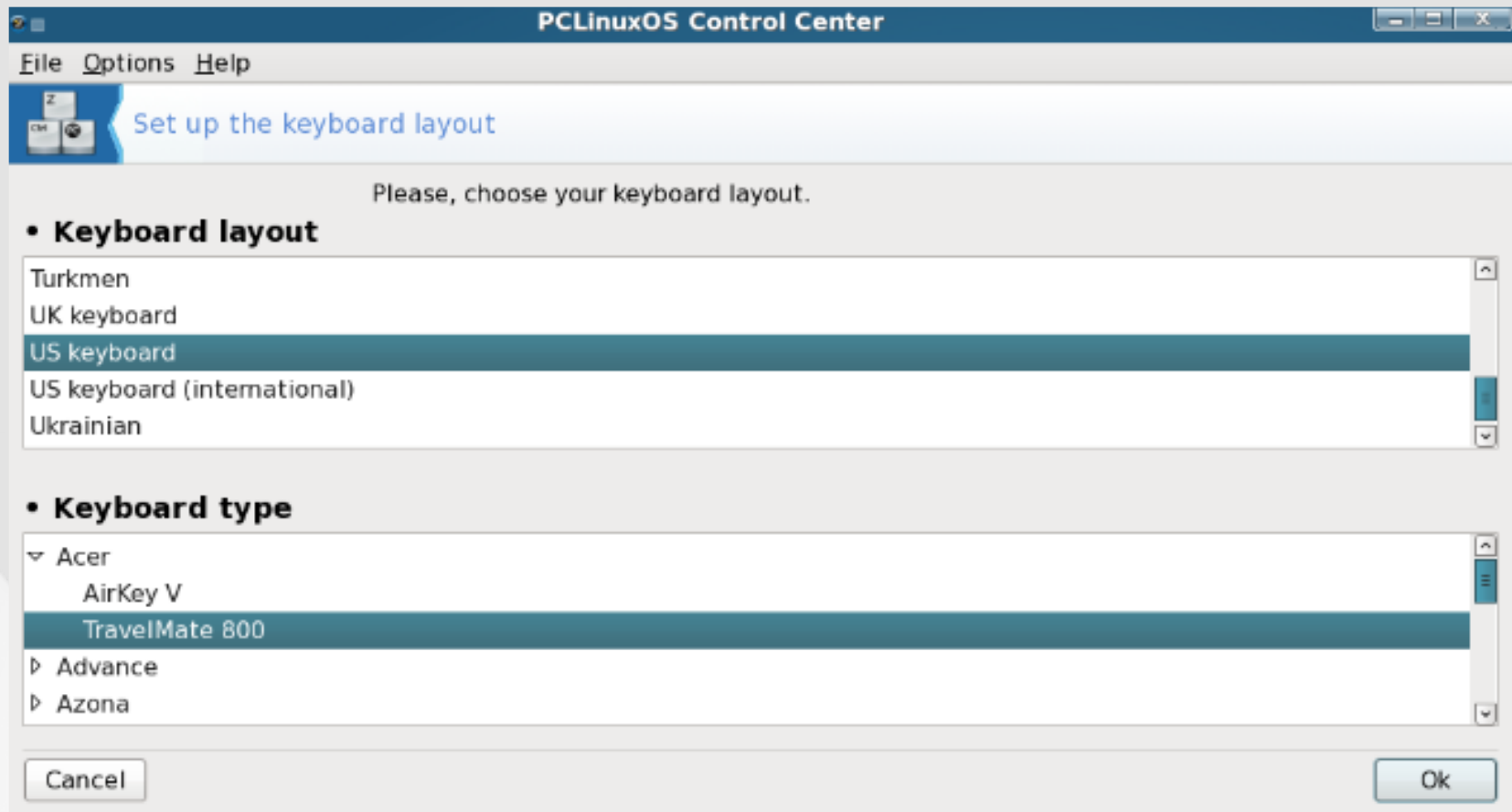
me was selecting the keyboard type Acer Travelmate 800, as seen in the screenshot below.

A suggested card reader fix is as follows, although your mileage may vary (it has been reported to work for some users, and not others):

1) Create a file `/etc/modprobe.d/aspire-fix-sd-slots` with the following contents:

```
options pciehp pciehp_force=1
pciehp_slot_with_bus=1
```

```
install sdhci for i in 2381 2382 2383
2384; do /usr/bin/setpci -d 197b:$i
AE=47; done; /sbin/modprobe --ignore-
install sdhci
```



2) Then add the following line to /etc/modules:

```
pciehp
```

Next, you need to disable the Memory stick, to avoid hanging at boot.

3) create a file /etc/modprobe.d/aspire-blacklist-memstick with the following contents:

```
blacklist jmb38x_ms
blacklist memstick
```

This should allow you to have your card readers working in top form, or you can do what I did and just have the SD card in the reader at boot, since the SD card is recognized if it is inserted prior ot boot.

The only caveat's in this operating system are not due to the OS itself, but due to the small screen size of the Aspire One. Menus are rather cramped, but they are still functional. All in all, PCLinuxOS suits the Aspire One rather well.



Anagrams

An anagram, as you all know, is a word or phrase made by transposing or rearranging the letters of another word or phrase. The following are exceptionally clever. Someone out there either has way too much time to waste or is deadly at Scrabble.

Dormitory	Dirty Room
Evangelist	Evil's Agent
Desperation	A Rope Ends It
The Morse Code	Here Come Dots
Slot Machines	Cash Lost in 'em
Animosity	Is No Amity
Mother-in-law	Woman Hitler :)
Snooze Alarms	Alas! No More Z's
Alec Guinness	Genuine Class
Semolina	Is No Meal
The Public Art Galleries	Large Picture Halls, I Bet
A Decimal Point	I'm a Dot in Place
Eleven plus two	Twelve plus one
Contradiction	Accord not in it
Astronomer	Moon Starer
Year Two Thousand	A year to shut down

This one's truly amazing, as a grand finale:

That's one small step for a man, one giant leap for mankind. -- Neil Armstrong

A thin man ran; makes a large stride, left planet, pins flag on moon! On to Mars!

Forum Foibles: Forum Signatures

This month, ms_meme takes a look at some of the "words of wisdom" that users relay in their forum signatures.

JayDot

PCLinuxOS Get it. Got it? Good!!

hornerm

Old Computer People Never Die -
They just Lose Their Memory

coolbreeze

May the Big Guy slap you with Wisdom

Bubba

The extra mile is the stretch of road
that is never crowded

Neal

I'm not smart enough. I don't know enough. But I'm
certainly stubborn enough!

ms_meme

I don't tell lies, but I don't mind uttering nonsense.

wlan

Light Travels Faster Than Sound, Which Is Why Some
People Appear Bright Until You Hear Them Speak.

MeeMaw

Never stop learning!

maddogf16

I'll stop learning when I'm dead!!

Crow

School is not out, yet

YouCanToo

Linux is user-friendly - it's just picky who its friends are.

parnote

In a world without walls, who needs Windows?

Wildman

Most of the stuff people worry about ain't never gonna
happen anyway

Joble

Hero means I talk a lot, nothing more, nothing less!

Papawoob

I have found that most of what I know was learned
while searching for answers to something else!

Behind The Scenes

An Interview With Neal Brooks

by Paul Arnote



Editor's note: *This month, we get the opportunity to meet with Neal Brooks, and get a chance to get to know him better. Neal, who has recently completed the PCLinuxOS LXDE Remaster, named PCLXDE, and who has been very busy packaging RPMs for the PCLinuxOS repository ... in addition to serving as a moderator on the Package Suggest and Packager's sections of the main forum and Global Moderator on MyPCLinuxOS community projects forum ... takes a few minutes out of his busy schedule to answer some questions for PCLinuxOS Magazine.*

Can you tell us more about yourself? ("Real" name, where you live, marital status, kids, pets, etc.)

My name is Neal Brooks. I reside in Tennessee in a small town within a couple hours drive of several larger cities and towns. From my yard, I can view beautiful mountain scenery. On clear days, the view is awesome. On cloudy days, there's a view that the artist in my soul responds to with joy.

I've been married three times, though I currently live alone. I have a son, aged 34, three wonderful granddaughters and a great Daughter-in-Law. At present, I have no pets, though I suppose a cat will come along and adopt me at some point. Meanwhile, the local birds and squirrels treat me rather well. They will occasionally sit on my porch railing and "talk" or sing to me.

When did you first get interested in computers, and what is your history with computers?

In the fall of 2004, I received my first computer, an old Compaq with Windows 95. I had to teach myself how to use it, as I had no tech support and almost no idea of how to do anything.

How did you get started with Linux?

It was within the first couple of months of using that computer that I first encountered the GPL. It amazed me! I began searching to find out more about this idea of something not locked up tight by a license but being opened by a license.

I first read of Linux at ZDNet. I would read through the comments to articles and both Linux and BSD were often mentioned. One of my favorite responders was Alan Cox. Though all of the responders caught my attention with what they had to say, it was his responses that lead me to decide to find out more.

I can laugh about it now, but my earliest searches were very disappointing. I was still very new to the Internet and had little knowledge of what to search for or how to search for it. I found several sites selling Linux but at prices way out of my league. I know now that those sites were selling enterprise level system CDs and support, but then I was disappointed.

A few months later, I became acquainted with a man who worked with Linux systems. He explained about the difference between enterprise systems and

community distributions. We had a good laugh over my search terms. Having learned what to search for, I started running across many references to Ubuntu. I downloaded and burned many unbootable CDs. It was quite frustrating. Eventually, I drove the 120+ miles to see my new friend, and he gave me a set of Fedora Core 4 CDs. I installed it and used it over one weekend. But there were problems that I later learned were from a bad burn.

When Fedora Core 5 was released, I downloaded and burned a set of CDs using K3B on a new installation of Fedora Core 4. I used it for quite some time, but I managed to break it quite often. After one reinstall - yes, I broke it that badly - I downloaded and burned a copy of Ubuntu. I had problems with it straight away. I could not set up a firewall without trashing the system, among other things. Having learned to be paranoid about security while using windows, this upset me quite a bit. I spent quite a bit of time reading through the Ubuntu online help but found no solution that worked for me. It was disappointing. It felt like I was personally failing.

So I went back to Fedora, as I knew I could use it, if I were careful. I had learned enough by this time to keep my installation of Fedora from crashing; that is, I had learned a lot of things not to do.

Always hungry for more knowledge, I spent a lot of time reading posts on Fedora Forums. I often had problems with understanding what I read, but I kept at it. Then

one day a miraculous event occurred. Well, miraculous for me, anyway. In one member's signature was a reference to PCLinuxOS. I clicked the link and read the web page. As I had learned to be more cautious after my failure with Ubuntu, I thought about it for a while before I decided to give it a try.

That is where the miracle occurred. Finally I had found a system that was usable and stable from the first boot up of the live CD. I suppose you could say that that was the moment that I truly began to learn about computers. With a stable system under me, I could surf the web and spend hours reading and learning. That system was .93 MiniMe beta. .92 was out at the time, but I had liked the idea of a smaller system that I could set up to suit myself.

When did you make the switch to PCLinuxOS as your primary Linux distro, and why PCLinuxOS?

In late spring of 2005, my true journey with Linux began. I still had a lot to learn, but the ability to do so securely with a stable system under me gave me the opportunity that I'd hungered for all of my life. I had found the system that was "Simply the Best." I had also discovered that there was a wealth of knowledge posted on the forums, either directly or via links. I took shameless advantage of this to dig in and learn.

Many know you as a moderator in the Package Suggest and Packaging boards of the main PCLinuxOS forum, and a Global Moderator on the community project forum at MyPCLinuxOS. What would you say is the most challenging aspect of

your job as a moderator of those boards, and how do you handle it?

The most challenging part? Hmm..... there are many things about it that are challenging. I suppose the biggest challenge is to overcome any reticence at stepping forward to moderate someone. It's easier for me to put myself in someone's place than to moderate them, even mildly. I'm grateful that I've never had to do any strong moderating. We do have a most wonderful community.

What is the most rewarding aspect of being a moderator?

The most rewarding part is that I continue to be a member of the community. I'm just one of 'the family' with a specific job to do, like any other member who contributes to our beautiful online 'home.'

What made you interested in learning how to package RPMs for PCLinuxOS?

Two things were on my mind at the time. I had a strong desire to contribute and, as always, a desire to learn. The documentation was available, and the forum for packagers was easily accessible. I guess you could say that I saw an open door and stepped in.

What has been the most challenging RPM for you to package for PCLinuxOS, and why?

In a way, they are all a challenge. Any time you start to package an RPM, you face the possibility that there will be errors that you have no idea how to overcome. That's what the packager's section of the forums is about. It is a place to share questions and knowledge. Not too long ago, I took a whack at updating some of the system tools to see what I could do. It was no easy task, and I was not successful. At some future time, I will try again. It is just a matter of learning and going forward.

What single RPM has given you the greatest personal pleasure to have packaged for PCLinuxOS, and why?

It gives me a great deal of pleasure when I can successfully package any RPM, but recently I've had the opportunity to package GetOpenOffice. That was very satisfying on many levels. I had had the privilege of testing it for Pinoc. It was a distinct honor, as well as a pleasure to work with him. When I wrote the spec file, and the package built, there was a feeling that is indescribable.

You recently headed up the project to create a PCLinuxOS LXDE remaster, called PCLXDE. What inspired you to create PCLXDE?

The idea came to me just before I started on the Quarterly Update project. I had added task-lxde to my install and found that I liked it. After my work on 2009.2

was completed, Texstar mentioned that an LXDE remaster was on the "to-do" list. I asked if I might do that, and he said yes. And the rest is, as they say, "history."

What was the most challenging aspect of creating the LXDE remaster?

Choosing and setting up the DM (desktop manager) was the most challenging, I think. I started out trying to use SLIM, but it continually refused to launch LXDE. After reviewing the options, GDM was chosen. I believe that it has worked out well.

What was the most rewarding aspect of creating PCLXDE?

Each little triumph in setting up the system was richly rewarding. Taken all together, they comprise a feast of many delights. It was most rewarding to have the chance to work with other community members on the project. I suppose the most rewarding of all was seeing the announcement of its release.

What was your criteria for deciding which applications to include in PCLXDE?

Native LXDE applications were decided on first, of course, and as we wanted the release to be a lightweight environment, we looked at lighter applications. There are quite a few to choose from. The selections were changed a few times during the

process of putting PCLXDE together. Several test runs were made, which lead to changes. Eventually, we settled on a set and proceeded from there.

How has your background prepared you for the challenges of packaging and creating PCLXDE?

I was always a bibliophile, what they used to call a bookworm. I spent many hours alone with my books and was quite happy. When I was introduced to the Internet and began to see the possibilities of reading, not just published books but the writings of people from around the world, it was like I had stepped into a library of near infinite proportions. Despite those early problems I had with learning how to use it, I knew I had found something great.

From an early age, I had been taught the value of sharing. Too, I had been creative from an early age. When I found Linux, and in particular, when I found PCLinuxOS, I found a way to do both in a way that was fun. You see, one of the things I had learned about the Open Source world was that anyone could make a contribution. No one is excluded. Anyone can learn. Anyone can contribute. You may need to search about for your niche, but if you are determined, you can do it.

I suppose you would say that my philosophy is give, and it will feel good; have fun doing it, and it will feel even better; create what you share, and perhaps others will be inspired to be even more creative and sharing.

Has your experiences -- both successes and failures -- with packaging and creating PCLXDE changed, or challenged, your view of FOSS, and how?

I think the name says it all. Free and Open Source Software. Freedom offers so much to us that it could take a long time just to explore all of the aspects of it. Opened up to unlimited viewing, the source of any software, or system is there for the newest of the new and the most experienced.

Whether working on a package or PCLXDE, I experience this freedom and openness. To know that I am free to do whatever I choose is a bit heady, but the knowledge of that freedom brings with it the knowledge of the responsibility that goes with it. Any change you make you must take responsibility for. I think that now, more than ever, I understand the responsibility that goes with being free.

What advice would you give to anyone who wants to learn how to package RPMs for PCLinuxOS, or who may want to join the PCLinuxOS Packaging Crew?

Go for it. Very good documentation is available. If you commit yourself to learning, you'll find that there's plenty of knowledge already there for you to take advantage of. Help from fellow packagers is available, if it is needed. That's the beauty of the packager's forum. I recommend reading the posts of those who have

asked for and received help there. There is a great wealth of knowledge there in addition to the documentation available.

So let nothing hold you back. Go ahead and learn.

What other projects, other than packaging and creating PCLXDE, are you currently involved with?

There's the Quarterly Update CD project, and I do some testing - as much as I can, anyway. I've just finished up Ixcursor, which is a small app for changing the cursor theme on PCLXDE. Many thanks go to Texstar, Pinoc and Travisn000 for invaluable assistance on that one. I'd still be working on it, if they had not been there to help.

Now that you have completed PCLXCE, what do you anticipate being your next big project (if you can reveal it to us)?

Well, there's one project I have in mind that's in the early research stage. It will be a while before I'm ready to talk about it, if that day ever comes. Projects can die in the planning stage, but there's always something to do.

I have my fingers in about a dozen other pies. LOL Maybe that's an exaggeration. I do believe in contributing what I can, where I can. Whether it is only a small involvement or taking the lead, the opportunity to give back to the community and PCLinuxOS is a joy to my heart and great fun. I love it.

What "words of wisdom" would you like to leave us with?

You want wisdom? Hmm..... better ask Texstar. He'd have some wise words, I'd bet.

Or how about I share what I consider to be the most powerful words ever spoken? : "You can."



Computer Languages A to Z: C/C++

by Gary L. Ratliff Sr. (eronstuc)

This is the third in my series on computer languages. It seems that due to a mix up in a previous changing of "the guard," my promised follow up to show information on the commercial version of APL was never published. However, I did post a video of the install of APLX 4.1 on YouTube. Just search for eronstuc and you will see a list of the items I've uploaded.

With the magazine back on a monthly publication schedule, the plan is to discuss, in alphabetical order, the various programming languages that are available. In case you missed the previous articles, you can view the first, on APL, in the July, 2008 issue of the PCLinuxOS Magazine. You can view the second article, on Basic, in the October, 2008 issue.

This article will concentrate on C and C++. C is the language which was used to port the original Unix operating system from the assembly language for the PDP computers it was originally written with. Due to its wide acceptance, it was responsible for the growth of Unix and was used to write most of Linux. This can easily be learned by anyone who chooses to pursue the reading of the source code of the operating system.

KDE, on the other hand, uses C++ for its applications. C++ is a superset of C and the current version of C++ supports all the features of the C89 standard for the C language. However, some new features for C were introduced by the C99 standard, and these new features are not incorporated into the current C++ standard. However, a recent email to me from Herbert

Schildt who was a member of the C++ standardization committee let me know that most of the features which are not included in the current version of the C++ language, which are part of standard C99, will be incorporated into the next standardization of the C++ language.

Preparing your computer to program in C/C++

As I have upgraded from PCLinuxOS 2007 to PCLinuxOS 2009.1, I believe that the gcc compiler is a part of the tools on the default install. At first gcc meant the GNU C compiler. Now it refers to the GNU Compiler Collection and, at present, this contains front ends for C, C++, Objective-C, Fortran, Java, and Ada. You may easily verify if you presently have this compiler installed by entering gcc -v in a terminal window.

If you receive a file not found message, then you will need to also install the gcc package. That the g++ front end for the gcc suite is not installed by default may be learned by entering g++ -v instead of the gcc line as above. This should generate the file not found message. Now, to install the g++ compiler, you will need to become root:

```
su
«enter the root password»
apt-get install gcc-c++
```

Here the system will analyze your currently installed software and list all the dependencies required to

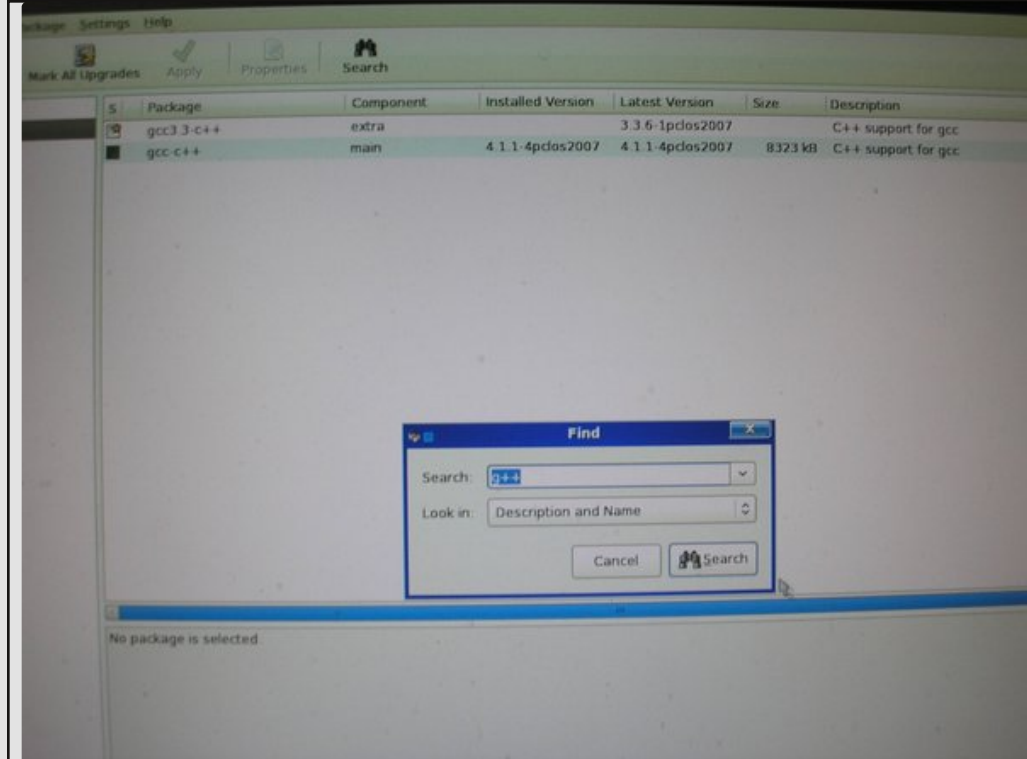
upgrade your system to be able to compile C++ code. This will almost always include the libstdc++ libraries. While you are at it you might as well install the debugger program gdb by issuing the command:

```
apt-get
install gdb
```

This operation may also be performed using synaptic. Just use the search feature to find c++ and then later gdb.

Here you will learn that gdb is a source level debugger for the C, C++, and Fortran languages.

Next we will list all the books which were used as a reference for this article. The following books are reliable reference materials to help you learn to learn to write and compile applications in these languages.



Here synaptic reveals that the C++ front end for the GNU Compiler Collection has been installed.

Reference Materials to Aid in Learning C/C++

The Complete Reference C Fourth Edition
by: Herbert Schildt
Copyright © 2000
by The McGraw-Hill Companies

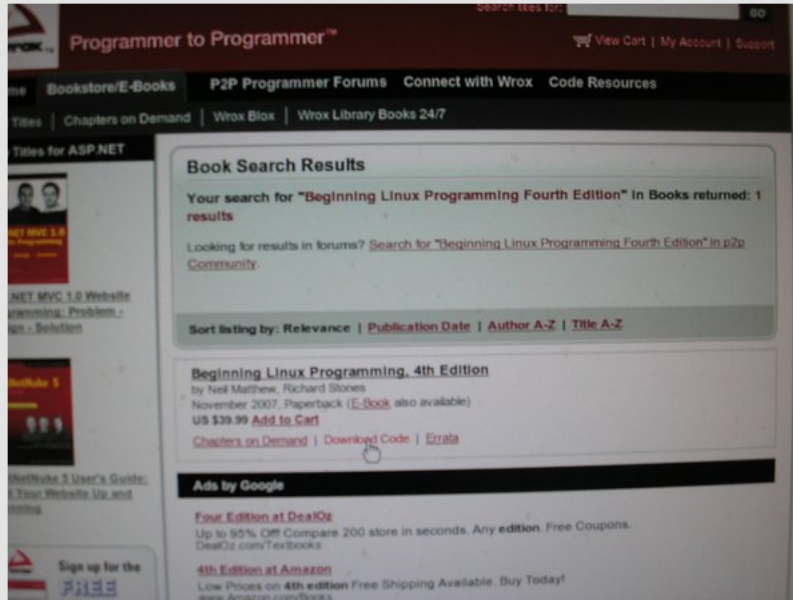
C++ ALL-IN-ONE DESK REFERENCE for DUMMIES
by: Jeff Cogswell
Copyright © 2003
by Wiley Publishing, Inc., Indianapolis, Indiana

Beginning Linux Programming 4th Edition
by: Niel Matthew, and Richard Stones
Copyright © 2008 by Wiley Publishing, Inc., Indianapolis, Indiana

The Beginners Guide to C++
by: Oleg Yaroshenko
Published by Wrox Press Ltd. Birmingham, UK

Practice Practice Practice

This last mentioned book is out of print. And as I result all the example programs were typed into my system and saved to an area named mycpp on the C:partition of my Windows system.

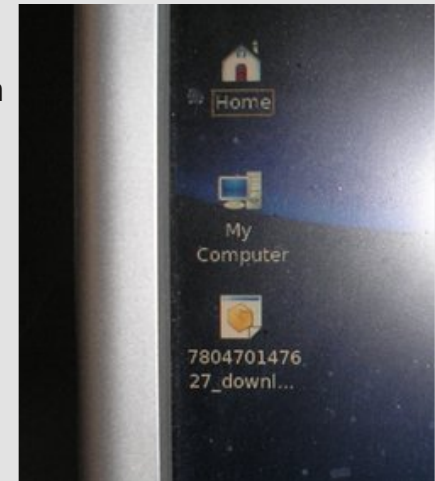


There are several advantages to getting these books. The Jeff Cogswell volume comes with a CD which contains all the source code, as well as some very useful development systems for use with Windows. (Yes, I realize that this is on PCLinuxOS, but there is also a chance may dual boot your computer with some Windows Operating Linux system.) You may as well develop programs from the tools supplied with these books, as they are free with the purchase of the book. The source code for the texts by Schildt and the Matthew/Stone may be obtained from the web sites of the respective

publishers. In each case, once you arrive at the site, enter the name of the volume into the search engine, and soon you will receive a message which will have a download tab. When the item is downloaded, it will be in either zip format or tar.gz. So if you have the GNU version of the tar utility (which is the case with Linux) you can unzip and untar in one simple step:

```
tar -zxvf 780.....tar.gz (or tar -
zxvf 780.....tgz)
```

The volume in zip format will be extracted with just the gunzip command. Now some of the volumes will have each chapter, also in a tarred and gzipped format. Once the source file is displayed, you will move it into an area from which it may be compiled and setup to run on your system. In my case, the archive was stored on the desktop and I created a bin and csource directory to the /home/gary area. Also by copying or moving them, you will acquire the necessary permissions to operate upon the files.



The Cogswell volume contains a Dev-C++ IDE, which will allow compiling all the examples in his text. The Dev-C++ is also available in a Linux version. Its main

advantage is allowing compiling multi-source systems, without the need to create a makefile. This CD is obtained from them and also contains many other files, including a system for compiling Pascal. Also in the compiler area are versions for a command line Borland C/C++ compiler, and Windows versions based on the gcc compiler for MinGw and Cygwin. Cygwin gives your Windows system a system which runs most familiar Linux commands.



Here you can see that if you select the free Borland builder product, once you register, you will have plenty of time to use the system. 354975 / 365 shows that your registration will still be good for over 97 years. If you saved this to CD for backup, the CD is only known to be safe for 30 years!! By this time Microsoft will have thrown in the towel and gone open source so that it too can have the best software developers in the world fixing its code.

The text is available in bookstores. However, the comment to contact the author of the book, either at his website or via email, will not yield any reply other than to learn that these are not available. Writing to the publisher directly will resolve most problems. This will even give a pointer which will allow you to acquire the very powerful Borland 2006 Builder Software Development System. Once you get setup with a password to download and install the package, you learn that this expires in 37,750 days. Don't worry that translates into more than 97 years and if you are old enough to be reading this article you are very likely not going to have the software expire before you.

The C and C++ languages are both classified as simple because they have very few built in commands. What gives them their power is the vast number of libraries which have been developed, which allow you to easily harness systems developed by many skilled programmers who have gone before you. You can learn either language by just reading the books. That comes from reading and entering in the programs and compiling them. Most errors will soon be found to be key in errors if you manually enter the text of the programs. Having the source code readily available as zip files for you to download will greatly reduce this problem.

When reaching the end of the Beginning Linux text, the last two chapters deal with developing GUI applications for GNOME and KDE. Here you will need to install the libraries for these systems. PCLinuxOS has a version

which is based upon KDE and another version which is based upon GNOME. For the GNOME desktop environment, you will need to install the GTK+ development libraries. For the KDE desktop environment, you will need to install the KDE development libraries. Working through the text, it was amazing just how easily the GUI systems were created. The GTK+ libraries add GObject, which adds object orientated features to the C language.

The Cogswell text will also introduce you to the very powerful SciTE editor. This editor has highlighting for very many different computer languages. It also will automatically indent the text as required for the various levels of the code. Proper indentation would be ignored by the compiler but makes the text much more easily understood by you or a fellow programmer who is attempting to track down an elusive bug. The SciTE text editor is available in the PCLinuxOS repository.

These volumes also cover using the debuggers in some detail. The Cogswell text comes with the Insight Debugger, which is useful for finding errors on items developed on Windows. The Matthew/Stones text covers the use of the gdb product.

So if you have ever wanted to learn to program or to learn how your computer functions in some detail, learning C and C++ is the required first step to being able to understand the source code of the system. The Beginning Linux Programming text is not really for beginners, but gives the person a comprehensive understanding of how the features of Linux are used in the development of computer applications. Such a deep

understanding will make your perusal of the source code productive.

Other Sources for Learning C++

The text books suggested are not the only methods of learning the C++ language. By performing a search in Google for C++ tutorials, you will learn that there are several. Microsoft will even allow you to download an older version of their Visual Studio C++ development package. Included is a video by one of the software engineers from Microsoft which illustrates how to use their product. However, my experience with the free Visual Studio C++ was that all programs entered failed to function because a cmd file could not be found. I verified that I had downloaded the version for the XP, as cmd files are used in NT. However, this same site suggested that if you were just learning C++, you should visit a tutorial site where you could download twelve lessons in PDF format, which teach the C++ language.



Scripts-R-Us: Repo Speed Test

by Don Crissti

A few months ago, one of our forum members asked for a basic script that would test the download speed for various PCLinuxOS repository mirrors. This article is based on the script posted on the forum and will assume you have very basic knowledge of programming concepts like variables, loops, conditional blocks. These concepts are mostly the same across all platforms and programming/scripting languages, so reading any tutorial for beginners should get you started.

So, how could we test the mirrors speed? One way to do it would be to download the same file from each mirror and then compare the results (the time needed to complete the download will be used to calculate the download speed of each mirror at that particular time of the day).

Our test file should be small enough but not too small as that would make our results irrelevant. Also, it has to be in the repos regardless of the software that comes and goes. One of the best candidates would be **srclist.main.bz2** located in the base section of the repo, as this file has an optimal size (around 400K) and is always there. Since some mirrors might be offline for maintenance, or really slow to respond, we will first test if they respond in a timely manner and only then test their speed. After running the speed test, we will process the results and output a sorted list (starting with the fastest mirror). We should also inform the user if any of those mirrors timed out, or if the URL could not be found.

Any scripting language would be OK for this task, though Perl was my language of choice here. With Perl, there is a thing called CPAN, and it has literally thousands of modules of which many will make your life so much easier.

Let's move on...

All Perl scripts start with the famous she-bang line:

```
#!/usr/bin/perl
```

Linux takes the presence of the first two characters as an indication that the file is a script, and tries to execute that script using the interpreter specified by the rest of the line.

Note that in Perl, every simple statement must end in a semicolon, unless it is the final statement in a block (put the semicolon in anyway because you might eventually add another line).

The next two lines will force you to write better code. You should use them every time you write a Perl script as they will help you a lot:

```
use strict;  
use warnings;
```

The line 'use strict' turns on the 'strict' pragma, which forces you to declare your variables with the my keyword, and also spits out errors if the code contains

any barewords that can't be interpreted in their current context. The 'use warnings' line means all possible warnings are enabled, and it's the cheapest way to find bugs.

Also, we're going to use two Perl module in our script: Time::HiRes and LWP::UserAgent. The first one helps us calculate the download time and the second one is our web user agent:

```
use Time::HiRes qw(gettimeofday);
use LWP::UserAgent;
```

Now, what is that qw thing ? The 'quote word' function qw() is used to generate a list of words. In the above case, it has the effect of importing the gettimeofday function from the Time::HiRes module. It does this by providing the list 'gettimeofday' to the use function.

Next, we're going to define some of our variables. Perl has three types of variables and uses different symbols as prefixes for each type of variable:

- * a scalar stores a single value and it is prefixed with a dollar sign (\$)
- * an array stores a list of values and it is prefixed with an at-sign (@)
- * a hash is an associative array (a paired group of elements) and it is prefixed with a percent sign (%)

We will only use scalars and arrays in our script.

If you study the URLs for our test file you can see they all have a similar format:

```
*tp://***/...../pclinuxos/2007/base/srcli
st.main.bz2
```

We're going to split the links right before that common part and recreate them later when needed. There are mainly two reasons for that:

- * we want our code lines length under 80 chars (it's not a must though... but it's nicer)
- * second one might sound weird but believe me it's true: code guys are lazy... :-)

Also, we need to define three arrays here: the one that will hold the test results, the one that will hold the list of mirrors that timed-out or are not valid (if any) and the one that holds the list of our mirrors. The first two arrays are empty at this stage of the script.

```
my $testfile =
"pclinuxos/2007/base/srclist.main.bz2";
# a scalar
my @timedList = (); # an empty array
my @badList = (); # another empty array
my @reposList = (
    "http://ftp.riken.go.jp/pub/Linux/pcl
inuxos/apt/",
    "http://ftp.kddlabs.co.jp/Linux/packa
ges/pclinuxos/apt/",
    "http://ftp.jaist.ac.jp/pub/Linux/PCL
inuxOS/apt/",
    "http://mirror.pclinuxclub.com/pclinu
xos/apt/",
```

```

"http://www2.mirror.in.th./osarchive/
pclinuxos/pclinuxos/apt/",
"http://ftp.twaren.net/Linux/PCLinuxO
S/apt/",
"http://gnupg.cdpa.nsysu.edu.tw/Linux
/PCLinuxOS/apt/",
"http://mirror.internode.on.net/pub/p
clinuxos/apt/",
"ftp://mirror.aarnet.edu.au/pub/pclin
uxos/apt/",
"http://na.mirror.garr.it/mirrors/pcl
inuxos/apt/",
"http://ftp.ch.debian.org/mirror/pcli
nuxos/apt/",
"http://gnustep.ethz.ch/mirror/pclinu
xos/apt/",
"http://debian.ethz.ch/mirror/pclinux
os/apt/",
"ftp://ftp.pbone.net/pub/pclinuxos/ap
t/",
"http://ftp.klid.dk/ftp/pclinuxos/apt
/",
"http://mirrors.lastdot.org:1280/pclo
s/apt/",
"http://mirrors.xservers.ro/pclinuxos
/apt/",
"http://ftp.heanet.ie/pub/pclinuxos/a
pt/",
"http://ftp.belnet.be/mirror/pclinuxo
nline.com/apt/",
"http://ftp.nl.freebsd.org/os/Linux/d
istr/texstar/pclinuxos/apt/",
"http://ftp.sh.cvut.cz/MIRRORS/pclinu
xos/apt/",

```

```

"ftp://cesium.di.uminho.pt/pub/pclinu
xos/apt/",
"http://distrib-
coffee.ipsl.jussieu.fr/pub/linux/pclinuxo
s/apt/",
"http://ftp.cc.uoc.gr/mirrors/linux/p
clinuxos/apt/",
"http://ftp.leg.uct.ac.za/pub/linux/p
clinuxos/apt/",
"http://spout.ussg.indiana.edu/linux/
pclinuxos/pclinuxos/apt/",
"http://ftp.uwsg.indiana.edu/linux/pc
linuxos/pclinuxos/apt/",
"http://ftp.ussg.iu.edu/linux/pclinux
os/pclinuxos/apt/",
"http://pclosusers.com/pclosfiles/",
"http://distro.ibiblio.org/pub/linux/
distributions/texstar/pclinuxos/apt/"
); # array containing our mirrors
URLs

```

Now, we print to the terminal that we are downloading our file from each mirror and add a new empty line after our message, so that it looks nice in terminal:

```
print "Downloading srclist.main.bz2 from
each mirror...\n";
```

The `\n` means the `n` is “escaped”, thus it has a special meaning to Perl, i.e. add a new line.

Let's run our test for each and every mirror in our @reposList. For that we use a foreach loop – the name says it all, it runs the same code block for each element in our array:

```
foreach my $url (@reposList) { #
  foreach loop: for each element execute
  code block
```

In our code block, we will recreate the complete URL for our test file (by concatenating each element of @reposList and \$testfile), we'll fire up a web user agent:

```
my $link = "$url$testfile";      #
concatenate: recreate original link
my $ua = LWP::UserAgent->new();
# fire up new web user agent
```

and we instruct it to test whether the mirror times out, show progress during download and time the download of the test file:

```
$ua->timeout(3);      # set timeout
interval
$ua->show_progress('TRUE');      #
turn on progress indicator
my $t0 = gettimeofday();      # get
time right before download
my $response = $ua->get($link);
# download test file
my $t1 = gettimeofday();      # get
time right after download
```

Now that we got our result, we're going to use some programming magic called “regex”:

```
$url =~ s|(\w+://.*?)(:\d+)?/(.*)|$1|;
# use regex to format URL
```

We used regular expressions to alter the URL string. We want to show the user something readable and easy to figure out, therefore we want to keep only the server name and disregard the port number (if any) and the rest of the path. I won't get into details, as explaining regexes is beyond the scope of this article.

If the response is successful, we'll add the mirror and the time result to our @timedList; if not we'll add it to our @badList. For that, we use a conditional block and Perl's push() function – as the name says, it pushes a value onto the end of an array.

```
if ($response->is_success) {      #
conditional block: if condition...
my $delta = ($t1 - $t0);      #
calculate download time
my $line = $url.' '.$delta;      #
line up URL and corresponding time
push(@timedList, $line);      #
add line to the timed mirrors list
} else {      # end of if
block, start of else block: if not
condition...
push(@badList, $url);      #
add URL to the bad list
```

```

    }      # end of else block
}      # end of foreach loop

```

As you can see, we declared some of our variables inside the foreach loop – the reason is that they are only used inside that loop.

After the foreach block executes for all mirrors it's time to sort the results and present them to the user. We'll use a special “technique” to sort the results – the Schwartzian Transform (ST) – a method for sorting a data structure on an arbitrary key efficiently and with a minimum amount of Perl code. We map the original list into a list of references to lists containing the original and transformed values. The list of references will be sorted and then mapped back into a plain list containing the original values. Clear as mud ?

```

my @transformList = map { [ $_,
    (split)[1] ] } @timedList; # transform:
value, sortkey
my @tempSort = sort { $a->[1] <=> $b->
    [1] } @transformList;      # sort
my @sortedList = map { $_->[0] }
    @tempSort ;              # restore original
values

```

Like most Perl syntax, the join, map, sort, and split functions work right-to-left so we can make that even shorter:

```

my @sortedList =      # remember, we
read this right-to-left...
    map { $_->[0] }    # restore

```

```

original values
    sort { $a->[1] <=> $b->[1] }      #
sort
    map { [$_, (split)[1] ] }
@timedList;      # transform: value,
sortkey

```

OK, we're almost there... We print out another message:

```

print "\nMirrors speed (time to get 400
KB):\n";

```

then we print the list with our results:

```

foreach (@sortedList) {      # loop: for
each element...
    print "$_", "s\n";
}      # end of foreach loop

```

Wait a second... what is that \$_ ? That is the Default Input and Pattern Searching Variable. If you don't specify a variable to put each element into, \$_ is used instead. We used the above instead something like

```

foreach my $item (@sortedList) {      #
loop: for each element...
    print "$item", "s\n";
}      # end of foreach loop

```

which would have yielded the same result.

We also want to tell the user whether there were any mirrors that for some reason didn't respond:

```
if (@badList) {      # conditional block
    print "\nThe following mirrors timed
out or are not valid :\n";
    foreach (@badList) {      # loop:
for each element...
        print "$_", "\n";
    }      # end of foreach loop
}      # end of conditional block
```

This is it folks ! You can download the whole script here:

<http://linuxgator.org/forums/viewtopic.php?f=15&t=1719>

Or, you can enter the entire script (below), and save it to your computer. To do that, you should create a new empty file (document that is). Name it as you wish, let's say repotest.pl... the extension is not mandatory, but it's a good habit to use extensions. It gives you an idea on what that file deals with. You can copy/paste my code inside, with no problem, as PERL doesn't care much about indentation. So, it should be pretty straightforward (you can always consult the one on the forum if anything goes wrong). When you're done, save the file and make it executable. You can then open a terminal in the containing directory and run

```
./repotest.pl
```

to see what it does. If you're planning on using it often, then you should consider removing the extension and placing the script in your ~/bin (that is, the folder bin

inside your home), and then you can use it by simply opening a terminal (from any location) and running

```
repotest
```

I hope this article opens your appetite for learning Perl... you will find out that it truly is "the Swiss Army chainsaw of scripting languages".

Yours,

Don

The entire script:

```
#!/usr/bin/perl

use strict;
use warnings;
use Time::HiRes qw(gettimeofday);
use LWP::UserAgent;

my $testfile =
"pclinuxos/2007/base/src/lslist.main.bz2";
my @timedList = ();
my @badList = ();
my @reposList = (
    "http://ftp.riken.go.jp/pub/Linux
/pclinuxos/apt/",
    "http://ftp.kddlabs.co.jp/Linux/p
ackages/pclinuxos/apt/",
```

```

    "http://ftp.jaist.ac.jp/pub/Linux
/PCLinuxOS/apt/",
    "http://mirror.pclinuxclub.com/pc
linuxos/apt/",
    "http://www2.mirror.in.th./osarch
ive/pclinuxos/pclinuxos/apt/",
    "http://ftp.twaren.net/Linux/PCLi
nuxOS/apt/",
    "http://gnupg.cdpa.nsysu.edu.tw/L
inux/PCLinuxOS/apt/",
    "http://mirror.internode.on.net/p
ub/pclinuxos/apt/",
    "ftp://mirror.aarnet.edu.au/pub/p
clinuxos/apt/",
    "http://na.mirror.garr.it/mirrors
/pclinuxos/apt/",
    "http://ftp.ch.debian.org/mirror/
pclinuxos/apt/",
    "http://gnustep.ethz.ch/mirror/pc
linuxos/apt/",
    "http://debian.ethz.ch/mirror/pcl
inuxos/apt/",
    "ftp://ftp.pbone.net/pub/pclinuxo
s/apt/",
    "http://ftp.klid.dk/ftp/pclinuxos
/apt/",
    "http://mirrors.lastdot.org:1280/
pclos/apt/",
    "http://mirrors.xservers.ro/pclin
uxos/apt/",
    "http://ftp.heanet.ie/pub/pclinux
os/apt/",
    "http://ftp.belnet.be/mirror/pcli
nuxonline.com/apt/",

```

```

    "http://ftp.nl.freebsd.org/os/Lin
ux/distr/texstar/pclinuxos/apt/",
    "http://ftp.sh.cvut.cz/MIRRORS/pc
linuxos/apt/",
    "ftp://cesium.di.uminho.pt/pub/pc
linuxos/apt/",
    "http://distrib-
coffee.ipsl.jussieu.fr/pub/linux/pclinuxo
s/apt/",
    "http://ftp.cc.uoc.gr/mirrors/lin
ux/pclinuxos/apt/",
    "http://ftp.leg.uct.ac.za/pub/lin
ux/pclinuxos/apt/",
    "http://spout.ussg.indiana.edu/li
nux/pclinuxos/pclinuxos/apt/",
    "http://ftp.uwsg.indiana.edu/linu
x/pclinuxos/pclinuxos/apt/",
    "http://ftp.ussg.iu.edu/linux/pcl
inuxos/pclinuxos/apt/",
    "http://pclosusers.com/pclosfiles
/",
    "http://distro.ibiblio.org/pub/li
nux/distributions/texstar/pclinuxos/apt/"
);
print "Downloading srclist.main.bz2
from each mirror...\n";
foreach my $url (@reposList) {
    my $link = "$url$testfile";
    my $ua = LWP::UserAgent->new();
    $ua->timeout(3);
    $ua->show_progress('TRUE');
    my $t0 = gettimeofday();

```

```

my $response = $ua->get($link);
my $t1 = gettimeofday();
$url =~
s|(\w+://.*?)(:\d+)?/(.*)|$1|;
if ($response->is_success) {
    my $delta = ($t1 - $t0);
    my $line = $url.' '.$delta;
    push(@timedList, $line);
} else {
    push(@badList, $url);
}
}
my @sortedList =
    map { $_->[0] }
    sort { $a->[1] <=> $b->[1] }
    map { [$_, (split)[1] ] }
@timedList;
print "\nMirrors speed (time to get
400 KB):\n";
foreach (@sortedList) {
    print "$_", "s\n";
}
if (@badList) {
    print "\nThe following mirrors
timed out or are not valid :\n";
    foreach (@badList) {
        print "$_", "\n";
    }
}

```



Visit Us On IRC

- Launch your favorite IRC Chat Client software (xchat, pidgin, kopete, etc.)
- Go to freenode.net
- Type "/join #pclinuxos-mag" (without the quotes)

Video File Format Comparison

by Paul Arnote

In my series of articles comparing various file formats (July, 2009: Graphic File Format Comparison, August, 2009: Audio File Format Comparison), I turn my attention to video file formats. Although we commonly call them video file formats, they are really containers for combining separate video and audio information into a synchronized data stream.

In my previous two articles, we talked about graphic and audio formats being either lossy or lossless in their compression. Because video files are so large, it is not common or practical to use uncompressed video. Thus, nearly all of the video formats use some type of compression, and for the most part, all of those compression techniques are considered lossy.

Before we can talk about the various video file formats, there are a few terms we need to become familiar with. Mind you that entire chapters of books have been written to explain these terms and formats. In this medium, I'm going to try to give the most simplified explanation as I can, mostly because we don't need to know all the intricacies involved to understand what they mean.

The first of these is *bitrates*. Bitrates refer to how many bits per second are used to represent the video portion of the file. These can vary from as low as 300 kbps (kilobits per second) for low quality video, to as high as 8,000 kbps for very high quality video. Just as with sound files, a higher bitrate translates to a better quality video.

The next thing we need to discuss is how the image appears. We have two terms to describe the video image: *interlaced* and *progressive*. Interlaced video is a way to make the best use of the limited bandwidth for transmitting video, especially in the older days of analog NTSC broadcasts. The receiver (your TV) "tricks" your eyes by drawing first the odd number lines on the screen 30 times per second (25 times per second in Europe), and alternating the drawing of the even numbered lines on the screen 30 times per second, in an odd — even — odd — even — odd — even pattern. Progressive video draws both the odd and even numbered lines at the same time, instead of alternating them. This makes the picture appear sharper and more vivid.

Next, is *resolution*. In the analog video days, video was commonly the equivalent of 352 x 240 pixels for NTSC video in North American, and 352 x 288 for PAL/SECAM video elsewhere. Today's digital televisions can display up to 1920 x 1200 pixel pictures. Computer monitors have much higher display resolution than conventional analog televisions. The move to digital televisions has made it feasible to multi-task the family television to double as a large computer monitor. A common resolution for DVD quality video is 720 x 480 for NTSC, and 720 x 576 for PAL/SECAM systems. The resolution for the new high definition television broadcasts are even higher, and provide Blu-Ray quality, able to display a pixel-for-pixel representation of the highest High Definition television specification at 1920 x 1200 pixels.

Formats, or Containers

Theora

We start with the Theora container, because it is open source. And, because this is a Linux publication, we are particularly fond of open source solutions. Developed by the Xiph.Org Foundation as part of the OGG project, it is derived from On2 Technologies' VP3 video codec. It's also named after Theora Jones, Edwin Carter's Controller on the old Max Headroom television show.

Because it is developed and maintained by the Xiph.Org Foundation, it commonly has Vorbis formatted audio streams, placed into an OGG container. Since On2 Technology released the VP3 codec and its source code to the public under an open source and free software license, and disclaimed any rights and patents on the technology in September 2001, it allowed anyone to use Theora and other VP3-derived codecs for any purpose. In 2002, On2 inked an agreement with the Xiph.Org Foundation to make VP3 the basis of a new and free Theora video codec, and declared Theora to be the successor to VP3.

The first stable v1.0 release of Theora was in November 2008. Since it is a relatively new format that has very little commercial support, Theora has struggled to gain acceptance from distributors, especially on the web. Yet, as the only mature and royalty free video codec, Theora is well established as a baseline video format in modern free software, and has become the format of choice for many other organizations (e.g., Wikipedia).

Theora does not make use of hardware acceleration, but because its algorithm is less complex than H.264, which is used by the competing MP4 format, the need for hardware acceleration is not considered to be as relevant.

There are several applications in the PCLinuxOS repository that can play, stream and edit Theora video files. For encoding, VLC and HandBrake are available. Cinelarra can edit Theora video files, while VLC can stream them.

MPEG-1

While development of the MPEG-1 standard began in 1988, it wasn't until 1992 that the final standard was approved and the first MPEG-1 decoder was made available. Compressing video 26:1 and audio 6:1, the MPEG-1 format is designed to compress VHS quality raw digital video and CD audio with a minimum of quality loss.

Today, it is the most widely compatible lossy compression format in the world. MPEG-1 standard is part of the same standard that gives us the MP3 audio format. Fortunately, the MPEG-1 video and Layer I/II audio can be used royalty free and without license fees, since the patents expired in 2003. Only the MPEG-1 Layer 3 Audio format (more commonly known as MP3) is still covered by patents and licensing restrictions.

The "standard" MPEG-1 video bitrate is 1,150 kbps,

with audio at 224 kbps and 44.1 kHz sample rate. The video is recorded at 352 x 240 pixel screen size for NTSC, and 352 x 288 pixel screen size for PAL/SECAM systems. One distribution format that makes wide use of the MPEG-1 format is the Video Compact Disc, or VCD. Although it never caught on in the U.S., other parts of the world have seen wide adoption of the VCD, due to its relatively inexpensive production costs, coupled with the VCD's ability to withstand high humidity environments (as present in Southeast Asia) better than VHS tape.

MPEG-1 formatted video files are easily read by most of the video programs in the PCLinuxOS repository.

MPEG-2

The MPEG-2 format was born from the shortcomings of the MPEG-1 format. Specifically, the MPEG-1 format had less efficient audio compression, a lack of flexibility when it came to the packet types it accepted, and it does not support interlaced video. MPEG-2 is also the format of choice for digital television broadcasts.

Work on the MPEG-2 format began in July, 1990 – before the first draft of MPEG-1 was ever written. It was intended to extend the MPEG-1 format to provide full broadcast quality video at high bitrates, between 3 – 5 Mbits/s, and added support for interlaced video.

MPEG-2 is the designated format for movies and other programs that are distributed on DVD, SuperVCD, and BluRay discs. As a result, the televisions in our living rooms, along with the TV broadcast stations and our

DVD players are designed to the MPEG-2 standard.

Because MPEG-2 evolved from the MPEG-1 format, all standards compliant MPEG-2 decoders can also play MPEG-1 video streams. Thus, even though you may not realize it, you can play VCDs in most home DVD players.

Currently, over 640 patents, owned by more than 20 corporations and one university, and the patent pool managed by the MPEG Licensing Authority, burden the MPEG-2 format. In jurisdictions where software patents are upheld and enforced (currently, the U.S. is included in those jurisdictions), use of the MPEG-2 format requires payment of licensing fees to the patent owners. It's best to check the laws of your jurisdiction, since they vary so widely. For example, software patents are not allowed in India and the Philippines, but they are in Japan and Korea, and to a limited extent, in Europe and Australia. Hence, this is one of the reasons that PCLinuxOS does not come with DVD playback software enabled by default; rather the end user must install the necessary libraries and dependencies themselves, based on the laws of their relevant jurisdiction.

MPEG-4

MPEG-4 represents a patented collection of methods to define compression of video and audio, designating a standard for a group of audio and video codecs. MPEG-4 encompasses many of the features of MPEG-1 and

MPEG-2, while adding support for 3-D rendering, Digital Rights Management (DRM), and various types of interactivity.

MPEG-4 files are commonly encoded with codecs like DivX, Xvid, 3ivx, and x264 to name a few, and may be used by BluRay discs. Since most of the features of the MPEG-4 standard are left to the discretion of the individual developers to implement, they are free to choose which parts of the MPEG-4 format to implement. Thus, a “full implementation” of the MPEG-4 format does not exist, and most likely will never exist.

Introduced in late 1998, more than two dozen companies claim ownership of patents related to MPEG-4. The licenses for use of the MPEG-4 format (in jurisdictions where software patents are upheld and enforced) is handled by the MPEG Licensing Authority.

MPEG-4 files can usually be easily viewed on PCLinuxOS, using VLC or MPlayer.

QuickTime

Initially released in December, 1991, the QuickTime format is released under a proprietary license from Apple, beating Microsoft’s Video for Windows to the “market” by nearly a full year. Developed as a multimedia framework by Apple, Inc., it is capable of handling various formats of digital video, media clips, sound, text, animation, music, and interactive panoramic images. The most current stable release is QuickTime 7.6.2, and is available for Mac operating systems, and computers running Windows. Although no

formal implementation exists for Linux, there are a number of programs in Linux which can handle (with varying degrees of success), QuickTime video playback. Possibly the best of the Linux programs that can handle playback of most QuickTime files are VLC and MPlayer, both of which are in the PCLinuxOS repository.

In February, 1998 the International Standards Organization approved the QuickTime file format as the basis of the MPEG-4 file format. The benefit is that MOV and MP4 files (containers) are interchangeable on a QuickTime-only environment (meaning running in an “official” QuickTime player, like QuickTime on the Mac OS X or QuickTime for Windows), since both use the same MPEG-4 codecs.

AVI

AVI, more formally known as Audio Video Interleave, was released in November, 1992 by Microsoft as a part of its Video for Windows technology. It is basically a file container the allows synchronized audio and video playback.

Since AVI files do not contain pixel aspect ration information, and many players render AVI files with square pixels, the frame (image) may appear stretched or squeezed horizontally when played back. However, VLC and MPlayer have solved most problems related to the playback of AVI files.

Although being “older” technology, there is a benefit to using AVI files. Because of it being around for so long, coupled with Microsoft’s market penetration, AVI files can frequently be played back on the widest variety of systems and software, second only to MPEG-1. It has gained widespread acceptance and adoption throughout the computer industry, and can be successfully played back, so long as the end user has the proper codec installed to decode the video properly. Additionally, the AVI format is well documented, not only from Microsoft, but also many, many third parties.

Matroska

Matroska files, commonly recognized by either their *.mkv file extension, represent a multimedia container that is an open standard free container format. It can hold an unlimited number of video, audio, picture, or subtitle tracks in a single file. Implementations of the Matroska format consists mostly of open source software.

The word, matroska, is an English word derived from the Russian word matroyshka, the name for the nesting doll, where one egg-shaped doll is found inside another, then another, and so on.

Matroska video files (*.mkv) can be played back on a wide variety of software in PCLinuxOS, including MPlayer, VLC, Avidemux, and MythTV. And, because Matroska is an open standards project, much like Theora, the source code of the libraries are developed under the GNU LGPL. It has gained popularity recently, especially among the warez crowd for ripping and

distributing high definition content from HDTV and BluRay discs.

WMV

WMV, or Windows Media Video, is a compressed video file format, made with several different proprietary codecs, made by Microsoft. Originally intended to compete with RealVideo in 2003 as an alternative for streaming video, it has since gained adoption for use with BluRay discs.

The WMV files are often wrapped in the ASF, or Advanced Systems Format. WMV files, themselves, are not encoded. Rather, the ASF wrapper is often responsible for providing the support for digital rights management, or DRM. Based on Windows Media 9, WMV files can also be placed inside either an AVI or Matroska container. In that case, the WMV file claims either the AVI or MKV file extensions.

WMV files can be played on PCLinuxOS, using VLC, MPlayer, or most any other program that uses the FFmpeg implementation of the WMV codecs.

3GP

The 3GP format is actually two similar formats. The first, 3GPP, is designed as a container format for GSM phones (in the U.S., primary GSM wireless carriers are AT&T and T-Mobile). The second, 3GPP2, is designed as a container format for CDMA phones (in the U.S.,

primary CDMA wireless carriers are Verizon and Sprint). 3GPP files will often carry a 3GP file extension, while 3GPP2 files will often carry a 3G2 file extension.

3GP and 3G2 files store video streams using MPEG-4 Part 2, H.263, or AVC/H.264 codecs. Some cell phones will use the MP4 file extension to represent 3GP video. Both formats were designed to decrease storage and bandwidth requirements to accommodate mobile phones.

Software support under PCLinuxOS is, once again, achieved with VLC and MPlayer. Additionally, 3GP files (and most 3G2 files) can be encoded and decoded with FFmpeg.

FLV

FLV files, also known as Flash Video, are a file container format used primarily to deliver video over the Internet. In fact, it has become the defacto format of choice for such sites as YouTube, Google Video, Yahoo! Video, Metacafe, and many news outlets.

While the FLV format is an open format, the codecs used to produce FLV files are mostly patented. The most common codecs used are the Sorenson Spark (H.263 codec variant) and On2's VP6. FLV files can also be encoded as H.264 in the more recent releases of Adobe Flash.

Most audio in an FLV file is recorded as MP3, although there are a few proprietary audio codecs used. Uncompressed ADPCM (Audio-Digital Pulse Code

Modulation) can also be used to record audio in an FLV file. More recent versions (from Flash 9, upwards) also support the recording of audio in the AAC (Advanced Audio Coding) format.

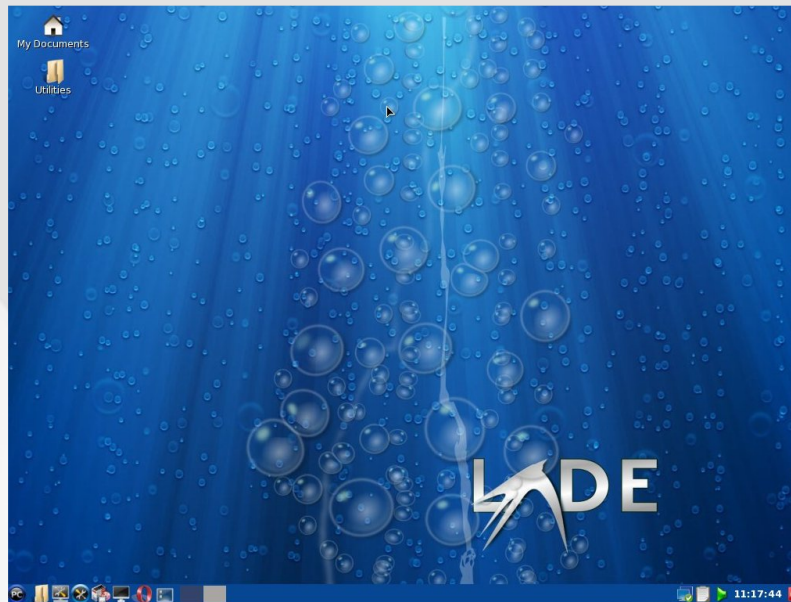
Under PCLinuxOS, VLC and MPlayer support playback of FLV files. One can also encode FLV files with FFmpeg. Additionally, it's usually a simple matter, using Avidemux, to convert from the FLV format to another, more universally read format – such as AVI or MPEG-1. You can also use Avidemux to edit FLV files.

And by the way – changing the file extension from FLV to AVI does not make it an AVI file. Rather, it's just an FLV file with an AVI file extension. Simply changing the file extension does nothing to the file header in the video file, which is what determines they type of video file it really is. I point this out because of a post in the forum some time ago (perhaps a year ago?) that made this erroneous assertion. The poster achieved the results they did merely because the system knew how to handle a file with the AVI file extension, by playing it in VLC or MPlayer. In actuality, the programs are playing the FLV file, not an AVI file – something they already have the capability to do.

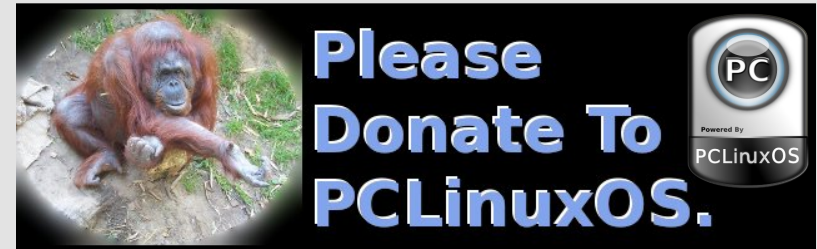
Summary

I hope this helps alleviate any confusion you might have had regarding video file formats. Plus, having a basic understanding of the various video file formats is

helpful when trying to figure out how to convert from one format to another. While this isn't meant as a comprehensive overview or discussion of the subject matter – entire books have been written, trying to cover the topic – it should be enough to get you at least started in the right direction. And, there are many more file formats out there that I didn't talk about. Rather, I hand-picked some of the more common ones that you are likely to find or have a need to “work with.”



The PCLinuxOS Magazine



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In the Mood for PCLOS



Who's the crazy Texan well he's one of those guys
Made a new OS and it's no surprise
I'll just ask him baby won't you show it to me
Hope he tells me maybe he's THE MAN you see

So I said to Tex I don't mean to be rude
He said don't keep me waitin'
When I'm in the mood

First I saw the code just a wee little glance
Then we went to safe mode I was in his trance
I said Tex won't you show me some more
He said baby you're a bit of a bore

I said Tex I'm not a prude
Don't keep me waitin'
When I'm in the mood

In the mood for his scriptin'
In the mood for his encriptin'
In the mood my heart's a flippin'
It didn't take me long to say I'm in the mood now

In the mood for PCLOS
In the mood it really is the best
In the mood what a great success
It didn't take me long to say I'm in the mood now

I went to the forum just to tell 'em my news
All of my info to them infuse
They said baby if you tell us the scoop
We'll just maybe let you into the loop

I said I don't mean to intrude
They said don't keep us waiting
When we're in the mood

Tex has made this neat little box
Everything about it well it really rocks
They said baby won't you tell us some more
It's everything you're a looking for

Tex really is one cool dude
Let's go get it
While we're in the mood

In the mood for his down loadin'
In the mood for his crazy codin'
In the mood our hearts are explodin'
It didn't take us long to say we're in the mood now

In the mood for PCLOS
In the mood it really is the best
In the mood what a great success
It didn't take us long to say we're in the mood now

Movie Archiving With dvd::rip

by Malcolm Ripley (malc)

Why would you want to archive your movies? Well in my case, it was space and convenience. Far too many CD's and DVD's to have easily accessible on shelving -- literally a room full! A 1TB USB disk drive costs under £70 (\$100) and could easily accommodate all my music, movies and photos. In addition it can be plugged into the PS3, which is itself plugged into an AV receiver, and from there into a hi-def TV. A perfect, simple solution. As an added bonus, a PSP can be used as a remote control for music so that the TV does not have to be switched on.

In the past, I had compressed some movies for my kids to play on their PSP's, and I did this using a PC. Back then, I had ripped and converted the movies to about 200MB/hour prior to PSP conversion (it has it's own MP4 format!). The full size were just about watchable but dark areas were quite low quality. At 300MB/hour the movie is passable although dark areas are still "blocky" even on a TV at distance. At 400MB/hour the movie was indistinguishable from the original (on a TV). Not only that, but with the PS3 1080p upscaling, the quality was suprisingly very good. So there we have it -- 400MB/hour was the target.

Preparation

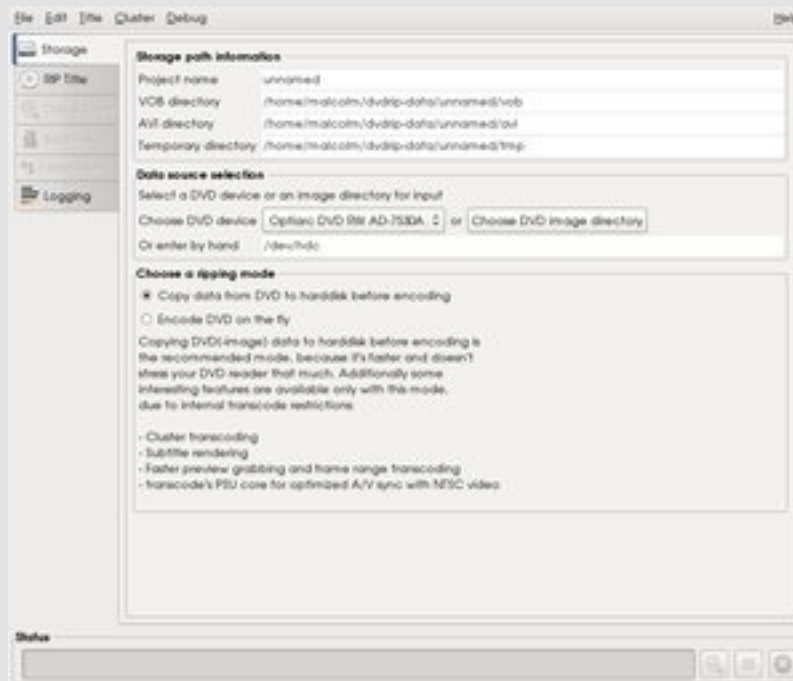
You need to download and install dvd::rip using Synaptic. The download will include the DVD decrypting library libdvdcss2, if you have not already done so.

You will need several GBs of space to proceed, enough to accommodate a ripped and compressed movie. A ripped movie can, in theory, take up almost 8GB plus the compressed version of 1.5GB. So you need at least 10GB.

Take note that, at present, only movies without subtitles can be encoded. This is under investigation.

Getting Started

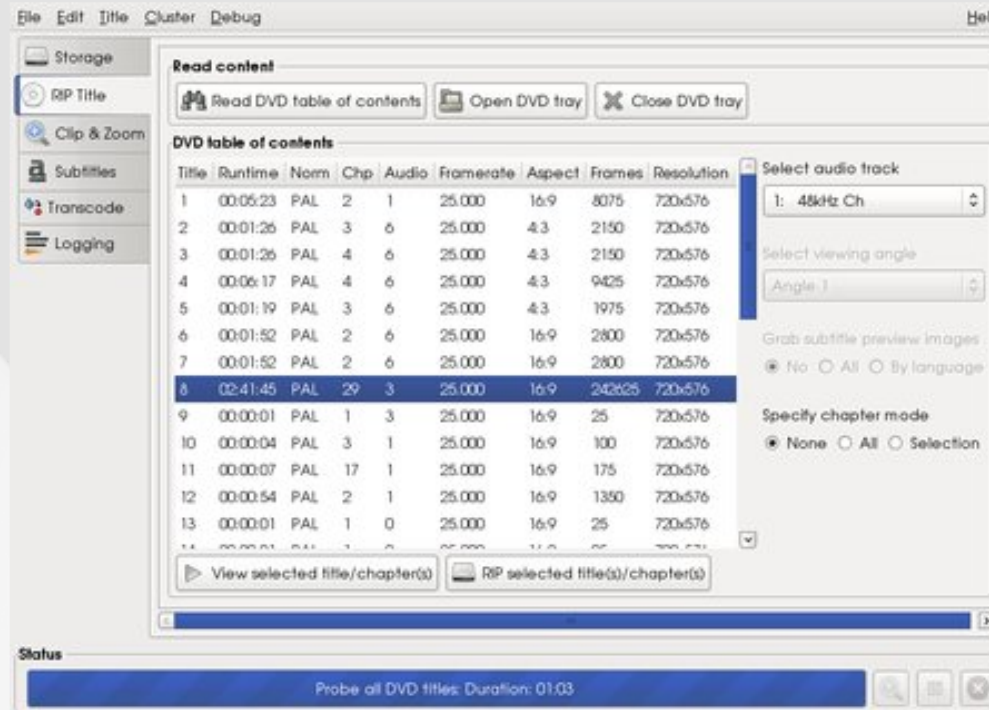
When you first start dvd::rip, you will be presented with, essentially, a blank screen. There is no need to set any preferences at this point, since the defaults are OK. To



get started, select File » New Project and the previous screen will be displayed.

Enter the project name (default unnamed), which cannot include any spaces, and then press Create project. The screen will now look as above, and it should be showing the correct DVD device as the data source. If you do need to change the setting and enter by hand (/dev/hdc in the example), then you can identify this for your machine by putting in a DVD, select Properties for the desktop icon and click Meta Info. The device node is the value you want.

Ensure Copy data from DVD... option is selected and press the tab labelled Rip Title, which takes you to the following screen:

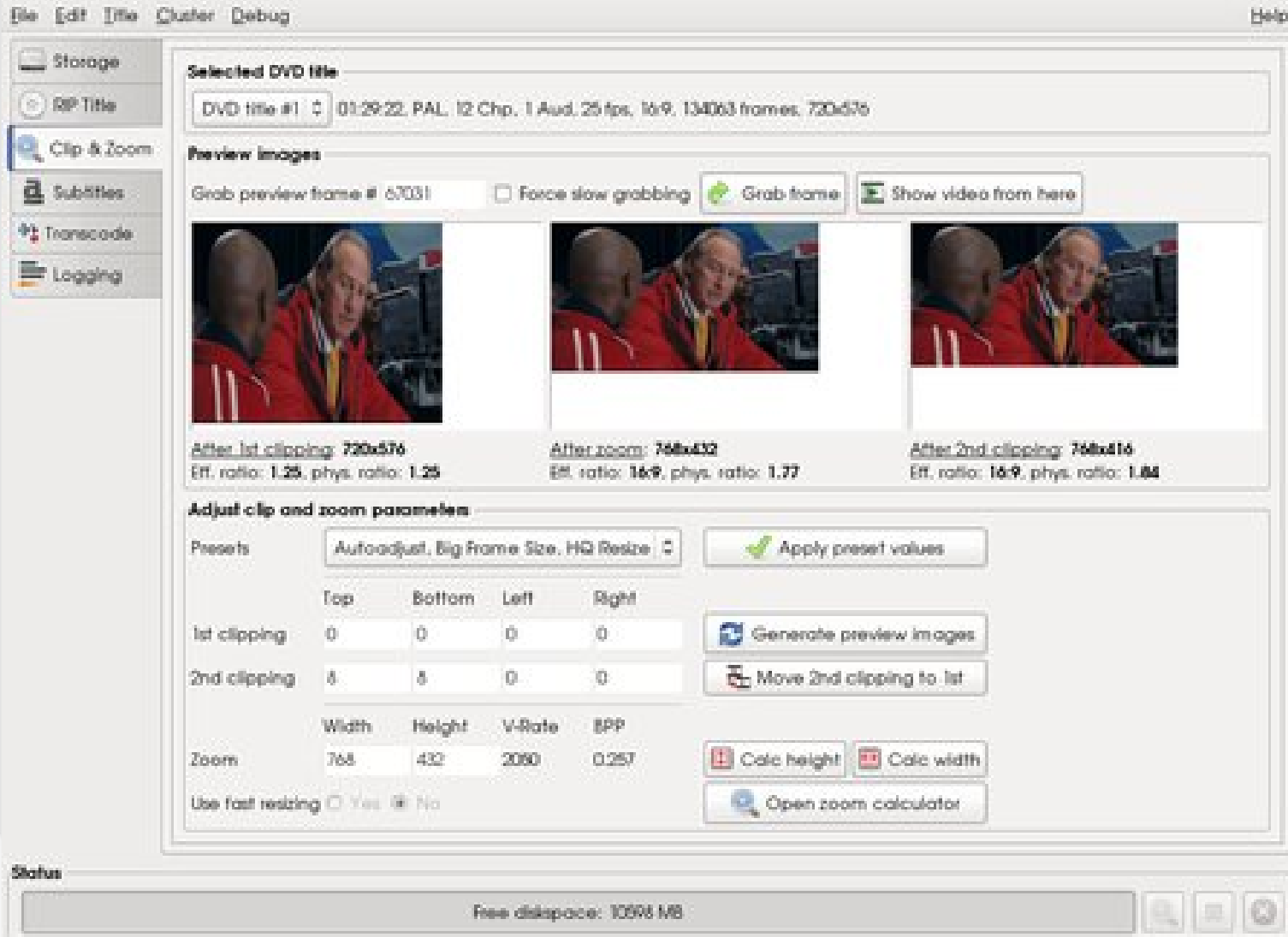


Initially, the contents area will be blank. Click on the button Read DVD Table of Contents, the disk will be scanned with all the titles listed and the main one auto selected. Most DVD's have the first audio track in English. However, if you have any doubts, then perform a check as following:

1. Click the Selection option under Specify Chapter Mode and select any chapter except the first or last (these almost always have the titles).
2. Check each audio track to find the one you want by reviewing with View selected title/chapter and take a note for the transcode step.

3. Re-select the None option.

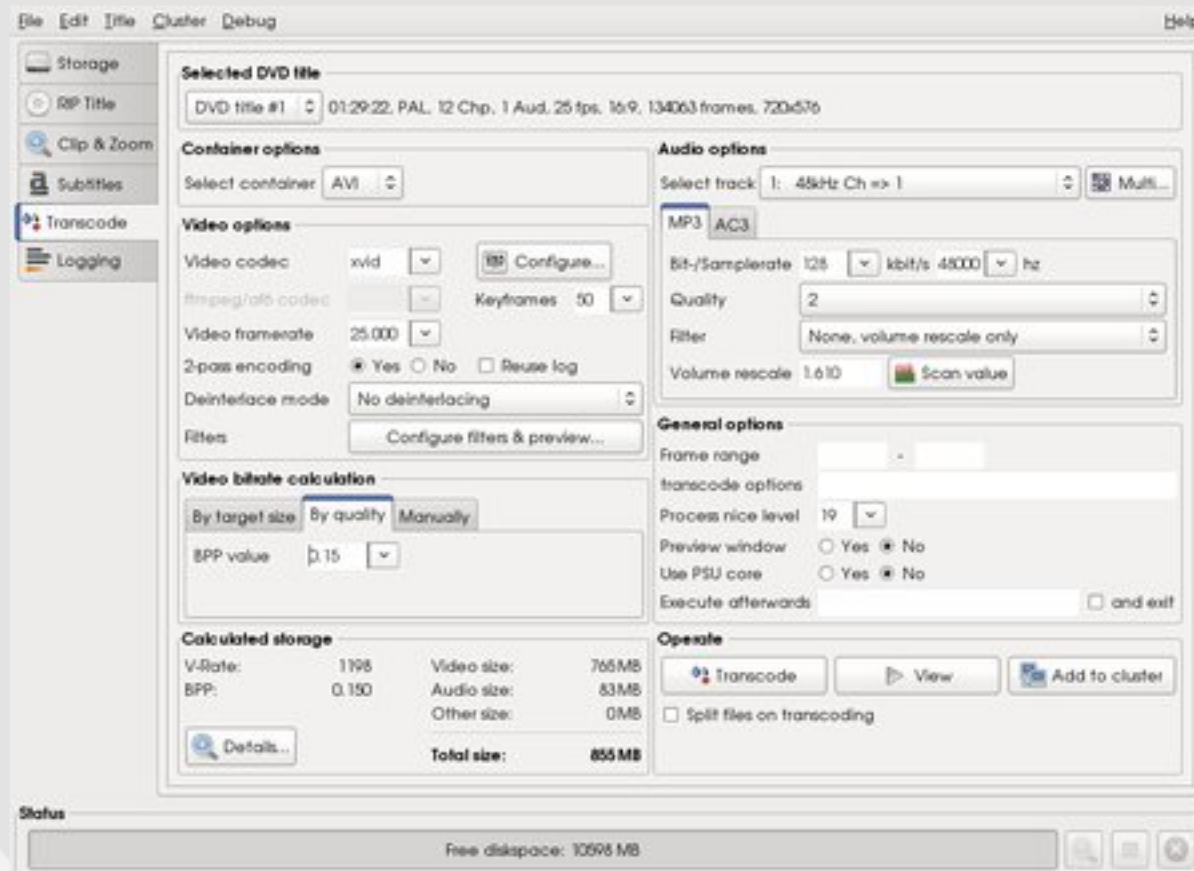
Now you can rip the title to your hard drive by pressing the button RIP Selected Titles(s)/Chapter(s). This will take a while. Ripping a 2 hour movie with my 1.8G dual core laptop takes 20 minutes. You can always flip to another desktop screen and do something else, which will slow the ripping down a little. Once the title has been ripped, select the Clip & Zoom tab where you will be presented with the following:



Use the preset value Autoadjust, Big Frame Size, HQ Resize and click the Apply preset values button. However, if the movie is full frame (ie TV format) I suggest using the Fast resize version. This creates a

smaller framed movie. A full frame is 50% larger (including the final file size) than a widescreen movie.

Now select the tab transcode and the following screen will be displayed:

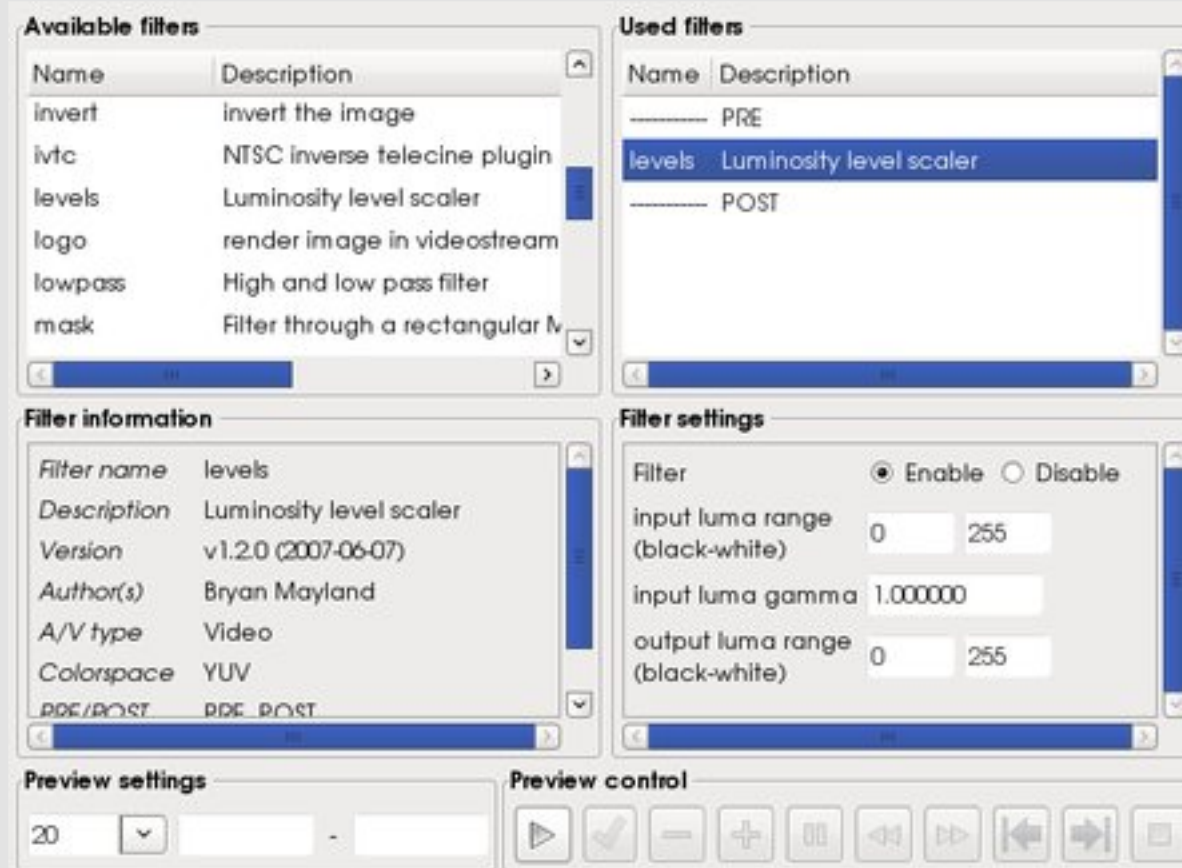


Some movies do not compress properly and end up with an out of synch audio track. The way round this is to miss out the first few frames. This is not normally an issue since most movies start with a studio banner and then the opening titles so skipping the first 10 seconds is not a problem. To save time (a lot of time!) apply this fix to all movies by default. You can do this under General options and set the Frame range (start) to 250 (300 in North America, due to the NTSC/ATSC frame rate of 29.97 frames per second, as opposed to the PAL standard of 25 frames per second) and leave the end of the range blank. This will clip 10 seconds from the start and so far, for myself, all movies are now in synch.

Some movies can be a little over dark (Alien v Predator Requiem for example). You

Don't panic! Almost all these settings are default values and don't need changing. The key values are Video codec: xvid, 2-pass encoding: yes, and no deinterlacing. Ensure the audio track is the one you chose when ripping and that Bit-/Samplerate: 128k/s 48000hz, Quality: 2, Filter: None, and Volume Rescale only.

can, optionally, lighten it up by specifying a filter under Configure filters & Preview :



Double click the levels filter from the top left list. Click and drag it on the top right list so that it is between PRE and POST. Set the gamma value in the bottom right to something larger than 1. Typically 1.5 to 2 will suffice. You can preview the effect using the preview controls. You can only perform a preview with the original disk not from the ripped titles. Should you attempt to preview without the disk inserted, you will get an error and dvd::rip gets a little confused; the error won't go away, even when you put the disk in. You have to save the project, quit dvd::rip and reload. Once the filter is

set, close the window to return to the transcode screen.

Finally now, we're to the transcoding step. Select Video Bitrate calculation » By Quality » 0.15 and then press Transcode. The transcode process takes hours. The second pass typically takes twice as long as the first.

You may be tempted to perform a single pass encoding to save time, but you do so at the expense of quality. There is a distinct difference between single and two pass encoded movies. Single pass movies seem to shimmer around image edges, such as the outlines of faces, buildings

etc. There is nothing to stop you transcoding while you work though. I have even done photo editing while a movie is transcoding.

Note: If you transcode overnight then you can start two dvd::rip sessions in parallel.

Potential Problems

When ripping a title, it can sometimes hang before it reaches the end. The movie can still be compressed, but proceed as follows:

1. With Konqueror, open up the folder «home»/dvdrip-data/«projectname»/vob/xxx/ and play the last vob file. Fast forward to the end if necessary to confirm that the end of the movie is there before proceeding with this workaround. So far this problem has only omitted the last small (often zero sized) vob file that contains only credits.
2. Save the project, quit and re-open.
3. On the Rip title screen, select the smallest chapter (except the first or last) and rip that.
4. Go to the Clip & Zoom screen and set the clipping as described previously. Here you are using the ripped chapter to assess the size.

5. Go back to the Rip title screen, set the chapter mode to None and

6. Go to the Transcode screen and proceed as previously described.

Summary

Once you get into the swing of things, it is suprisingly easy. Since it is possible to transcode “off-screen,” then 3 to 6 movies can be transcoded per day without interfering with normal usage.

Subtitles are a problem yet to be resolved. There are plenty of descriptions of how to do it, but none are trivial tasks, to put it mildly. Should I discover a simple “point and click” method, I’ll let you all know.



A Cheap Film Scanner

by Malcolm Ripley (malc)

A cheap scanner for archiving old snapshots for on screen viewing was desperately needed sooooo.....

I caught a YouTube video where somebody created a "scanner" from a lamp, paper, digital SLR etc.



However, this method creates a few problems, especially with transmitted light through the paper for a diffused light source, which highlights the grain of the paper. Also the glass used to hold the negatives highlights any dust.

Try this method:

1. Place a piece of white paper where the sun can illuminate it. This creates a very bright, even light source. I did this at my French windows.
2. Place two equal height supports either side. Make sure the supports do not reflect any light nor shade the paper.
3. Get hold of a film scanner negative holder (I had one from a very old SCSI scanner, now unusable) and place this on top of the supports.
4. Get a box which is large enough to envelop your camera to make into a tube. Ideally, the length of this tube should match the minimum focus distance of your camera.
5. Place the tube on top of the negative holder with the image to be scanned off center (I'm assuming most SLR's have the lens off center like mine). The off center placing is necessary to avoid distortion as you automatically tend to center the

camera at the edge of the tube, especially when your hands are in contact with the edges.

6. Photograph the negative.

7. Load the picture into Gimp and:

a) Use Tools » Transform Tools » Rotate , to align the image. You can use the edge of the rotate dialog to get this done accurately.

b) Use the rectangle select tool to select the negative area.

c) Edit » Cut

d) Edit » Paste as new image

e) Optionally rotate for landscape/portrait etc with the quick option: Image » Transform

f) Colors » Invert

g) Colors » Auto » White Balance

h) Optionally colors » color balance. My images tend to be a little blue/cyan so I increase the red and yellow hues.

Despite not having a macro lens on my 6Mb SLR I can get a decent 1.5Mb image using this method.

It's FAST VERY FAST! It takes less than 5 minutes to scan a 24 image reel of film. You can then do all the GIMP stuff when the sun sets, with a glass of red wine to help ;-)

Now, just a note about camera settings. The pictures must be clear so the usual settings are needed,



namely: as low an ISO setting as possible, and a minimum shutter speed of 1/125 (unless you use a tripod). I set my camera for programmed mode with a fixed ISO of 200. This worked fine, even when the sun went behind the inevitable Scottish clouds!

Further experimentation indicates that the best pictures are obtained by setting the camera to Raw format and using the Gimp Raw converter. This is a Gimp plug in that is in Synaptic. Using raw images I do the following:

1. Rotate landscape format so the edges are square.
2. Cut and paste new image.
3. Rotate to portrait if necessary.
4. Colors - Invert.
5. Colors - Levels, and adjust the range on each channel to encompass the main distribution.
Sometimes there is the odd values outside the main distribution.
6. Still with the levels, adjust the center slider on whichever channel has a color cast to remove that cast. In my case I usually have to adjust the blue channel from 1.0 to 0.9.
7. Filters - Enhance - Sharpen, with a value of between 40-45.

The above photo is an example of a negative scanned using the above methods, from a vacation to Crete in 1992.

Regards,

Malcolm



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