

# The **NEW** PCLinuxOS Magazine

Volume 35

December, 2009

Happy  
Holidays



**Holiday Gift &  
Stocking Stuffer Guide**

**Command Line Interface  
Intro: Part 3**

**Behind The Scenes: Linuxera**

**Create Panoramas With Hugin**

**Dropbox: File Synchronization  
Made Simple**

**Multimedia Mean Machine:  
ffmpeg**

**Wireless USB:  
The Next Frontier?**

**Gadgets & Gear: Samsung N510**

**Game Zone: Quake III Arena**

**Forum Foibles**

**DoubleTake/GIMP Tip**

**Computer Languages A to Z:  
Fortran**

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# Welcome From the Chief Editor

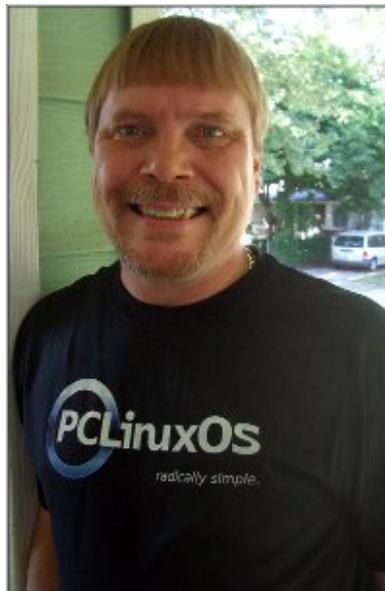
by Paul Arnote

Welcome to the December, 2009 issue of The NEW PCLinuxOS Magazine!

As the holiday season descends upon us, it's a time for sharing with friends and family. And, the PCLinuxOS community has become my second family – not to mention the fact that I have made a lot of friends here. So, I am happy to be able to share with my PCLinuxOS family and friends.

Once again, this month's magazine cover is created by Timeth. This month, we explore the next great stage of USB development, called **Wireless USB**. I continue my **Multimedia Mean Machine** article, taking a look this month at **ffmpeg**. I also take a look at **WinFF**, the GUI program that allows you to work with ffmpeg, without having to switch to the command line interface. Speaking of the CLI, Peter Kelly gives us the third installment of **Command Line Interface**. David Pardue follows up his article from the November issue on **LaTeX**, by providing a list of references to continue your learning of how to work with TeX. Meemaw walks us through using **Hugin** to stitch panoramic photos together. Peter Kelly also does a review of the **Samsung N510 netbook** in this month's **Gadgets & Gear** column. Patrick G. Horneker writes about how he has managed to merge his two favorite Linux distributions, with **PCLinuxOS & Slackware: The Odd Couple**. Ms\_meme graces us with another installment of **ms\_meme's nook** and **Forum Foibles**. We continue to explore the people **behind the scenes**, getting the chance to learn more about **Linuxera**.

I undertook a self-imposed, self-approved shopping trip to two of my favorite online retailers, to bring you the **Holiday Gifts & Stocking Stuffer Guide**, where I highlight 20 items that are sure to make any



PCLinuxOS user happier than a clam at high tide, without breaking the bank. Gary Ratliff, Sr. continues his alphabetical journey through computer languages, with **Computer Languages A to Z: Fortran**. AndrzejL leads us through the steps to install, and run, the Linux client for **Quake III Arena**, in **Game Zone**.

Andrew Strick reviews one of the newer additions to the PCLinuxOS repository, **Dropbox**. Mark Szorady gives us another installment of **Double Take**, along with his monthly **GIMP tip**.

As 2009 wanes, and gives way to 2010, there are lots of exciting changes in store for PCLinuxOS users. Texstar continues to develop and refine KDE 4.x, with KDE 4.3.3 being the latest offering. Work is also progressing on rebuilding the applications in the repository with the new tools in the toolchain, preparing for the 2010 release of PCLinuxOS. Keep your ears tuned and your eyes sharp in the

upcoming months, for announcements about the continued evolution of PCLinuxOS.

Finally, I'd like to take just a moment to wish everyone, everywhere, a very happy holiday season. Happy Holidays!

The  
**PCLinuxOS**  
Magazine

The PCLinuxOS name, logo and colors are the trademark of Texstar.

The NEW PCLinuxOS Magazine is a monthly online publication containing PCLinuxOS-related materials. It is published primarily for members of the PCLinuxOS community. The Magazine staff is comprised of volunteers from the PCLinuxOS community.

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

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# Panorama Construction with Hugin

by Meemaw

I love to take pictures! I'm not good enough to be a professional photographer, but I can usually hold the camera steady enough to get a decent picture. I was lucky enough to get to go to Hawaii a few years ago. That trip was wonderful! While we were in Honolulu, we visited the Pearl Harbor Memorial and the Punchbowl National Cemetery. Both are very good historical places to visit.

Have you ever looked at a shot and just known that you couldn't get it all in one picture? That's the situation I was in at the Punchbowl. I wanted to get a picture of the main monument, which has a huge flight of stairs, big marble monoliths on each side and a central structure with a statue at the top of the stairs.

When I got home I was looking for a way to put the two halves together. I tried to blend them in the Gimp, but the "seam" between the two pictures was painfully obvious. Then someone told me about Hugin. It's a panorama "stitcher"!!! However, reading some of the tutorials, it can do much more complicated construction.

You can read about it here; <http://hugin.sourceforge.net/> and look at some of the pictures. It is in our repository. Simply go to Synaptic and search for hugin, mark and install.

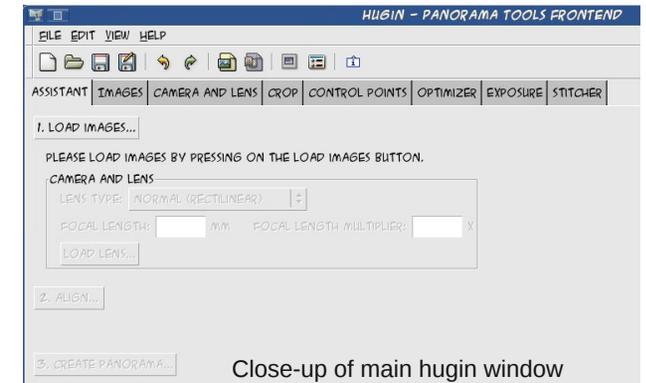
This article will be on the most basic project, stitching two photos together.

Open Hugin (it's most likely in Multimedia > Graphics) and you'll see the main window. Opening it for the first time is a little daunting because there are LOTS of settings and tabs. You have to have two pictures that "overlap" for the stitcher to work. The program looks for similarities in the two pictures and uses them to do its work. So, here are my two:



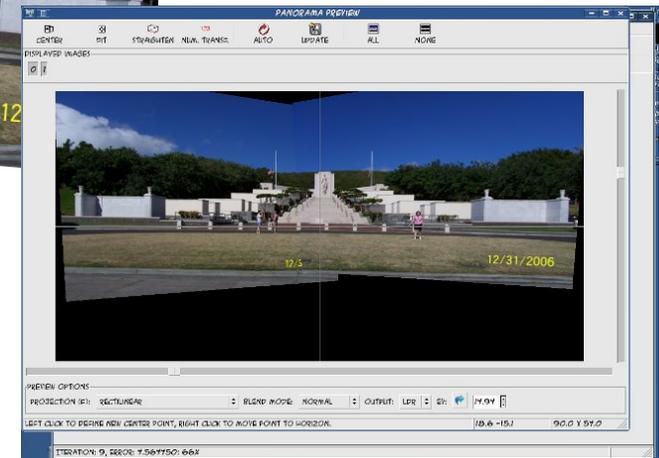
You notice that the central statue is in both pictures, so that's what the program will use. The first thing you see is a box saying "Load Images" - click on that and choose your two pictures.

After you load the images, you can click the button that says "Align" - you should get a separate window with all sorts of text flying by! Basically, it is looking at the two pictures and finding control points - features that are common to both pictures, which the



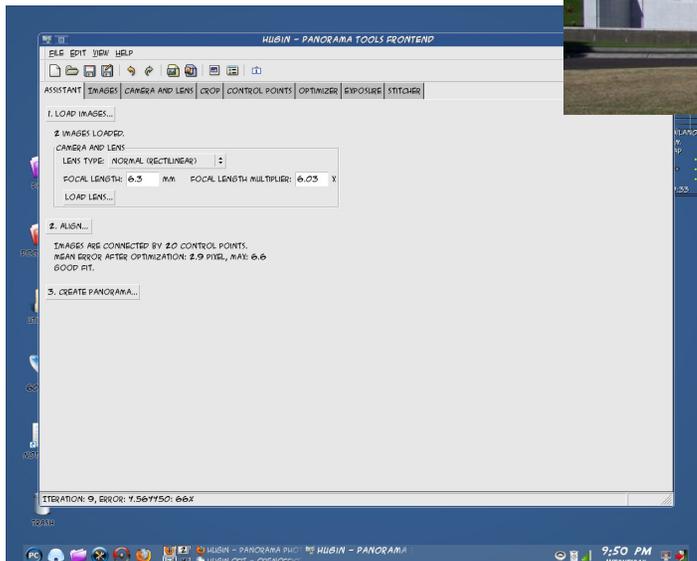
Close-up of main hugin window

program will use to line them up. When it is finished you should get a preview. If you don't, the third button from the right on the main window's toolbar is the preview button so you can click that as well. You'll get a separate window. Mine looked like this:



In the preview, the photos may look as if they have been turned and stretched. (Mine aren't straight across the bottom.) Hugin does that to line up the control points, but when it is finished your panorama should look correct. The lens type can be altered for different effects, but if you are just trying to combine two pictures, the "Normal Rectilinear" is the setting you want. It basically tries to combine the two pictures so any straight lines in them (like the steps and railings and so on) stay straight and aligned.

Notice in the screenshot below, all the buttons are visible, because I have already aligned the pictures and am ready to stitch.



size you want it to be. The first couple of times, however, it's probably a good idea to just click the Create button and let Hugin do it. You will be asked for the file name to use. The default file extension is .tiff but you can change that on the Stitcher tab if you wish. After saving, I took it into Gimp and cropped the dates and ragged edges out:

A list of online tutorials is here:

<http://hugin.sourceforge.net/tutorials/index.shtml>

The overview summarizes the process and actually gives you tips on how to choose your control points if you do them by hand. It also defines many of the terms in the program and explains a little about the different lens settings and info on the tabs.

Flickr has a gallery of photos created with Hugin:

<http://www.flickr.com/photos/tags/hugin/>

Some of them are very interesting! Enjoy!!!

**Managing My Data Center.**

Flexible  
Reliable  
Secure  
On-Demand  
Computing  
...delivered in a  
win/win relationship

**EN\*KI** The Computing Utility™ [www.enkiconsulting.net](http://www.enkiconsulting.net)

You can click on "Create Panorama" and it will be done for you. There is a Stitcher tab with many settings, from the picture type you wish to use, to the

**LinPC.US**

Hardware for your Linux PC.

# Behind the Scenes: An Interview with Linuxera

*In the continuing effort to learn more about those who help keep PCLinuxOS running, and who help make PCLinuxOS what it is, this month's Behind The Scenes article gives us an opportunity to learn more about Linuxera, one of the PCLinuxOS Forum administrators and one of the people working in the background to make sure that the PCLinuxOS servers are up and running as they are supposed to. -- Paul Arnote, PCLinuxOS Magazine Chief Editor.*

**Can you introduce yourself? (Forum name, real name, occupation, where you live, marital status, pets)**

I guess I could introduce myself, but then that would be kinda funny. Seriously, I'm linuxera or Cindy from what my birth certificate says. I work for the county Supervisor of Elections office in the IT department, mostly making sure our data base is accurate (isn't that what data entry is?). I live in sunny southern Florida, USA with my two dogs, cat, and a few parakeets. I'm too geeky to be married, so count that out. LOL.

**How and when did you get started with computers?**

I was in the Air Force the first time I got involved with computers. I was working in logistics management and was responsible for maintaining an equipment and personnel data base for everything and everyone on base that went marching off in times of war. That was back in the 'Computer takes up a whole room and then some days'. All the data was entered by using keypunch cards. Then we started using desktops. They plopped a Zenith 100 on my desk and said, "Here, figure this out!". It came with disks for CPM-85



and DOS, take your pick. Eventually we moved forward from the keypunch cards, to floppy disks, and onward to live contact with the Sperry mainframe, and from there it was just a matter of system upgrades and more speed. When I left the military we were working on blazingly fast Z-385 systems.. zoommmmm!!

**When did you get interested in Linux and why?**

I had kept up my interest in computers and computing by having one or two computers at home, but I wasn't into hacking or writing programs. I was still on Windows XP when I finally got tired of lagging desktops and running programs. My dad had been harping at me for years to try Red Hat, or even Mandrake Linux but I hadn't truly gotten the concept of Linux. Finally I started doing a search for Linux and wound up at Distrowatch. I started downloading and burning different distros based on name, or popularity, skipping over PCLOS for a few months. I finally thought I would give PCLOS a shot and I was just totally amazed. I was running Big Daddy at the time as the full blown 2007 wasn't out yet, but I was truly impressed at not only the usability but ease of use. I called my dad, and got him to try it too. He's still using PCLOS as well as another one of his friends.

**What Linux distro did you start with?**

Zenwalk and Dream Linux, then Ubuntu.. Of course Knoppix got in there as well as Puppy for a time. I even tried Suse and Mandy, Siddux, Mint, and Mepis. :-)

### When did you join PCLinuxOS?

I found the PCLinuxOS camp just before 2007 was released.

### What led you to PCLinuxOS?

Like I mentioned above, I was trying out different 'distros' to see how they stacked up. When I got to PCLinuxOS I stopped.

### How many hours a week do you estimate that you spend working as a PCLinuxOS administrator?

Hooooooooooooeeey, that's hard to answer. There's so many different tasks I'm involved with. but at the moment between 10 -15. I'm trying to stay out of people's hair and just maintain servers, websites, forward donations to Texstar, and answer emails, pms, and an occasional post.

### What one thing is the most challenging thing you have to deal with as an administrator?

People. It's always a challenge for me. I hope to keep the public areas as welcoming as possible. Sometimes it's not very easy. You can go for weeks with everyone being pleasant as punch on the forums, then along comes a full moon and stuff starts happening. I have to keep in mind that everyone has an opinion, and wants to be heard, but when it makes it uncomfortable for our other members I have to take some kind of action. I see our forums as a home. I'd like everyone of every age to feel comfortable there. If someone came to

my home, and started trouble and made my other visitors uncomfortable I wouldn't hesitate to either ask him/her to leave or show him the door personally. As a forum administrator we have basically the same job. Just because one person is used to dishing out or receiving abusive or 'less than desirable' language, doesn't mean we all are, so keeping the majority in mind helps on those occasions.

### What is the most rewarding thing about being a PCLinuxOS Forum administrator?

The most rewarding is watching forum members helping each other out. I've also had the privilege to see some of our community members rise to the occasion and shine. Pinoc, Maik3531, Neal, and many others have really kicked in and helped out as well as adding new functionality to the distro. All of this transpired through the forums, once the right boards were put in place. In spite of everything that has happened over the last 4-5 months, I see PCLinuxOS stronger than before because of community involvement made possible via the forums.

### What one song best describes your style in the forum?

Ha ha ha, I haven't a clue.. LOL What kind of a question is this really? Ha ha ha.

### What one song best describes your personality?

That I can't say either. There are so many songs I've loved over the years but one comes to mind, "Aranjuez", sung by Paloma San Basilio with Paco de Lucia on the guitar. Most beautiful song I've ever heard. Guess I would just love to return to Spain one day.

### In the animal kingdom, which animal best represents you?

I'm closest to a horse, but I definitely won't say why. Maybe I'll put a video up on my site for people to take a look at and maybe they will understand. Maybe.

### What parting advice or words of wisdom would you like to leave the PCLinuxOS magazine readers?

My parting advice or words of wisdom would be this. Keep bringing PCLinuxOS forward. Keep it up to date, yet stable. That's what caused you to fall in love with it to begin with so why change it. If we start changing it, it won't be PCLinuxOS any more, it'll be some other distro. ;-)



# Game Zone: Quake 3 Arena

by AndrzejL

Today in Games Zone, I will show you how to install and run Quake III Arena Linux client.

What is it? You really don't know? Google is Your friend then.

First, we need a Quake III Arena CD with the original (Windows version) of the game. Why would we need that if we are going to use Linux Client? Quite right. We need two things from it: the maps and your original CD-key. So start digging, find it, and have it at the ready.

Next thing we need is the Linux Quake III Arena client. Get your free copy here:

<http://2.download.softwarepatch.pl/1619edb0dcb493dd5337b94a1f79c3f6/linuxq3apoint-1.32b-3.x86.run.bz2>.

If you use Firefox, like I did, it will be downloaded to the desktop, or to your specified download directory, if you specified a different directory as your default directory in which to store your downloaded files. If not, then just move the file to your desktop anyways, after the download has been finished.



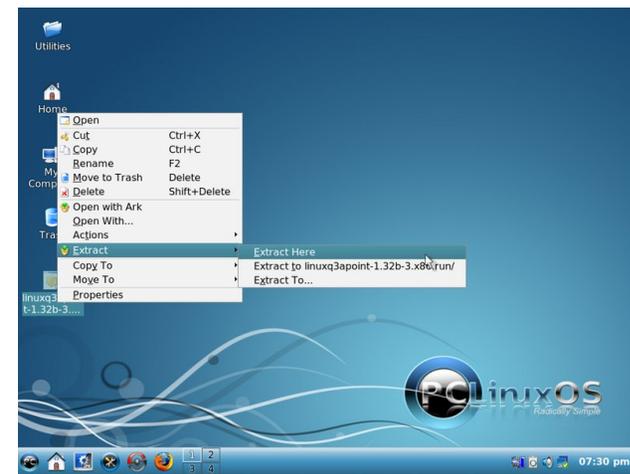
Its a relatively small file (only about 30 MB), compared to the CD. It contains the basic files needed to install the game. That's why we need the original CD. We are going to install the Linux version of the game, but we are going to copy maps, mods etc from the CD.

Why not install the original CD in wine, you may ask? Trust me I have tried that; it's not a great idea.

Another thing we are going to need is an installed version of PCLinuxOS. I will use fresh copy of PCLinuxOS 2009.2. I installed it, set up my Internet connection, applied the updates, and configured the graphical server. Nothing more was done.

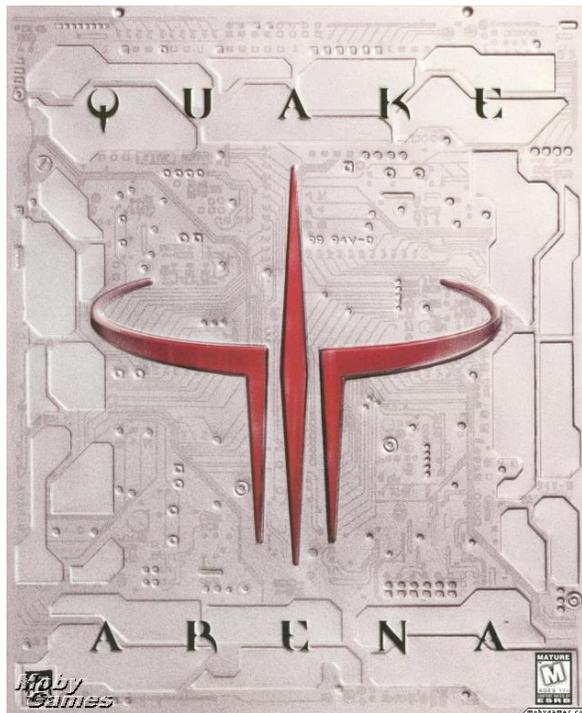
So, the file is now downloaded and waiting on your desktop. Good!

Right click on the downloaded file, and from the menu, select EXTRACT > EXTRACT HERE.

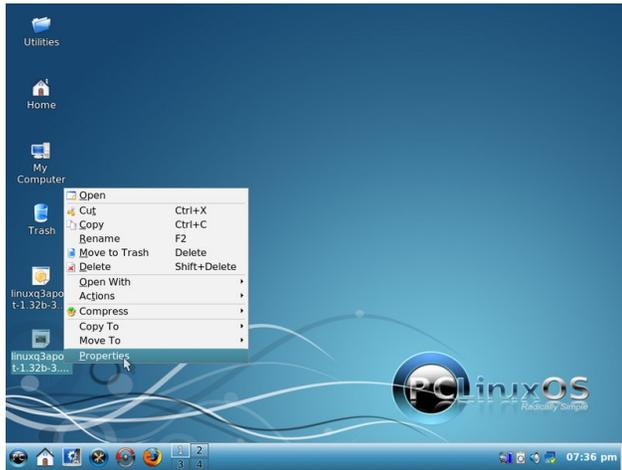


A new window will come up. The extracting process has now started.

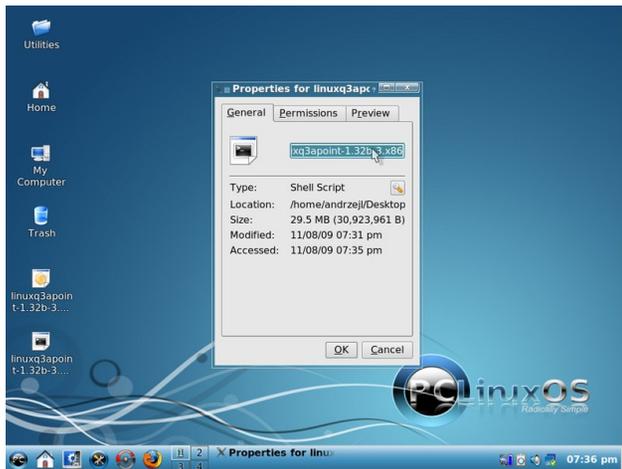
The extracting process has finished. Look at your desktop. You have two files now.



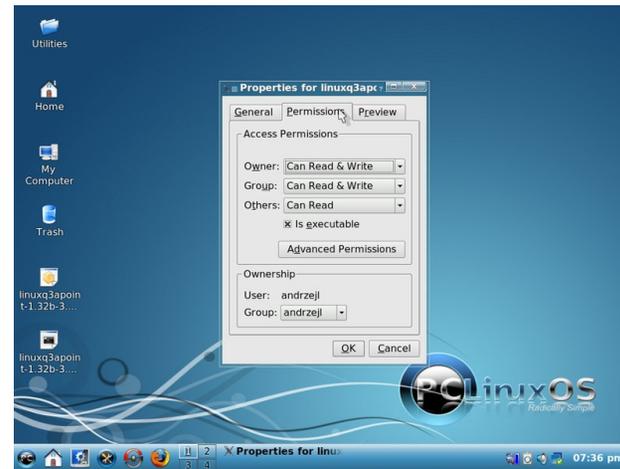
Right click on the new file, and pick PROPERTIES from the menu.



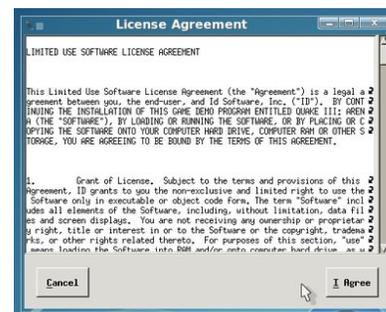
A new window with the properties of the file will come up.



Click on the PERMISSIONS tab. Then tick the box next to the IS EXECUTABLE selection, and click OK.



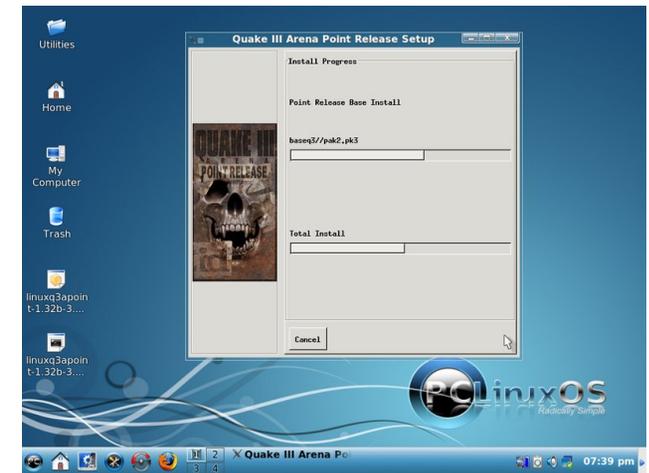
Right click the file again, and select ACTIONS > RUN AS ROOT from the popup context menu. When asked, type in root's password and click OK.



Another License Agreement will pop up. Read the license, and if you are OK with the terms and conditions, click I AGREE to proceed.

The license agreement covers the installer window. Once you have agreed to the terms and conditions, you can begin the installation process. Click on the BEGIN INSTALL button.

Installation in progress. Please wait patiently.

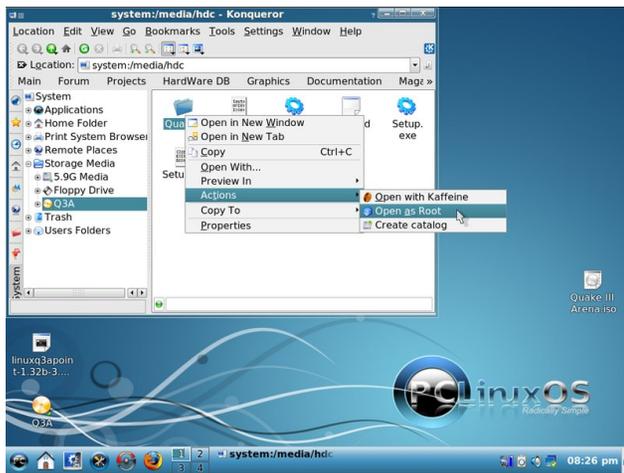


After the installation has finished, click START to proceed.

Now that the installation has finished, insert the original game CD to the CD-ROM. Once you have done that, a window will pop up asking to choose an action. Choose to OPEN IN NEW WINDOW and click OK.



Konqueror will open. Its address bar will show an entry similar to `system:/media/hdc`. You can now see the contents of the Quake III Arena CD. Right click on ANY folder in there and choose **ACTIONS > OPEN AS ROOT**. Please don't start the topic on the forum complaining that your game CD does not contain folder called ANY.

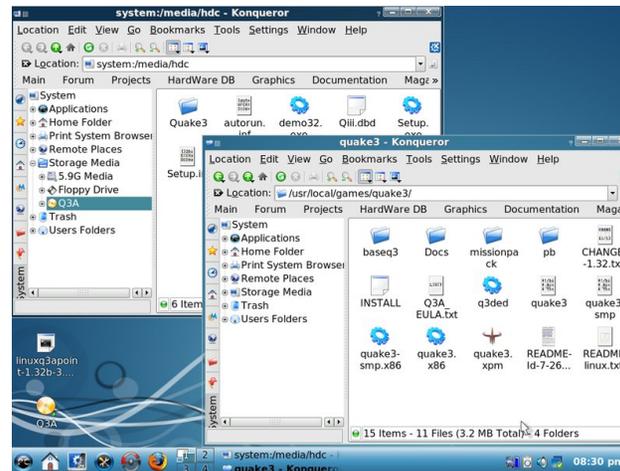


Type in the root password when asked for it, and click OK.

A second window will come up, probably showing an error. Don't panic. Nothing is wrong.

In the new Konqueror window address bar, type in `/usr/local/games/quake3/`, and press ENTER on your keyboard.

Now, in the lower window, you can see the game that you have just installed. In the window above it, you can see contents of the CD.

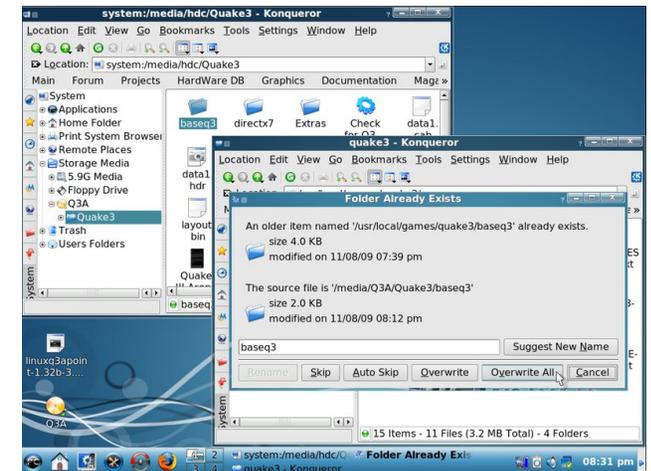


In the CD window, find the folder called **QUAKE3**. Click on it. Now You're inside that folder. Locate the folder named **BASEQ3**. Right click on it. Pick **COPY** from the menu.

Now, go to the lower window with the `/usr/local/games/quake3/` in the address bar. Right click inside that window in any blank space, and from the menu choose **PASTE URL**.

A new window will pop up to tell you that a folder called **BASEQ3** already exists. It will ask you to choose an action. Click **OVERWRITE ALL**.

Over 480 MB of maps, mods and config files is now being copied to the game folder. Please wait patiently.



Copying is now finished. We don't need the CD any more. Please take it out of the CD-ROM, and close the top window. Now, right click in the window that we have left open. From the menu, choose to **CREATE NEW > TEXT FILE**.

Type in the name of the file `Q3A.sh` and click OK.

Find the newly created `Q3A.sh` file and double click on it. Kwrite – text editor will open. Please type in those 3 lines:

```
ardsd -a alsa
```

```
cd /usr/local/games/quake3/
```

```
ardsdsp -m /usr/local/games/quake3/quake3-smp.x86
```

Leave one line blank at the end of the file and close the Kwrite window. Save the file when asked.

Right click on the newly created Q3A.sh file and choose PROPERTIES from the menu.

When new window will come up, click on the PERMISSIONS tab. Tick the box next to IS EXECUTABLE. Click OK.

Now go to KMENU > SYSTEM > TERMINALS > TERMINAL PROGRAM SUPER USER MODE.

Type in root's password when asked and click OK.

Type in

```
In -s /usr/local/games/quake3/Q3A.sh /bin/Q3A
```

and press ENTER on your keyboard. Close the terminal.

Right click on any blank space on the desktop. Choose to CREATE NEW > LINK TO APPLICATION.

Type in Quake 3 Arena in the name box. Click on the blue gear icon.

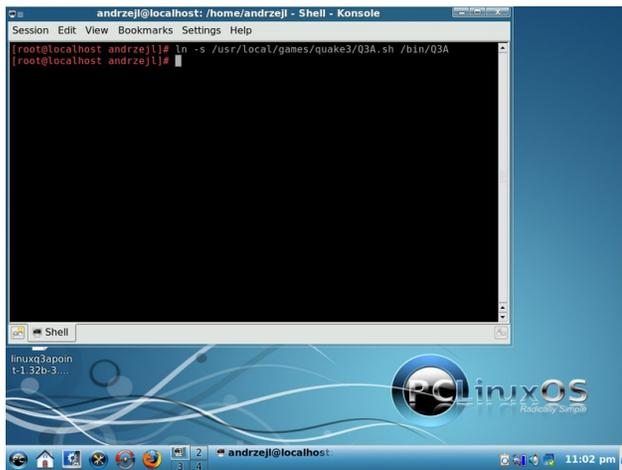
Pick any icon you like.

Notice that the blue gear icon has changed to the icon that you chose.

Click on the APPLICATION tab, and in the COMMAND line type in Q3A. Click OK to close this window.

Notice that Quake 3 Arena icon is now present on your desktop. You can move it around by left clicking and dragging it. You can delete the two files that we were using before from the desktop, too. Right click on them and pick DELETE from the menu.

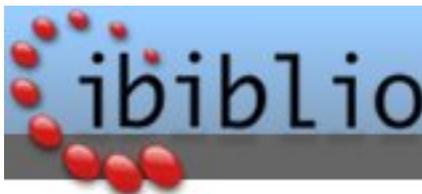
Now that the game is installed, and the desktop is cleared, we can enjoy our game. Click on its new desktop icon. It should start soon. When it starts, you will be asked to type in your CD-KEY. Make sure you have it ready. After that... Enjoy the game!



If the game won't start (which is very unlikely), open a terminal window. type in Q3A, and press Enter. Look for error messages. Search either Google or the PCLinuxOS Forum for solutions to the error messages. Apply common sense. I believe following this article is safe, as I have used this method many times before without any problems. However, you're following this article at your own risk.

Maybe I will meet You on one of the servers one day.

AndrzejL

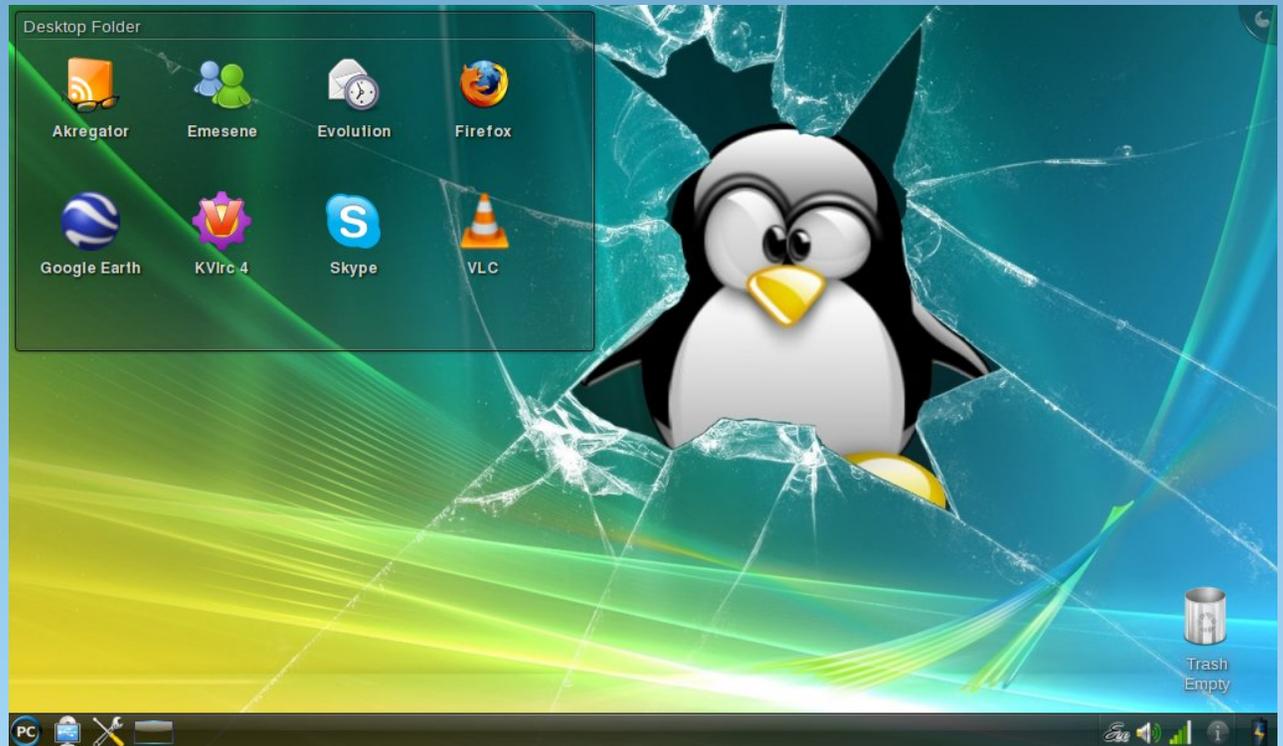


### PCLinuxOS Enlightenment e17 ISO



Coming soon!

# Screenshot Showcase



Posted by Coffeetime, November 3, 2009, running KDE4 on an eeePC.

# Texstar Baby



Texstar Baby just slip an OS under the tree for me  
Been an awful good girl Texstar Baby so hurry to my desktop tonight  
Texstar Baby a twenty-one inch screen I want too so blue  
I'll wait up for you dear Texstar Baby so hurry to my desktop tonight



Think of all the fun I've missed using that Windows well I really got dissed  
Next year I could be so good if PCLOS is on my list

Texstar Baby don't want a lot but then I just thought  
I've been an angel all year Texstar Baby so hurry to my desktop tonight  
Texstar Baby one little thing I really do need the deed  
To all the PCLOS proceeds so hurry to my desktop tonight



Come and trim my user bar with something special well I like the bizarre  
Next year I'm gonna trade in my uke for a virtual guitar



Texstar baby forgot to mention one little thing please bring  
All your little geeks to help me sing so hurry to my desktop tonight  
Hurry to my desktop tonight

# 2009 Holiday Gift & Stocking Stuffer Guide

by Paul Arnote (parnote)

Ah! December arrives. And along with it, city stoplights flash red and green, as if to announce the arrival of the holiday shopping season. Shoppers scurry from store to store, shop to shop, trying to find that perfect gift. This month, Gadgets & Gear goes shopping for you (in a way), and offers up some holiday gift ideas and stocking stuffer suggestions that are sure to excite and entice any PCLinuxOS user. I went to two of my favorite online retailers – Newegg and Amazon – to find items that should be of interest to many users.

## From Newegg.com

[Foxconn R20-S4 Intel 945GC 1 x 240Pin Intel GMA 950 Barebone - Retail](#)



Have you ever wanted a second workstation on your home network, but didn't want to lay out a large bundle of cash. The Foxconn R20-S4 barebones system may just help you fill out your wish list, while not breaking the bank. Priced at less than \$120 (U.S.), the Foxconn R20-S4 doesn't skimp on features. It sports a dual core Atom 330 processor that runs at 1.6 GHz (FSB 533 MHz, HyperThreaded, 1 MB Level 2 Cache). Video is supported by on-board Intel video, using the Intel 945GC chipset. Six channel sound is handled by the Realtek ALC662 on-board audio. Only one memory slot is available, but up to 2 GB of DDR2-533 memory is supported. There is one PCI expansion slot available. The storage chores are handled by two SATA 3.0 Gb/s serial ATA connections, and there is plenty of room inside the case for a 3.5" SATA hard drive and a 5 1/4" SATA DVD burner. There are two USB 2.0 connections, along with two audio jacks, on the front of the case. On the back of the case, are PS2 mouse and keyboard ports (nice, since you aren't forced to use your available USB ports to run your keyboard and mouse), four more USB 2.0 connections, a VGA port, three audio jacks, an RJ45 ethernet port, and the power cord receptacle. The power supply is a modest 150 W model, but then this should be sufficient to handle your needs, especially given that the Atom processors are known to have very modest power consumption.

Couple this purchase up with a hard drive (80 GB: \$35, 160 GB: \$40), a [DVD+/-RW](#) (\$30), and 2 GB [DDR2 533 memory](#) (\$50), and you have yourself a brand new computer for under \$250. (Notice that I'm not adding in here a mouse, keyboard, or monitor, since many computer users have access to "spares"

just laying around, or know where to find them inexpensively).

[LITE-ON Black 24X DVD+R 8X DVD+RW 8X DVD+R DL 22X DVD-R 6X DVD-RW SATA CD/DVD Burner - Bulk - OEM](#)



It seems to be a fact of life in the computer world – DVD burners die over time. So if your PCLinuxOS user is in need of a new DVD burner, you'll be hard pressed to find a better deal. At 24X write speed, this drive can burn a 4.7 GB DVD+R in only 5 1/2 minutes. It also supports burning of DVD+RW, DVD-R, DVD+RW, and DVD+R DL discs. While this particular drive has a SATA interface, there is a similar model with a PATA interface that also supports DVD-RAM, and has LightScribe capabilities. Both drives sell for less than \$30 (U.S.).

[GEAR HEAD 8X DVD+R 8X DVD+RW 6X DVD+R DL 8X DVD-R 6X DVD-RW 5X DVD-RAM 8X DVD-ROM 24X CD-R 24X CD-RW 24X CD-ROM 2MB Cache USB 2.0 Black Slim External DVD Burner Model 8XDVDEXTLS - Retail](#)

Maybe your PCLinuxOS user has no more expansion bays into which to place an internal DVD



burner. Or, maybe your PCLinuxOS user is a "road warrior," and has a new netbook, without an optical drive. This affordable slim line DVD burner might just be the answer. It requires the use of two USB 2.0 ports to connect (one for data transfer, the other to help provide power to the drive). Small and lightweight, it is easy to carry in a small laptop bag to allow easy connection while on the go. This drive, with its 8X write speeds, sells for \$48 (U.S.).

**Kingston 4GB Micro SDHC Flash Card with microSD/SDHC USB Reader Model MRG2+SDC4/4GB - Retail**



If you are anything like me, you can never have too much flash memory. This item is just plain cool. It is a 4 GB microSD SDHC card, that comes with it's own minuscule USB card reader! The microSD card fits into the card reader, which can then be plugged into any open USB port. You can use it merely as a USB flash stick. But another excellent use for this item is to help move music, video, and picture files off of and onto your cell phone. Since many cell phones on the market accept the microSD cards as memory expansion cards, all you need to do is to copy the picture, music, and video files from their storage on your computer to this card, and then insert the card into your cell phone's microSD card slot. How many times have you taken pictures with your cell phone's built-in camera, but have had difficulty getting those photos onto your computer? This item can make your life a whole lot easier when trying to tackle that task. Copy the photos to the card in the phone, take the card out, place it in the card reader, and insert it into one of your computer's USB ports. And, at under \$12 (U.S.), this item makes a perfect stocking stuffer.

**Kingston DataTraveler Mini 10 4GB USB 2.0 Flash Drive (Red) - Retail**



Sometimes, all you need is a simple USB flash drive. Perfect for making a Live USB, or just for general portable data storage, this item is perfect for all your needs. And, with an affordable price for around \$12 (U.S.), it will make a perfect stocking stuffer for any PCLinuxOS user.

**SYBA CL-USB-FRAG USB Fragrance Oil Burner for Aroma Therapy - Retail**



Ah! The sweet smell of success! Ok, maybe not, but then why not have some pleasant smell around while you are working, success or not. Powered by an open USB port, this device heats up a small portion of fragrance oil or potpourri candle wax to emit the pleasant fragrance of your choice. This stocking stuffer is a very affordable \$7 (U.S.).



**SYBA CL-ACC20018 USB Massage - Retail**



Does this thing serve any purpose? Heck no! It's just cool. Powered only by an open USB port on your computer, you can watch a plasma light show right on your desktop. Touch the sphere, and the electricity is drawn to your touch on the globe. This bit of computing distraction can sit on your desktop for a mere \$20 (U.S.).

**Rosewill RX355-U 3.5" USB 2.0 External Enclosure - Retail**



Imagine all the pent up stress after a hard day of packaging. Oh, how you could use a massage. This item is ergonomically designed to massage your neck, shoulders, and wrists, courtesy of an open USB port on your computer. Who needs a masseuse? You can have your massage, whenever you want it, for \$11 (U.S.).

**Newo corporation 087 Dream Cheeky USB Plasma Ball - Retail**



Do you have an older 3.5" IDE hard drive lying around and not in service? This hard drive enclosure will allow you to put that older hard drive to use as an external USB hard drive. The case is built of heat-dissipating aluminum, and sports a removable cooling fan. A blue LED indicates that power is on, and it changes to green to indicate that the drive is being accessed. It comes with its own power supply, and the cables necessary to connect it to an open USB port on your computer. Additionally, the drive enclosure comes with a stand that allows operation in either a vertical or horizontal orientation. \$20 (U.S.).

**EAGLE EB-240-00065 2.5" USB2.0 to IDE mesh External Enclosure - Retail**



Similar to the previous item, this item allows you to place an older 2.5" IDE hard drive to use as an external USB hard drive. Assembly is easy and quick, and the mesh of the case allows for excellent heat dissipation. Small enough to fit into a shirt pocket, this item comes with USB cables and a leatherette carrying case. \$10 (U.S.).

**HP LaserJet P1006 Personal Monochrome Laser Printer - Retail**



If you are anything like me, most of the printing you do is plain text. And for this chore, a personal laser printer excels – without the pitfalls of an inkjet printer. The expense of ink cartridges just doesn't make sense in today's economy. Because of the expense, I won't even print out photos from my digital camera, opting instead to go to the neighborhood drug store to get actual photographic prints at a price far less than it costs me to print them out at home. I tired of purchasing two ink cartridges for \$70 (one black cartridge for \$30, and one color cartridge for \$40), just to print out two or three photos. (I wouldn't have a need to print out additional photos for two to four months, and by then, the ink cartridges would be all dried up.) There is no such problem with a personal laser printer, since toner doesn't dry up. Instead, it's always ready to print.

This USB connected printer prints out 17 pages per minute at a 600x600 dpi (dots per inch) resolution. It is fully supported by CUPS and hplip in PCLinuxOS, so setup is very easy. And, priced at only \$100, it's a very affordable printing solution. The printer comes with a 1/2 full "introductory" toner cartridge, which is good for printing 700 sheets. A full toner cartridge will print 1500 sheets before needing to be replaced.

### TRENDnet TE100-P1U Mini Print Server



Connected to your USB printer, and then connected to your home router via an RJ45 Ethernet cable, this mini print server makes your USB printer available to all the computers on your network. Sure, you can also do this via CUPS on a computer that's left running, but therein lies the problem: the computer to which the printer is attached must always be left on and running. This device allows your printer to be available to all the computers on your home network, without having to be connected to a computer that's always on. Using this mini print server allows your printer to be assigned an IP address on the network. You then send your print jobs to that specific IP address to be printed out. It's available for under \$40 (U.S.).

### BELKIN BP112230-08 8 ft. 12 Outlets 4320 Joules Pivot-Plug Surge Protector - Retail



Now who couldn't use some surge protection for their computers and electronics? The problem with most surge protectors is encountered when you attempt to plug in multiple "brick" type adapters.

Then, the width of those brick adapters takes up two of the available plugs on the surge protector. The 12 Outlet Belkin Pivot-Plug Surge Protector allows the outside eight plugs to swivel, so that brick-type adapters don't take up more than their fair share of the space or available outlets. Rated for 4,320 Joules, with an AC clamping voltage of 330 Volts, this surge protector also protects coaxial cable connections, as well as RJ11 telephone jacks (one input, two output). All of this for \$35 (U.S.), which is a mere pittance compared to the cost of the equipment you plug into it.

### Pixxo MA-W2G5 Black 1 x Wheel 2.4GHz Wireless Optical Mouse - Retail



Cut the cord and go wireless! With your mouse, that is. Being an optical mouse, it has no moving parts (no ball) to collect dirt to track its movements. It also sports a scroll wheel, which also has a "tilt" function, allowing for horizontal scrolling. It also has high resolution sensitivity, with a 1600 dpi resolution.

Ergonomically designed, it also has an automatic "sleep" function, to help preserve battery life. When the battery gets low, an LED blinks to warn you and so that you can replace it before the batteries (two AAA) completely discharge. The mouse is able to be used up to 8 Meters (or just a little over 25 feet) away from the computer where the transceiver is plugged into the computer. And, it's very affordable, selling for just under \$15 (U.S.).

**From Amazon.com**

**Coby MP305-4G MP3 Player with 4 GB Flash Memory FM Radio, USB Drive and LCD - Black**



This MP3 player is small, lightweight, and easy to slip in your pocket as you head out the door. With its 4 GB memory capacity, you can store and listen to up to 1,000 songs (average 4 minute length, recorded at 128 Kbps, 44,100 Hz). Simply plug this MP3 player into an open USB port on your

computer, and drag-n-drop files onto the device. PCLinuxOS sees it simply as a USB flash drive, allowing you to copy files over in Konqueror or Dolphin. The player runs off of one AAA battery, with a battery life of over 8 hours (you can substantially cut your battery costs by opting for rechargeable batteries). Additionally, you can listen to your favorite FM radio stations. And there's one more added benefit: besides music files, you can also store/carry other files (resume, spreadsheets, presentations, etc.). All of this is available for under \$25 (U.S.).

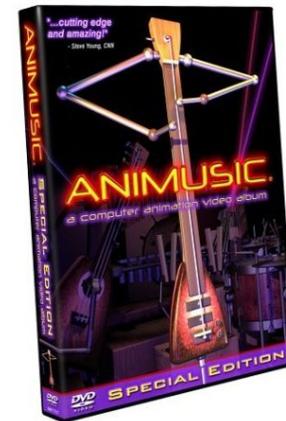
**SanDisk Sansa Fuze 4 GB Video MP3 Player (Black)**



If you are wanting a little more substantial media player, one that plays video, one that plays not only MP3, but also OGG and FLAC files, and one that has an expandable memory via microSD SDHC

cards, then the Sansa Fuze is for you. It's built in rechargeable battery goes for 24 hours before needing a recharge. Additionally, it's available in 4 additional colors (besides black): blue, red, silver, and pink. Currently selling for just under \$50 (U.S.).

**Animusic - A Computer Animation Video Album (Special Edition)**



You will literally be mesmerized by the elaborate ingenuity of Animusic, and the way that music is produced – so much so, that you will not be able to look away from the 75 minute DVD. Animusic is the brainchild of Wayne Lytle, a progressive-rock keyboardist and a 1988 graduate of Cornell University's Program of Computer Graphics. Perhaps one of the most popular tracks is "Pipe Dream," where thousands of animated balls, popping out of an intricate system of pipes and barrels, bounce onto string instruments, drums,

xylophones, cowbells, pipe bells, and more, to make the unforgettable music and visuals that go along with it. The 75 minute video will finish long before you are ready for it to end, leaving you wanting to watch more. Available for a very entertaining \$20 (U.S.). A combo-pack of Animusic Volumes 1 & 2 is also available for \$36 (U.S.).

### Nikon Coolpix L20 10MP Digital Camera with 3.6 Optical Zoom and 3 inch LCD (Deep Red)



If you are looking for a bargain on a full-featured digital camera, look no further than the Nikon Coolpix L20 10 MP Digital Camera. And don't let the "point-n-shoot" appearance of the camera sell its full feature set short. This camera is packed with features, enabling virtually anyone to shoot very high quality pictures, right out of the box. And, with its 10 MP resolution, 16x20 prints are easy to make. The camera has a 3.6X optical zoom. Nikon is world-famous for the unique, high quality glass they use in

their cameras and lenses, so you can be assured of getting a camera that produces very high quality images. The L20 uses standard SD/SDHC memory cards, which are widely available, as well as being powered by two AA batteries (again, using rechargeable LiON batteries will give you longer use per set, and help cut your battery costs). You can have this camera under your Christmas tree for just under \$100 (U.S.).

### Western Digital, WD TV Mini Media Player



The Western Digital TV Mini will take your collection of multimedia (stored on a USB drive) and play them on your television. It's perfect if you have a large collection of media stored on a USB hard drive. Just insert the USB hard drive into the USB port on the TV Mini, and play it back, either through the component video cables or the composite video cables attached to your television. When using the component video cables, the TV Mini will up-sample your videos to 1080p, for increased clarity. The TV

Mini supports the following media formats for playback:

Video - AVI (Xvid, MPEG1/2/4), MPG/MPEG, VOB, MP4/MOV (MPEG4), RM or RMVB 8/9/10  
 Photo - JPEG, GIF, TIFF, BMP, PNG  
 Audio - MP3, WAV/PCM/LPCM, WMA, AAC, FLAC, MKA, OGG, APE  
 Subtitle - SRT, SSA, SUB, SMI

The TV Mini supports USB hard drives formatted with FAT32, NTFS, or HFS (non-journaled). The item can be yours for \$70 (U.S.).

### Targus PAUK10U Ultra Mini USB Keypad

One thing that many notebook and netbook users miss is a numeric keypad. Except, they don't have to miss it any longer. The Targus Ultra Mini USB Keypad gives notebook and netbook users the numeric keypad, connected by way of an open USB port. And, the Targus Ultra Mini USB Keypad provides two additional USB 1.1 ports along the top side for use with additional peripherals. Approximately \$15 (U.S.).



There you have it – 20 gift ideas for that special PCLinuxOS user on your shopping list, and none of which will break the bank. Happy Holidays!

# Double Take & Mark's Quick GIMP Tip

Double Take

by Mark Szorady



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Find at least seven differences between cartoons.

Answers on Page 26

## Mark's Quick Gimp Tip

The Gimp is a terrific graphics editing program! Once you use it, you'll find how powerful it really is. And you Microsoft followers will ask yourselves why you ever paid \$100.00 (or more) for the graphics program you have on your current Windows system when The Gimp is free for download!

Gimp is packed with lots of neat and helpful features. The one I use quite a bit is the "Document History Dialog." The Document History Dialog takes the "Open Recent" menu selection one step further. The DHD lists dozens of images that were opened or edited in the past.

Because I use Gimp to assist me in creating all my cartoon features, with Document History, I'm able to go back a week or two and open up a comic strip or panel I previously worked on.

To get to the Document History Dialog, simply go to: File > Open Recent > Document History. Or open it in the right side tab dialog of Gimp. In the tab dialog (Layers, Channels, Navigation, etc.), just select to open a new tab and choose "Document History." Once you have it there, you can then adjust the size of thumbnails, and the layout (list or grid). Experiment! The tab dialog can be customized in countless ways!



-Mark Szorady is a nationally syndicated cartoonist. His work is distributed by [georgetoon.com](http://georgetoon.com). Email Mark at [georgetoon@gmail.com](mailto:georgetoon@gmail.com).

# Tux Teddy (a.k.a. The 12 Days Of (Linux) Christmas)



On the 1st day of Christmas my true love gave to me  
A Tux Teddy under my tree

On the second day of Christmas my true love gave to me  
Two terminals  
And a Tux Teddy under my tree

On the third day of Christmas my true love gave to me  
Three ways to mount two terminals  
And a Tux Teddy under my tree

On the fourth day of Christmas my true love gave to me  
Four commands three ways to mount two terminals  
And a Tux Teddy under my tree

On the fifth day of Christmas my true love gave to me  
Five live CDs  
Four commands three ways to mount two terminals  
And a Tux Teddy under my tree

On the sixth day of Christmas my true love gave to me  
Six grubs a grubbing five live CDs  
Four commands three ways to mount two terminals  
And a Tux Teddy under my tree

On the seventh day of Christmas my true love gave to me  
Seven disks a spinning six grubs a grubbing five live CDs  
Four commands three ways to mount two terminals  
And a Tux Teddy under my tree



# Tux Teddy (a.k.a. The 12 Days Of (Linux) Christmas)



On the eighth day of Christmas my true love gave to me  
Eight kernels crashing seven disks a spinning six grubs a grubbing  
Five live CDs four commands three ways to mount two terminals  
And a Tux Teddy under my tree

On the ninth day of Christmas my true love gave to me  
Nine bins a bashing eight kernels crashing seven disks a spinning  
Six grubs a grubbing five live CDs four commands  
Three ways to mount two terminals  
And a Tux Teddy under my tree

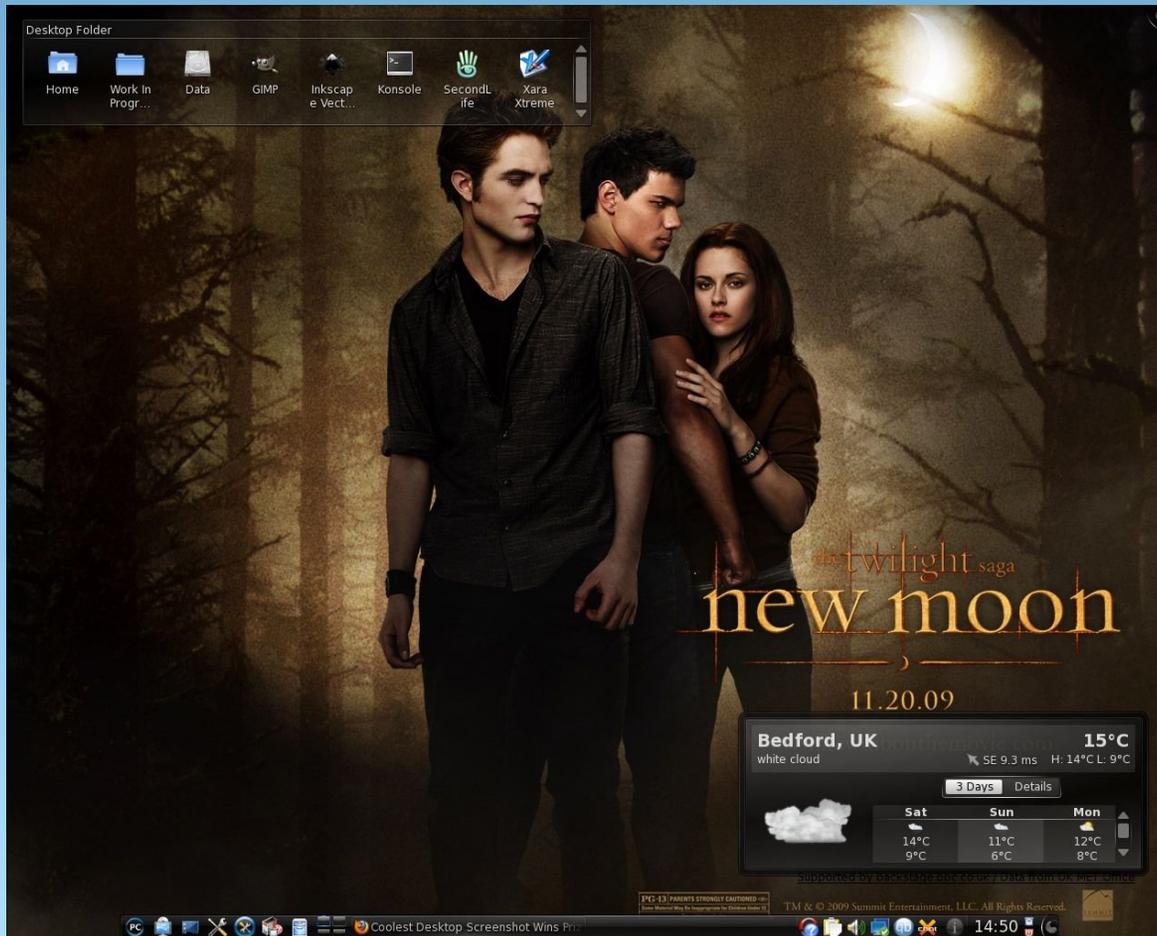
On the tenth day of Christmas my true love gave to me  
Ten boots a scootin' nine bins a bashing eight kernels crashing  
Seven disks a spinning six grubs a grubbing five Live CDs  
Four commands three ways to mount two terminals  
And a Tux Teddy under my tree

On the eleventh day of Christmas my true love gave to me  
Eleven roots a rootin' ten boots a scootin' nine bins a bashing  
Eight kernels crashing seven disks a spinning six grubs a grubbing  
Five live CDs four commands three ways to mount two terminals  
And a Tux Teddy under my tree

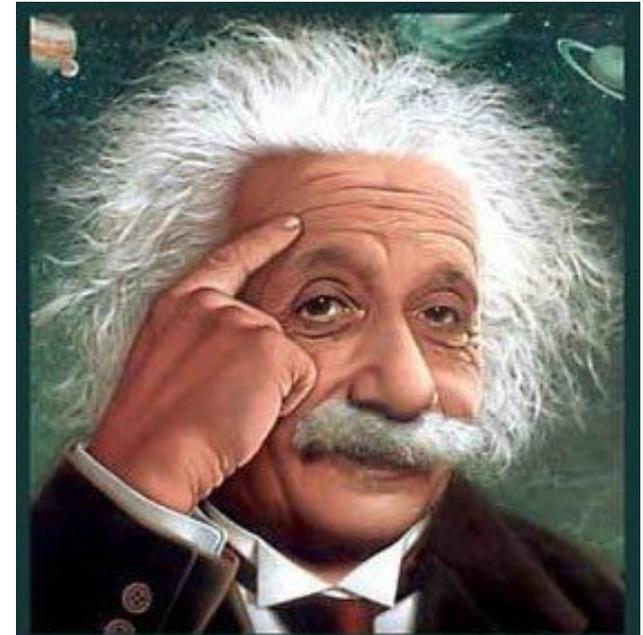
On the twelfth day of Christmas my true love gave to me  
Twelve gimpers gimping eleven roots a rootin' ten boots a scootin'  
Nine bins a bashing eight kernels crashing seven disks a spinning  
Six grubs a grubbing five live CDs  
Four commands three ways to mount two terminals  
And a Tux Teddy under my tree



# Screenshot Showcase



Uploaded by Sproggy, November 21, 2009, running KDE4.



It's easier than  $e=mc^2$   
It's elemental  
It's light years ahead  
It's a wise choice  
It's Radically Simple  
It's ...



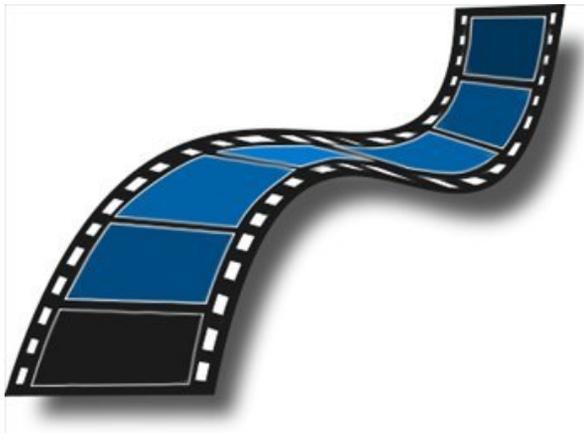
# Multimedia Mean Machine: ffmpeg

by Paul Arnote (parnote)

Last month, we took a look at the power of the mencoder command line utility, and how it can help you when working with multimedia files. There is another tool in your multimedia arsenal, called ffmpeg. Ffmpeg is similar to mencoder, but many find its command line much easier to master.

Ffmpeg documentation is fragmented, at best. There is the main documentation, which can be found at <http://www.ffmpeg.org/ffmpeg-doc.html>. Although the main documentation contains some examples of how to use ffmpeg, finding other examples can lead you in multiple directions during a typical internet search. And the examples given in the main documentation really don't do much to reveal the full power of ffmpeg.

The current version of ffmpeg, and the version in the PCLinuxOS repository, is 0.5. Do use some caution when looking for ffmpeg examples. The ffmpeg developers have been known to change some of the



command line parameters, so items that worked just fine with older versions of ffmpeg, may not work now. The current version was released in March, 2009. So try to pay attention to the dates on the web pages you are seeking examples from. They may or may not work, and your mileage may vary.

## Commands

The first command, and one you should get in the habit of issuing before working with a multimedia file, is `-i`, and represents the input file. Issuing this command, followed by a sole multimedia file, and without an output file specified, will list information for that file, revealing vital information about the formats used for the video and audio. The following is the printout of the file information for the New Moon trailer that I downloaded and converted for my wife to see on her Blackberry Storm:

```
$ ffmpeg -i new-moon-trailer.mp4
```

```
FFmpeg version 0.5, Copyright (c)
2000-2009 Fabrice Bellard, et al.
  configuration: --prefix=/usr --
enable-shared --libdir=/usr/lib --
shlibdir=/usr/lib --
incdir=/usr/include --enable-postproc
--enable-gpl --enable-pthreads --
enable-libtheora --enable-libvorbis --
enable-x11grab --disable-debug --
enable-swscale --enable-libmp3lame --
enable-libfaad --enable-libfaac --
enable-libx264 --enable-libxvid --
enable-nonfree --enable-libamr_nb --
enable-libamr_wb
```

```
libavutil      49.15. 0 / 49.15. 0
libavcodec     52.20. 0 / 52.20. 0
libavformat    52.31. 0 / 52.31. 0
libavdevice    52. 1. 0 / 52. 1. 0
libswscale     0. 7. 1 / 0. 7. 1
libpostproc   51. 2. 0 / 51. 2. 0
built on Jun  2 2009 20:09:15, gcc:
4.1.1 20060724 (prerelease) (4.1.1-
4pclos2007)
```

```
Seems stream 0 codec frame rate
differs from container frame rate:
48.00 (48/1) -> 24.00 (24/1)
Input #0, mov,mp4,m4a,3gp,3g2,mj2,
from 'new-moon-trailer.mp4':
  Duration: 00:02:19.88, start:
0.000000, bitrate: 543 kb/s
    Stream #0.0(und): Video: h264,
yuv420p, 480x200, 24 tbr, 24 tbn, 48
tbc
    Stream #0.1(und): Audio: mp3,
44100 Hz, stereo, s16, 128 kb/s
At least one output file must be
specified
```

The first line lets you know which version of ffmpeg (0.5, in this case) is being used. What immediately follows is how your version of ffmpeg is configured, and when, and how, it was built. When ffmpeg is compiled, options like which codecs to support and which libraries to include, have to be specified. This information is useful to let you know which codecs are at your disposal. The last 4 lines are what you will be most interested in. The first of those lines tell you the duration of the video file (2 minutes, 19.88 seconds), the starting point of that video (usually 0.000000), and the average bitrate of the video file.

The next line tells you the codec used (h264), the resolution of the video image (420p), and the size of the video image (480x200). The third line tells you about the codec used for the audio portion of the file (mp3), the sampling depth (44100 Hz), whether it's stereo or mono (stereo), and the sample rate (128 kb/s).

Converting from one format to another is relatively easy with ffmpeg. Take a look at these examples:

```
ffmpeg -i jinglebells.mp3
jinglebells.wav
```

```
ffmpeg -i new-moon-trailer.flv new-
moon-trailer.avi
```

The first one converts the MP3 file, jinglebells.mp3, into a WAV file of the same name. The second one converts the FLV file, new-moon-trailer.flv, to an AVI file, named new-moon-trailer.avi. You need to be sure to use the -i parameter. It tells ffmpeg that the file name immediately following is the input file. Without the -i parameter, ffmpeg will attempt to do the conversion, and name the output file the same name as the input file. Ffmpeg will, by default, attempt to make the conversion as "losslessly" as possible.

Of particular interest is the second example above. While it works, the results are less than stellar. With no other parameters specified, ffmpeg will default to a video bitrate of 200 kbps. The video will not be of very good quality. Fortunately, we can give ourselves much better control of the finished product. Mind you, we can't put in garbage and spit

out a diamond. The old adage "garbage in, garbage out" really does apply here. And, unless we exercise control over the finished product, we can put in a diamond, and spit out garbage.

Let's redo the video conversion above, manipulating some of the parameters for the output video:

```
ffmpeg -i new-moon-trailer.flv -b
500000 -s 480x200 -vcodec libxvid -ab
128k -ar 44100 -acodec libmp3lame new-
moon-trailer.avi
```

So, let's take a walk through what we have done here, item by item. We have specified the input file (-i) as new-moon-trailer.flv. We've also instructed ffmpeg to make the output video bitrate 500 kb/s (-b 500000), to resize it to 480 x 200 (-s 480x200), using the Xvid codec (-vcodec libxvid), to make the sound bitrate 128 kb/s (128k), to make the sound sample rate 44,100 Hz (-ar 44100), to use the MP3



audio codec to encode the audio in (-acodec libmp3lame), and to name the output file to new-moon-trailer.avi. Phew! Are you as out of breath reading all of that as I am leading you through it?

It's actually quite simple, once you break it down into its individual components. The thing to remember is that any options or parameters you specify will apply to the filename immediately following them. Thus, you can specify options for the input file, and for the output file -- even repeating them as necessary withing the same command line. The order in which the options appear is unimportant, other than they must precede the file for which they are intended.

If you were paying attention to the above command line, you might have noticed something else. For the video bitrate (-b 500000), I put the whole number in there. I could have just as easily specified the bitrate as 500k. Similarly, for the audio bitrate (-ab 128k), I could have just as easily specified the bitrate as 128000. The way you specify the number is interchangeable.

Certainly, there are a LOT more options than those that we have covered thus far. The more you dig into ffmpeg, the more you realize how powerful and flexible it is, and just how many possibilities there are. So, with that in mind, let's take a look at a few more examples. If you are interested, a simple Internet search will turn up many more examples than I can possibly present here.

Say you have just saved a file from YouTube or MetaCafe. You take a look at the information or specification of the file, and decide that the audio (or

video) portion of the file is already in the format that you want. Ffmpeg makes it easy to "let it ride," and to merely carry over the format you want to keep.

```
ffmpeg -i rock-and-roll-fail.flv -b 500k -vcodec h264 -s 320x240 -acodec copy rock-and-roll-fail.mp4
```

The above transcodes the input file, rock-and-roll-fail.flv, at a video bitrate of 500 kb/s, using the h264 video codec, resizes the video to 320x240, copies the file's audio track without transcoding, and produces an output file, named rock-and-roll-fail.mp4.

Ffmpeg also knows how to format your video for the different optical media formats that exist.

```
ffmpeg -i st-tos-ep-14.avi -target ntsc-vcd st-tos-ep-14.mpg
```

The above command will take the input file (st-tos-ep-14.avi), and transcode it to a format that is compatible with the NTSC VCD standard (-target ntsc-vcd). Other popular targets include ntsc-svcd, ntsc-dvd, pal-vcd, pal-svcd, and pal-dvd.

You can also use ffmpeg to strip the audio from a video file.

```
ffmpeg -i 102209-lecture.avi -vn -ar 44100 -ab 192k -acodec libmp3lame 102209-lecture.mp3
```

The -vn option tells ffmpeg to skip the video portion of the file, and produces the MP3 file with the options specified.

So you have some fun videos you would like to upload to YouTube to share with others? You can convert your videos to the Flash Video (FLV) format with the following command:

```
ffmpeg -i your_movie.avi -ab 56k -ar 44100 -b 200k -r 15 -s 320x240 -f flv output_file.flv
```

The -r 15 option sets the frame rate of the video to 15 frames per second. The -f flv option forces the output to the FLV file format.

Your buddy in the band has a whole directory of Windows Media Audio (WMA) files of your group's band practice, some of which you would like to have. But, being an advocate of FOSS and a user of Linux, you aren't all that happy having those files in a closed-source, proprietary format. Ffmpeg can come to your rescue!

```
ffmpeg -i tues-band-practice.wma -acodec libvorbis tues-band-practice.ogg
```

Without specifying any further options, the output will be at the default bitrate of 64 kb/s. We can increase that to, let's say, 192 kb/s, by instructing ffmpeg to do so:

```
ffmpeg -i tues-band-practice.wma -acodec libvorbis -ab 192k tues-band-practice.ogg
```

## Summary

As you can see, there are many possibilities with ffmpeg, and certainly many, many more than we have covered here. I urge you to explore these possibilities. Go through the ffmpeg documentation. Bring up the ffmpeg man pages, by typing man ffmpeg at the command line. Or simply do an Internet search for the conversion you are wanting to do. Without a doubt, you should head on over to the ffmpeg web site, <http://www.ffmpeg.org/index.html>, and have a look around. I have only barely scratched the surface of what is possible with this powerful multimedia tool. And, as I hope I have shown, it's much easier than you might initially think.

## Want To Help?

Would you like to help with the PCLinuxOS Magazine? Opportunities abound. So get involved!

You can write articles, help edit articles, serve as a "technical advisor" to insure articles are correct, create artwork, or help with the magazine's layout.

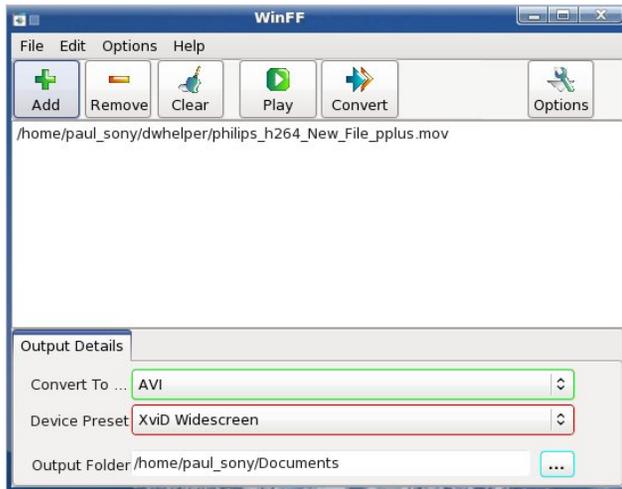
Join us on our [Google Group mailing list](#).

Answers to Mark Szorady's Double Take: (1) Belt buckle missing; (2) Rudolph's nose smaller; (3) Word balloon different; (4) Tree ornaments missing; (5) Beard different; (6) GPS different; (7) Santa's eyes different

# WinFF: ffmpeg's Happy Face

by Paul Arnote (parnote)

If you are like many users, you tend to shy away from the command line. And granted, many users find the command line to be confusing. Such as may be case when attempting to follow along with this month's article on ffmpeg. Luckily, there is an excellent GUI front end for ffmpeg, called WinFF.



When you launch WinFF, don't let the simplistic window that appears fool you. WinFF preserves all of the power of ffmpeg, while insulating you from the command line. Virtually anything you can do with ffmpeg from the command line, can also be done with WinFF – even if it initially appears that you can't.

The simple window above is all that many users will need to do basic multimedia file conversions. First, click on the "Add" button, to select your multimedia

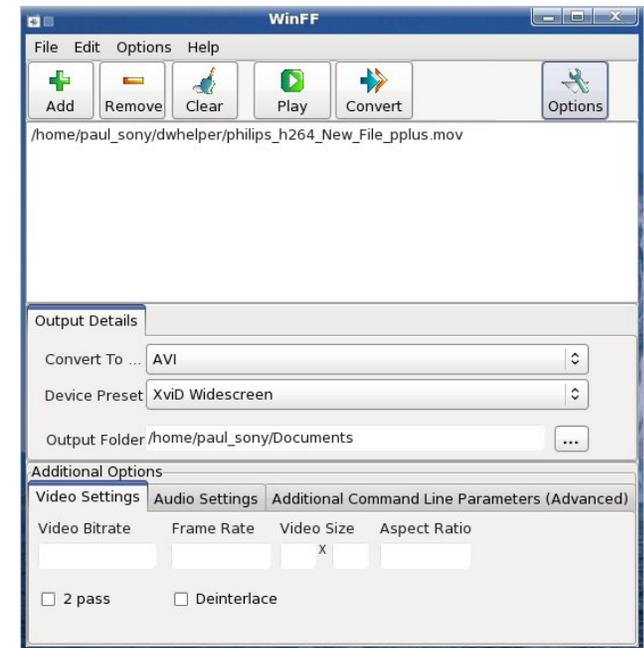
file from the File Open dialog box. Once selected, it will appear listed in the central portion of the window, just below the button toolbar.

Next, select the type of file you want to convert to by clicking on the button I've outlined in green in the screenshot above. A drop down list will appear, allowing you to choose from audio files, AVI, Blackberry, Ipod/Iphone, Creative Zen, DVD, mobile phones, PS3, Palm, and quite a few more.

By selecting the button I've outlined in red in the screenshot above, you can further fine-tune the output file. The choices will vary, depending on what you have selected in the "Convert To ..." drop down list. Several preset settings exist for each "Convert To ..." category.

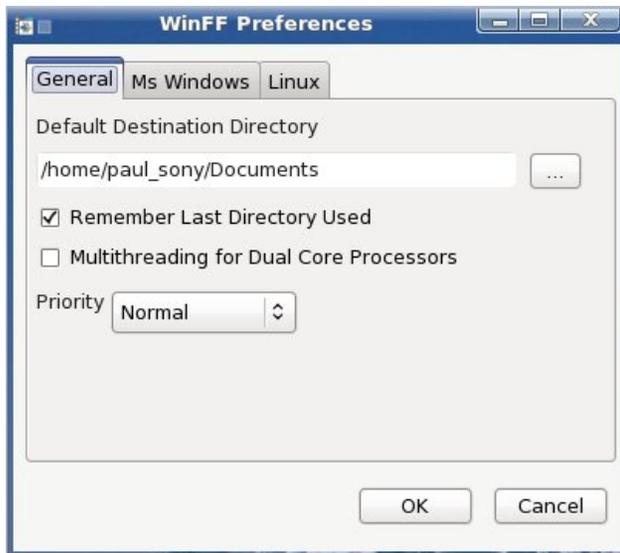
Finally, by selecting the button I've outlined in cyan in the screenshot above, you can choose where the output file is stored.

Like I mentioned, many users will find the basic window will meet most of their multimedia conversion needs. But, in time and as you keep converting multimedia files, you are guaranteed of running across a file that does not convert well with any of the settings. When this happens, you have three choices: accept the improper settings (for that file) that produce a less-than-perfect converted file, learn how to manipulate the ffmpeg command line and create your own preset, or use the "Options" button of WinFF to alter some of the output parameters to properly convert your file.



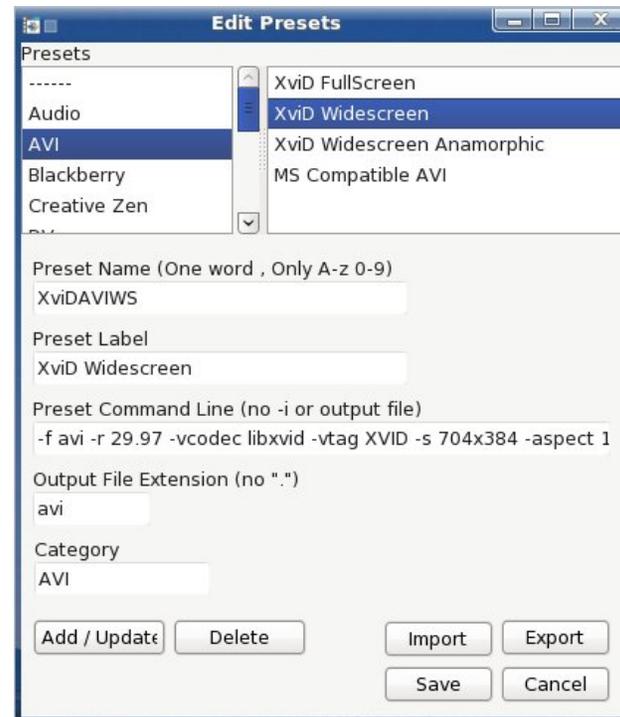
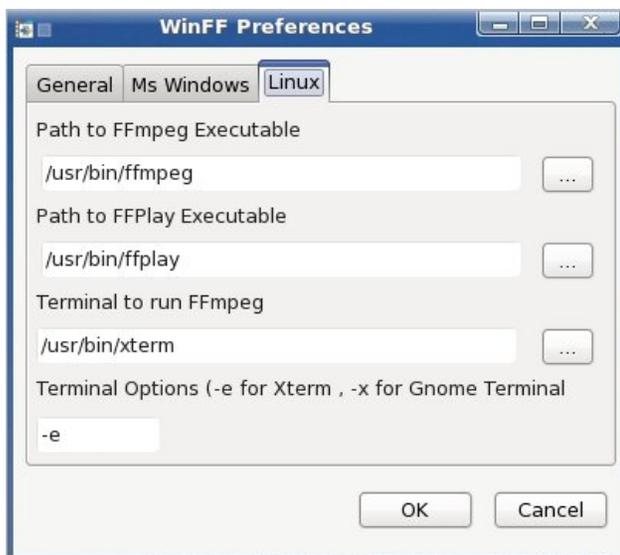
When you select the "Options" button on the toolbar (or Additional Options from the Options menu), the WinFF window expands to reveal additional settings. Here, you can adjust the video bitrate, the frame rate of the video, the size of the output video, the aspect ratio, whether you wish to use 2 Pass encoding (to give you greater quality), to select if you want to deinterlace the image, alter the audio parameters, or provide advanced, additional command line parameters.

From the Edit menu, selecting Preferences will bring up the following dialog box:



Under the General tab, you can adjust the default destination directory, where the output file is stored. You can also instruct WinFF to remember the last directory used, select multithreading for those users who have dual core processors, and the priority (High, Normal, Idle).

Under the Linux tab, you can select the path to FFmpeg, FFPlay, and which terminal program to use.



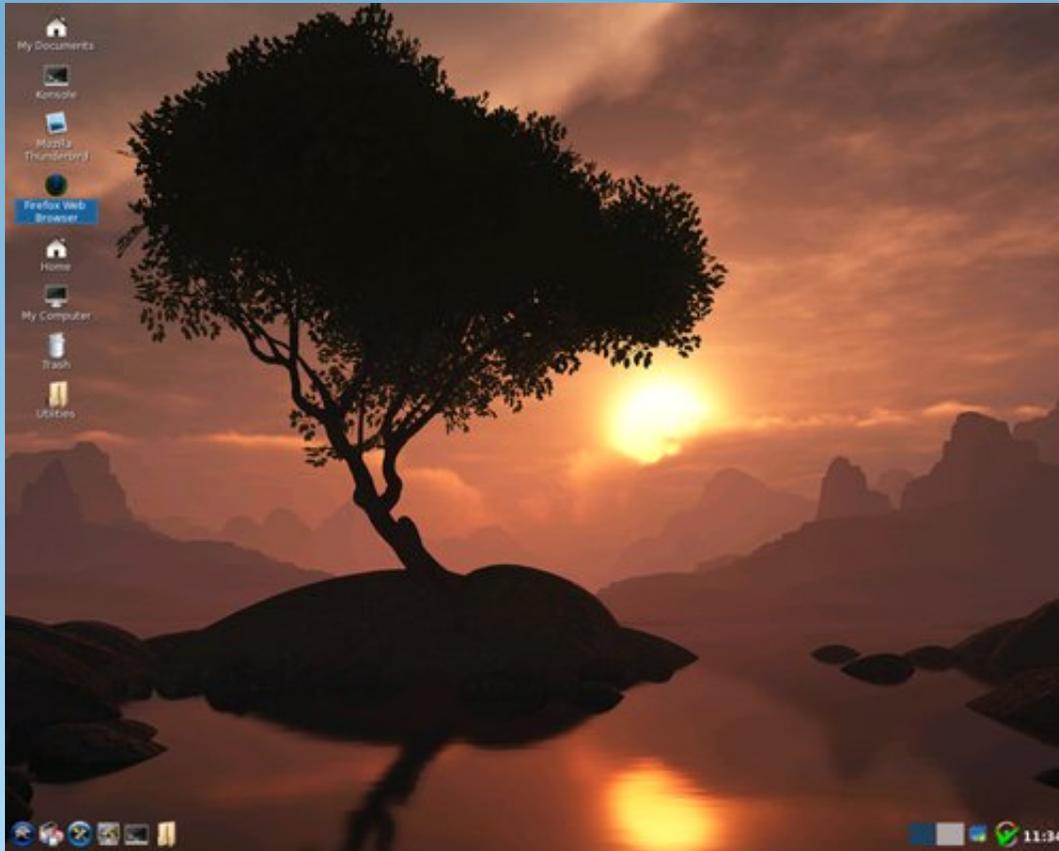
The other option under the Edit menu, Presets, allows you to alter the presets in each category, or to even add your own. To add your own, select the "-----" item, select "Add/Update," and fill in all the fields of the dialog box, including the ffmpeg command line for your new preset, minus the -i parameter, and minus the name of the output file. You can also alter the parameters of any of the existing defined presets. This is, essentially, what I did to design my own preset to convert videos to a format that is compatible with playback on my Blackberry Storm.

## Summary

If you have the need to convert multimedia formats, so that they are playable on other devices, or so they take up less room on your hard drive, or any other of a myriad of reasons, WinFF may be exactly what you are looking for. It doesn't require you to know the commands used with ffmpeg on the command line (although, such knowledge is helpful), and it insulates you from having to use the command line interface to do your multimedia conversions. WinFF allows you to get as deeply involved as you might like in the conversion process, or as little as you like, and can handle the needs of new and seasoned users, alike. WinFF, by itself, is a powerful tool. Coupled with the information from the Multimedia Mean Machine: ffmpeg article, WinFF can be an even more powerful tool in your multimedia arsenal.



# Screenshot Showcase



Uploaded by rudge, November 29, 2009, running LXDE.



## Reach Us On The Web

**PCLinuxOS Magazine Mailing List:**

<http://groups.google.com/group/pclinuxos-magazine>

**PCLinuxOS Magazine Web Site:**

<http://pclosmag.com/>

**PCLinuxOS Magazine Forums:**

**PCLinuxOS Magazine Forum:**

<http://pclosmag.com/forum/index.php>

**Main PCLinuxOS Forum:**

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

**MyPCLinuxOS Forum:**

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

# Forum Foibles

To: MeeMaw

Lots of new tutorials for  
Inkscape and Gimp

From: ms\_meme



To: maddogf16

Time, so you can visit the forum  
more often. Where are you man?

From: Joble



To: Paul Arnote

For such a fantastic job as  
chief editor--an Android phone

From: Archie

To: Cindy, jaydot, devecs,  
Hottiegibbon and O-P

A yellow Made in China baseball  
cap emblazoned with  
2008 Beijing Olympics

From: Archie



To: Paul and Archie

Thanks for encouraging  
me to do whatever it is I do

From: ms\_meme



To: Joble

An empty Fed\_Ex box with a card  
that would state: *claim your present  
at the nearest Fed\_Ex office*

From: Archie



To: Neal Brooks

For being such a loyal friend  
after all these years --  
a Samsung NC10 netbook to try  
and get PCLOS to run on it

From: Archie



To: smufslover, johnW, mewmickey,  
deBaas and wamukota

A Learn Chinese audio CD

From: Archie



To: ms\_meme

A wireless clip-on microphone  
for a ukulele

From: Archie



To: parnote

No stress and perfect  
magazines

From: MeeMaw



To: joble

Success for all the forum members  
you help to configure their wireless

From: MeeMaw



To: Crow and Scoundrel

A USB key with PCLOS 2010

From: Archie



To: Tex

A Linux, Made in China, red  
baseball cap

From: Archie



To: Archie

Immediate internet no matter  
where he moves

From: MeeMaw



To: Tex

Mountains of donations

From: MeeMaw



To: ms\_meme

Your voice to continue its  
wonderful tones forever!

From: MeeMaw



To: Joble, Neal, Leiche, and Travisn00  
 New quad-core computers for easier packaging  
 From: parnote 

To: coyoteawoo  
 A trouble-free laptop  
 From: MeeMaw 

To: StrickToo  
 More hours in the day  
 From: parnote 

To: To: ALL PCLinuxOS Users  
 A wonderful holiday!!! (No matter which one or how you celebrate!)  
 From: MeeMaw 

To: ms\_meme:  
 A new paint brush but don't rush to the canvas  
 take a moment as I'm sending to you not one but two  
 just open the box No! not sox now look within see the pen?  
 dare to try a brush never dry use inkscape it's never too late  
 sign the picture with pen that's sure with pen never dry  
 go ahead - try just hope your city doesn't lose electricity.  
 From: Neal  
 (card carrying member of the amateur-off-the-cuff-poet's-society)

To: Meemaw  
 PCLinuxOS on her work computer  
 From: parnote 

To: Linuxera  
 The strength to stay smoke-free  
 From: parnote 

To: Ms\_meme  
 Boxes to keep all her caricature parts in  
 From: parnote 

To: All PCLinuxOS Users  
 Another year of worry-free, virus-free, security  
 From: parnote 

To: Larnote (my wife, also a PCLinuxOS User)  
 Motherhood  
 From: parnote 

To: Texstar  
 Trouble-free kernel upgrades and builds  
 From: parnote 

To: All people of the world  
 Peace, serenity, love, tolerance, and prosperity  
 From: parnote and the magazine staff

# Command Line Interface Intro: Part 3

by Peter Kelly (critter)

In the first two installments of this introduction, we learned how to get around the file system, create and edit files, how to use some of the more common commands in Linux, and how to cut down on some of that tedious typing. Hopefully, the command line environment is not so intimidating now. There is a bit more theory to cover but it is nothing too difficult, and it really doesn't matter if you don't understand it all. When you come to a point where you need that information, you can recall "hey! I read about that," and then come back to look it up, or search the internet for it. Importantly, you will have been introduced to the fact that it exists, which gives you a way forward. If you have followed so far and get through this episode, then you will have a good grasp of what Linux is about. Then we can start using the real power of the Linux command line that you can never fully achieve by using only the GUI.

## A New Name

When Jane got her computer, she chose to name it 'home.' It is, after all, the computer that she uses at home. This has a couple of disadvantages. What if the computer is to be networked, and her brother, John, has also named his computer home? There would be two computers on the network, both named home, and obviously this is not good. Also, when Jane looks at her prompt, she sometimes mistakes home in the prompt to be telling her that she is in the home directory. Let's change things. Jane decides that she wants her computer to be known as 'daisy'.

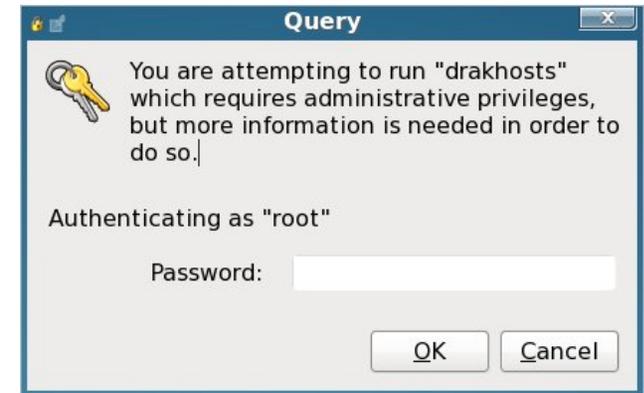
The name of a computer on the network is known as the 'hostname'. If no name has been assigned, then the name 'localhost' (meaning 'this computer' ) will be shown. Any change needs to be done in two places in PCLinuxOS, and it needs to be done with root privileges. The name localhost is how the computer refers to itself internally, a bit like saying 'me'. In order for the computer to recognize that the new hostname daisy refers to this computer, we have to create an alias. This is like saying daisy, a.k.a. localhost.

The first file that needs to be edited is named hosts, and can be found in the /etc directory. This can be done in two ways: by editing the file directly with an editor, or by using the PCLinuxOS Control Center. The PCLinuxOS Control Center, also known as PCC, is a front end for several smaller, graphical utilities whose names usually contain the word 'drak' and do a little bit of command line work for you. To prove a point:

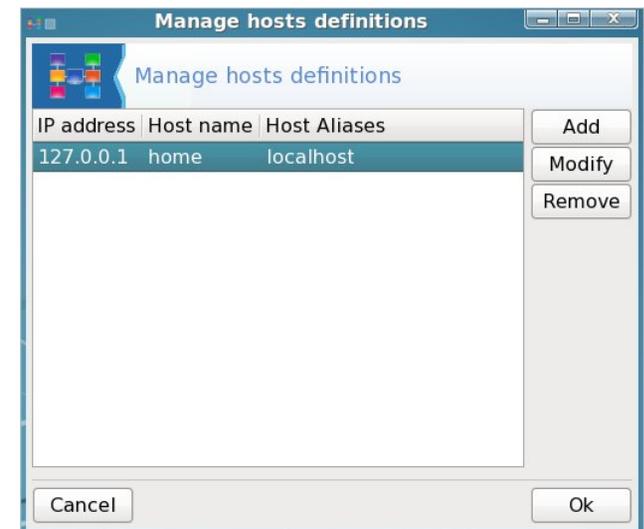
cat /etc/hosts

```
jane@home > host $ cat /etc/hosts
# generated by drakhosts
127.0.0.1 home localhost
jane@home > host $
```

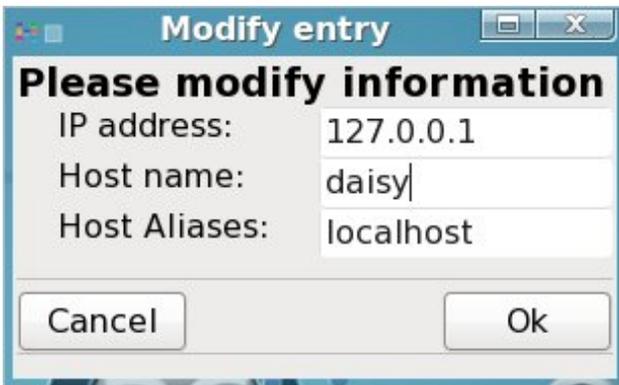
If you have never changed it, your hosts file will look slightly different. Type drak and press Tab to see the available commands. The command we want is drakhosts (the Control Center 'front page' is drakconf). Type 'ho' and press Tab to complete the command and press enter. If you did this as a normal user, then you will be prompted for the root password.



Then you will get this screen.



Notice that there are three columns: IP address, hostname and host aliases. Select localhost and then click modify.



In the host name box, enter the name you want for your computer (jane has chosen the name daisy), and in the host aliases box enter localhost (lower case no spaces), Then click OK in the modify dialog box, and click on OK in the drakhosts box to get back to the command line.

#### cat /etc/hosts

```
jane@home > host $ cat /etc/hosts
# generated by drakhosts
127.0.0.1 daisy localhost
jane@home > host $
```

Notice that the contents have changed. Most of the PCC utilities are just fancy-pants ways of editing system configuration files.

Now that this computer knows that we are referring to itself when we use the name daisy, we need to make sure that all other computers on the network also know.

Notice the IP address. That's the sequence of four numbers at the beginning. Localhost always has this sequence 127.0.0.1 – it's how the computer spells 'me.' Computers speak in numbers. An IP address is how computers refer to each other. On a network, a computer is known by the IP address assigned to its network adapter, usually something like 192.168.0.1, which is not easy for humans to remember, so we give the computer a 'proper' name, like daisy, so that it is more easily recognized and referred to on the network.

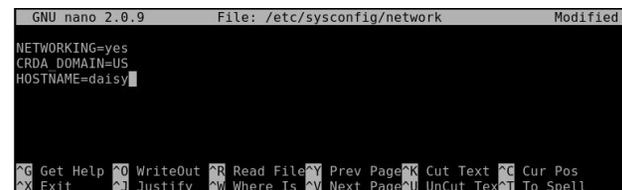
The second file that needs to be changed is called network, and is in the sysconfig directory, a sub-directory of /etc.

We'll use the terminal to change this file.

#### su (enter)

#### Enter the root password.

nano /etc/sysconfig/network will open the file for editing. Add or change the line HOSTNAME=daisy (or whatever name you chose). Notice uppercase and no spaces.



Press enter and then ctrl-x to save the file and exit. Job done! - command line style.

That's it, but you will need to reboot the apply the changes.

```
jane@daisy > ~ $
```

## Finding Things

To be able to work with files, we have to know where they are or how to find them. There many ways in Linux to get this information, so let's run through some of them.

**locate** – this command uses a database of files known on the system to look up their whereabouts. This database is updated on a daily basis automatically by the system using the cron utility, which we will look at in due course. The database may be updated manually at any time using the command updatedb. The updatedb command needs root privileges, while locate doesn't.

```
jane@daisy > ~ $ locate .bashrc
/etc/skel/.bashrc
/home/jane/.bashrc
/home/john/.bashrc
jane@daisy > ~ $
```

**.bashrc** is the file that we edited to change the color of our prompt. Locate has found 3 instances of the file: Jane's, John's, and the one that is used when a new user account is created. Locate has the advantage of being extremely fast, but the disadvantage of only knowing about the files that it has been told to store in it's database.

```
jane@daisy > ~ $ whereis ls
ls: /bin/ls /usr/share/man/man1/ls.1.bz2
jane@daisy > ~ $
```

**whereis** - this command looks only for Linux commands and their associated source and documentation files.

Here, the binary file that is the actual ls command, and its compressed manual documentation file, has been reported.

**find** – an extremely powerful command with a slightly more complex syntax than most other Linux commands. Most people (that's us) will only need a very small amount of the power available in this command, so we shan't look too deeply at all the bells and whistles – yet.

By default, find uses the current directory for its input, STDOUT (the screen) for its output and 'all files' as the option, which results in the output from using find being the same as from the command ls -aR, albeit in a slightly different format. Try it. All that output is because find, unchecked, looks at all files, including hidden ones, in its start directory, and then recursively in all sub-directories, outputting all those files that match its search criteria, in this case 'all files'.

To make use of the find command, we have to control it. The most common way of using find to locate a particular file or set of files looks like this. Find {where to start looking} {search criteria} {filename(s)}

There are lots of things that could go in the {search criteria} position, but usually we want to search for a file by name. So, to find a file named 'network' that is believed to be somewhere in the /etc directory

structure, we would format our command thus:

```
jane@daisy > ~ $ find /etc -name network
find: `/etc/portreserve': Permission denied
/etc/rc.d/init.d/network
find: `/etc/skel/.kde': Permission denied
find: `/etc/cups/ssl': Permission denied
/etc/netprofile/profiles/default/services/network
/etc/sysconfig/network
jane@daisy > ~ $
```

This has found three files named network and given us their locations. Unfortunately, it has also thrown out some errors. The /etc directory is a system directory, and as such is not owned by Jane. Jane can only see the files in those directories to which the system has granted her permission to read the contents. When we covered redirection, I talked about **STDIN** and **STDOUT**, and mentioned a third data stream named **STDERR**. These three data streams may also be referred to by numbers, 0,1 and 2 respectively. **STDERR**, number 2, is to where programs write their error messages. Depending on the program, this may be a file such as a log file or to **STDOUT**, as was the case here. To hide these messages, we can redirect **STDERR** to somewhere else. Linux treats devices as files, and lets us read and write to them just as we would to a file. Devices have names like /dev/cdrom or /dev/hda1, but there is a special device known as /dev/null. /dev/null is like a black hole, swallowing anything written to it never to be seen again. Similarly, reading from /dev/null you get nothing, or a stream of nothings. Not the number 0, but the character that marks the end of a file and is known as **EOF**. To redirect the error messages but keep the data output, we leave data stream 1 (**STDOUT**) alone and intercept number 2 (**STDERR**) with the directive 2>/dev/null.

```
jane@daisy > ~ $ find /etc -name network 2>/dev/null
/etc/rc.d/init.d/network
/etc/netprofile/profiles/default/services/network
/etc/sysconfig/network
jane@daisy > ~ $
```

Nice clean output.

When you don't know the exact name of the file that you are looking for, then you can use 'wild cards.' These are special characters that the shell interprets differently. The most common ones are:

- '\*' means 'substitute here zero or more unknown characters',
- '?' means 'substitute exactly one unknown character'

There are a lot more but we will cover these later when we get to 'regular expressions', These two suffice for most of our present needs.

## Linux – The Basics

Linux really only understands two things: files and processes. If that seems to be a rather bold and sweeping statement, then consider this: Whatever we do on a computer involves manipulating files. We create, delete, edit and rename them. We cut them up, join them together and search them for a particular piece of information. In short, we do all manner of things to files to get our desired result. We do this using processes.

There are several types of files.

- Regular files. These can be split into:
  - Data files such as text files, pictures, or music files
  - Executable scripts – lists of instructions, in human-readable language, to be executed sequentially (but often with some clever route planning that makes it difficult to follow).
  - Binaries – executable files in computer-readable form. These are the applications that we run and libraries of functions that the applications refer to. Their contents are mostly unintelligible to humans.
- Directories. Really just lists of files that may be scattered over one or more hard drives grouped together for human convenience.
- Links. Pointers to actual files. There may be many links to any one file.
- Special Files. These are used by Linux to communicate information to the system, and to interact with the hardware. These are mostly found in the /dev directory. In Linux, even your mouse is treated as a file.
- Sockets. We can ignore these for now.
- Named pipes. As above. These will also keep until later.

When we click on an executable file, or type its name on the command line, the kernel starts a process which will hopefully run until terminated, either on completion, or prematurely by the user. Each process is given an identity in the form of a number, known as the 'process id'. The process may, in turn, start any number of sub-processes.

When the initial process is terminated, then any unused processes associated with that process are also terminated, and any system resources such as allocated memory and the process id, are released, and any open files are closed. Occasionally, things don't quite go according to plan and the system resources start to be in short supply, having the effect of slowing down the system, unless somebody intervenes. A system reboot would fix things, but that is not always convenient. This was designed as a multi-user system, and shutting down a large system would cause too much disruption. There are other ways to do things.

This is why we need to understand about files and processes.

## Links

Perhaps now is a good time to discuss links. There are two kinds of links: soft links, also known as symlinks (symbolic links), and hard links. A soft link is similar to a shortcut in Windows and is a pointer to a filename that may be in the same directory or, more commonly, buried deep in some other directory structure. This is a convenient way to access files without having to enter (or even know) the entire fully qualified address of the file. For example,

suppose that we have a file named contacts that resides several directories deep in your home directory, but you need to be able to access it easily from your home directory.

Let's set this up.

```
cd ~
mkdir -p mydir/personal/mycontacts
```

Here the -p option tells the mkdir command to make any parent directories as required.

**mv contacts mydir/personal/mycontacts** moves the contacts file we created previously into the new directory

```
jane@daisy > ~ $ cat contacts
cat: contacts: No such file or directory
jane@daisy > ~ $ █
```

The file cannot be read because we moved it to our new directory

**ln -s mydir/personal/mycontacts/contacts link-to-contacts** will create a soft (-s) link to that file and then it can be accessed through link-to-contacts.

**cat link-to-contacts** will display the contents of /home/jane/mydir1/personal/mycontacts/contacts.

```
jane@daisy > ~ $ cat link-to-contacts
john
amy
gustav
bob
glenn
simon
george
jane@daisy > ~ $ █
```

The syntax for the command `ln` is `ln {-s if a soft link} {what you want to link to} {name of the link}`

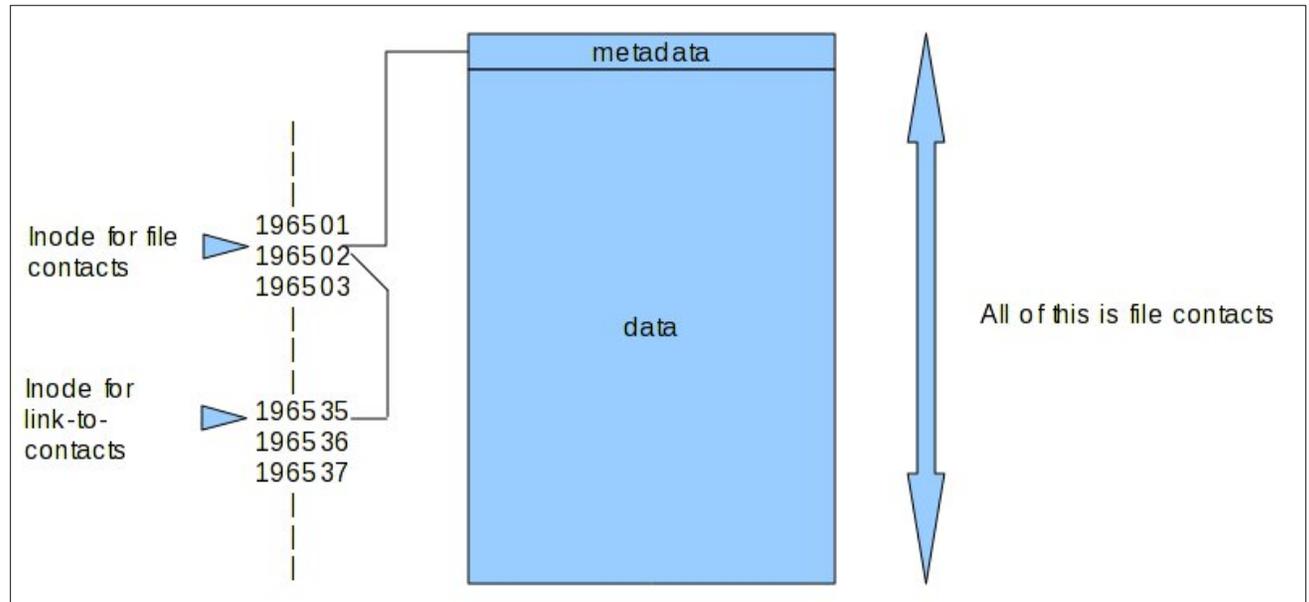
The system makes extensive use of symlinks, and any file may be linked to many times. If the original file is deleted from the directory `mycontacts`, then the link remains in my `/home` directory, but `cat contacts` now gives the message 'No such file or directory.' This is known as a broken link, and if we issue the command `ls -l`, we will see the output for that link listed in flashing red/white text (other distributions may use different colors).

Hard links don't point to the file name, but rather contain a reference to something known as an 'inode'. When a file is created, the file system allocates a number to it, an inode. This number points the file system to a set of meta data, or information about the file, it's permissions, it's name, and where the data is stored on the disk etc. Every inode on a partition is unique and knows only about one file, but the same inode number on a different partition or drive will reference a different set of meta data, and hence file. Think of a file as having two sections: the meta data part that is referenced by the inode and the data part that is referenced by the meta data. Normally, you don't need to know about inodes, as the filesystem does all that for you.

You can see these numbers if you issue the command

`ls -li`

```
jane@daisy > ~ $ ls -li
196503 contacts2          196494 Movies/    196500 newfile
196463 Desktop/         196458 Music/     196501 newfile2
196461 Documents/      196690 mydir/     196487 Pictures/
196536 link-to-contacts@ 196497 mydir1/   196486 tmp@
jane@daisy > ~ $
```



`cd mydir/personal/mycontacts`

```
jane@daisy > mycontacts $ ls -li
196502 contacts
jane@daisy > mycontacts $
```

A hard link is a bit like another name for the file, but it inherits the files DNA, as it were. Creating a hard link is the same as for a soft link, but without the `-s`. When a file is created, the number of links to the inode is set to one, and when a hard link is created, the count for the number of links to the inode is increased by one. When a hard link or 'the original file' is deleted, then the count is decreased by one. When, and only when, the link count reaches zero, the inode and storage for the meta data and data parts are released i.e. the file is deleted.

`ln ~/mydir/personal/mycontacts/contacts`

`contacts-link` creates a hard link named `contacts-link`

`ls -li`

```
jane@daisy > ~ $ ls -li
196503 contacts2          196690 mydir/
196502 contacts-link     196497 mydir1/
196463 Desktop/         196500 newfile
196461 Documents/      196501 newfile2
196536 link-to-contacts@ 196487 Pictures/
196494 Movies/         196486 tmp@
196458 Music/
jane@daisy > ~ $
```

Note that the inodes are the same for both the link and the file, i.e. 965021

```
jane@daisy > ~ $ cat contacts-link
john
amy
gustav
bob
glenn
simon
george
jane@daisy > ~ $
```

## cat contacts-link

**rm mydir/personal/mycontacts/contacts** deletes the original file.

```
jane@daisy > ~ $ rm mydir/personal/mycontacts/contacts
rm: remove regular file `mydir/personal/mycontacts/contacts'?
y
jane@daisy > ~ $
```

## cat contacts-link

```
jane@daisy > ~ $ cat contacts-link
john
amy
gustav
bob
glenn
simon
george
jane@daisy > ~ $
```

Although the file has been deleted, the link still points to the inode, and can thus access the data which has not yet been deleted. Now while this may be seen as a security nightmare, it does have the advantage of allowing important files to be accessed by unsafe hands, while being comforted by the

knowledge that the link to the file data can be easily reconstructed and no actual data loss need occur.

## Permissions & Groups

Unix, from which Linux was developed, was designed as a multi-user system, and a method was needed to determine who had access to which files. There are some files that are private, some that other users need access to, and some that may be made public. Also, the level of access needs to be considered: are users allowed to modify or delete the file, or if the file is executable, who may execute it?

By default, when a user creates a file, they are known as the 'owner' of that file. It belongs to the users primary group, but this can be changed. Some users create files that they need to allow a group of other users to access, but deny that access to others. Permissions were defined in three levels:

- Read permission
- Write permission
- Execute permission (In the case of a directory you may change to it.)

Each of these permissions are applied or removed for:

- The owner
- The group
- Everybody else

For regular files, the permissions are fairly obvious. For a directory, read permission means that you may

```
jane@daisy > ~ $ ll
total 48
-rw-r--r-- 1 jane jane 44 Nov 10 12:37 contacts2
-rw-r--r-- 2 jane jane 39 Nov 10 12:33 contacts-link
drwxr-xr-x 3 jane jane 4096 Nov 16 08:34 Desktop/
drwxr-xr-x 2 jane jane 4096 Nov 10 22:46 Documents/
drwxr-xr-x 2 jane jane 4096 Feb 26 2007 Movies/
drwxr-xr-x 2 jane jane 4096 Feb 25 2007 Music/
drwxr-xr-x 3 jane jane 4096 Nov 10 20:45 mydir/
drwxr-xr-x 2 jane jane 4096 Nov 10 12:06 mydir1/
-rw-r--r-- 1 jane jane 69 Nov 10 12:10 newfile
-rw-r--r-- 1 jane jane 2174 Nov 10 12:12 newfile2
drwxr-xr-x 2 jane jane 4096 Nov 11 00:38 Pictures/
-rw-r--r-- 1 root root 3084 Nov 13 06:56 test.txt
lrwxrwxrwx 1 jane jane 5 Nov 12 12:39 tmp -> /tmp/
```

list the contents (file or directory names), write permission means that you may create, delete or rename files in the directory, and execute permission means that you may 'cd' – change to that directory.

If we look at a directory listing using the command **ls -l**:

The first position on the left indicates the file type and this can be any of the following:

- - regular file or hard link
- d directory
- l symbolic link
- p named pipe
- s socket
- c character device
- b block device

The next nine positions indicate the files permissions. The first three are the user permissions, the second three the group permissions, and the last three are the other, or world, permissions. The read, write and execute permissions are displayed like this:

user	group	other
r w x	r - -	r - -

Here the user may read, modify and execute the file while others may look at the contents only. The read and write permissions are represented by 'r' and 'w', but the execute permission may be 'x', 's' or 't'.

- x the normal execute permission
- s suid – set user id
- t The 'sticky' bit

The last two are rarely needed by regular users so we can skip them for now. Permissions may be changed by root or by the owner of the file and the command to do this is

### **chmod {option} {permissions} {file or directory name}**

What you put in the permissions part of the above statement may be done in two ways.

You can use 'u', 'g', 'o' and 'a' (all) to specify which set of permissions to change, 'r', 'w' and 'x' for the permission and '+', '-' or '=' to set or unset the permissions. Additionally, you may combine these to change more than one. Omitting u, g or o sets or unsets the specified permission in all positions.

Examples: If myfile has permissions rw- r-- r--

**chmod g+w** adds write permission for the group, i.e. rw- rw- r--

**chmod o+w** adds write permission for others, i.e. rw- rw- rw-

**chmod +x** adds execute permission for everybody, i.e. rwx rwx r-x

**chmod ug-w** removes write permission for the user and group, i.e. r-x r-x r-x

**chmod ugo=rw** sets permission to read write for everyone, i.e. rw-rw-rw-

The other way to specify permissions is with numbers. Numerically permissions are set like this:

read=4, write=2 and execute=1.

This is expressed in something known as 'octal' (counting in eights instead of tens), but we don't need to understand that here to use it. Instead of 'r', 'w', 'x' we use '4', '2' and '1'. To combine them, we add them up so that rw = 4 + 2 = 6.

To apply this to the three groups, we use three of the sums so that 'rwx rw- r--' becomes (4+2+1) (4+2+0) (4+0+0) = 764.

This is also sometimes expressed as 0764 – don't worry about the leading zero, it's an 'octal' thing and, for our purposes, can be included or not.

So to set permissions to rw- rw- r-- we would use the command **chmod 664 myfile1**.

Looking again at the directory listing, after the permissions, is a number that is the number of links

or references to that file. After that, we have the name of the owner of the file, and then the name of the group that the file belongs to.

To get a list of all groups, look at /etc/group

### **cat /etc/group**

To find out which groups somebody belongs to, use the command

### **groups username**

To add a new group, you need root privileges and the command 'groupadd'

### **su (enter root password) groupadd friends**

adds the new group 'friends' to the /etc/group file.

To add users to groups use the command usermod the -a option means append.

```
jane@daisy > $ groups john
john : john lp floppy cdrom cdwriter audio video users lpadmin polkituser dialout
```

### **usermod -aG friends jane (Note uppercase G) usermod -aG friends john**

Adds jane and john to the group friends. Becomes effective at the next login.

To make a file accessible to members of a group we can use the command 'chown' – change ownerships.

### **chown jane:friends contacts2**

This keeps jane as the owner of the file but changes group membership.

```
jane@daisy > ~ $ su
Password:
[root@daisy jane]# groupadd friends
[root@daisy jane]# usermod -aG friends jane
[root@daisy jane]# usermod -aG friends john
```

As we wanted to change only the group could have also done

### chown :friends contacts2

Groups are deleted with the command

```
[root@daisy jane]# groupdel friends
[root@daisy jane]# ls -l contacts2
-rw-rw---- 1 jane 502 44 Nov 10 12:37 contacts2
```

### groupdel groupname

This leaves all files that belonged to the deleted group 'orphaned'. Cleaning up this mess is up to you.

```
jane@daisy > ~ $ groups
jane lp floppy cdrom polkituser cdwriter audio video
users lpadmin dialout friends
jane@daisy > ~ $ ls -l contacts2
-rw-r--r-- 1 jane jane 44 Nov 10 12:37 contacts2
jane@daisy > ~ $ chown :friends contacts2
jane@daisy > ~ $ ls -l contacts2
-rw-r--r-- 1 jane friends 44 Nov 10 12:37 contacts2
jane@daisy > ~ $ chmod 660 contacts2
jane@daisy > ~ $ ls -l contacts2
-rw-rw---- 1 jane friends 44 Nov 10 12:37 contacts2
jane@daisy > ~ $ su john
Password:
john@daisy > jane $ groups
john lp floppy cdrom polkituser cdwriter audio video
users lpadmin dialout friends
```

The group has been deleted from the /etc/group file, and now the file shows as belonging to the indeterminate group 502. This known as the group id or guid and we can use this to tidy things up. Use the find command to locate all files that have a guid of 502.

```
jane@daisy > ~ $ su
Password:
[root@daisy jane]# find /home -gid 502
/home/jane/contacts2
```

We found, as expected, only the one file that we changed. but even if there were many files it would be a simple matter to

### chown :jane filename

If however, there were hundreds of files, then it would be rather daunting to manually change them all. To do this we might use a loop. We'll discuss this shortly.



Want to keep up on the latest that's going on with PCLinuxOS?

Follow PCLinuxOS on Twitter!

<http://twitter.com/iluvpclipinuxos>

## Testimonial:

# It's Like Having A New PC

by Rob8

I've got some pretty old hardware (2.8gig P4, 1 gig DDR, IDE drives, etc...) and had been dual booting XP and Mint. Everything worked OK, but nothing to write home about. I figured I'd give 2009.2 a try, in the Gnome flavor, since I had used PCLinuxOS a few years back. What a revelation! This old PC has never run so fast before. It is way faster than when running XP, and it beats the pants off of Mint as well. I'm especially happy with the speed in which pages load in Firefox, and how quickly files are accessed from my XP drive. All I can say is well done, guys!

Thanks also for saving me some money, because I was about to break down and build a box with a quad core and sata drives. I still will, but now I can wait until this economy improves (if it ever does).



# Make Their Jaw Drop

by Terry Brown (Animal)

I know that when a lot of people want to show off the capabilities of Linux, the first thing they do is demonstrate the bling: wobbly windows, minimize effects, cube, and such other eye candy goodness. Now that's not all bad, and it has its place in a demonstration. But whenever I want to show off the capabilities of Linux, I try to focus on those things that are truly unique and have true value.

For example, last night I was showing off my desktop to some extended family members. I was running the desktop shown in the November screen shots (below). Pretty utilitarian. Pretty, but functional, and minimal.

But then I asked them if they wanted to see something really incredible? So I inserted my latest remaster in the DVD drive and rebooted. And after a few minutes, we were looking at the very same screen we had just exited.

Color them unimpressed – until I told them that I was running off a live DVD, and that it was a fully functional desktop containing all the programs, settings, and drivers I had just showed them.

I explained that in the event of a hardware failure, or a corrupt update, that with that one disc,

I could reboot and continue any work I was doing uninterrupted. And, in a matter of a few minutes, I could reinstall from this disc and be right back to where I left off, bit for bit, without hardly losing a beat.

*Now that impressed them.*

Then I went on to demonstrate the power and flexibility of Synaptic, how I have a central repository (I hate that word by the way) to locate, update, and keep track of all the programs I may ever need for my needs.

Next, we discussed the value and philosophy behind open source software. I showed them the close personal relationships I have with several of

the people behind the software I use on a daily basis. I also know that if I ever encounter a problem, have a question, or just need to blow off steam, they are there and are willing to help. I asked them if they have ever encountered a "glitch" in Windows or one of the programs they ran, and if so, how did they go about getting help?

Well, of course they have. Anyone who has run Windows has, but that wasn't the point. It was about where to go when that happens. They had no clue who to contact if they had a problem, other than the local PC store.

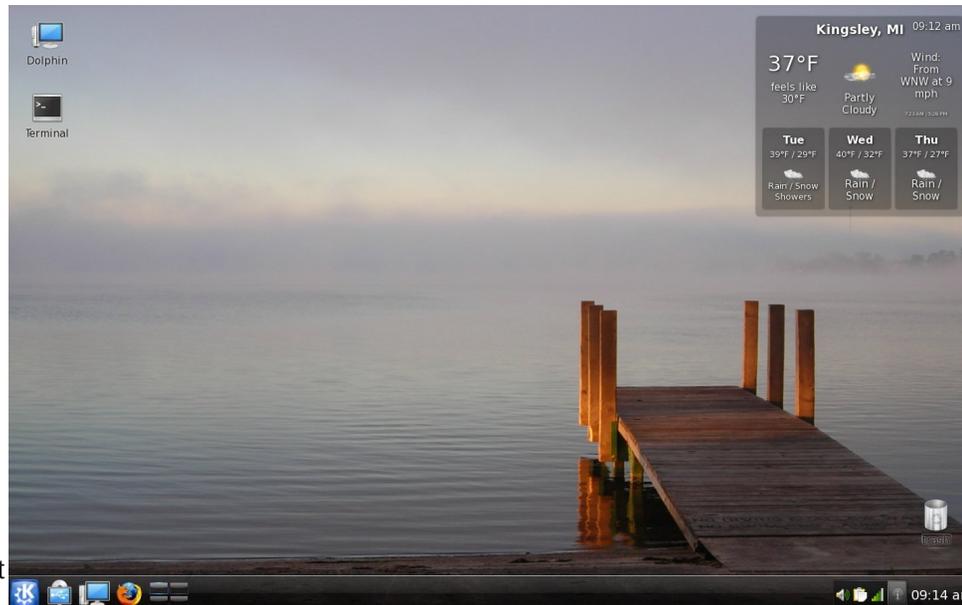
I went into the mentality of choice over what you did with your software, and how you had control over how it looked and worked.

We talked about the cooperation and communication with all of those involved around the globe, and that Linux wasn't about corporation. It's more about community and personal freedoms.

Then I wowed them with the bling. It's like the icing on the cake. Icing is all well and good, but you have to have substance underneath for it to taste good.

Finally I rebooted, took out the DVD, and showed it to them, so I thought I would share. Why did I go through all of this? Because I do have a relationship with those behind the wonderful distro I use, and I wanted to say thanks in my own little way.

*Terry Brown has been a Linux user since 1998, starting with Mandrake 5.2. He's been a PCLinuxOS user since version 0.92, and a user of Texstar's RPMs back in the Mandrake Linux days. He currently resides in Kingsley, Michigan, USA.*



# Computer Languages A to Z: Fortran

by Gary L. Ratliff Sr. (eronstuc)

Fortran was the first high level language created. It was established in 1954 by a team at IBM, led by John Backus. This gentleman later worked on ALGOL and created another language called FP. He received the Turing Award for his major contributions to computing throughout his life.

Fortran was widely accepted and is currently the language of choice for scientific computing and engineering. Each company tried to improve the features offered, so that soon many differing versions of Fortran were offered. This made it very difficult to write code which was portable. Therefore, the language was standardized and the first standard for the language came to be known as Fortran66.

Fortran was also the first high level language I learned. The version I learned was FORTRAN IV in 1970, at what was then called Delta State College. Now at this time, computers filled entire rooms. The program was keyed into cardboard cards which could hold 80 characters. Each statement in the program occupied one card. The program would be assembled into a deck and then on top of this would be added a set of cards, which constituted the JCL (Job Control Language) for the computer.

The earliest version of FORTRAN had very rigid requirements. ONLY CAPITAL LETTERS COULD BE USED TO KEY IN THE PROGRAM. The non-alphabetic keys, which could be used in writing a program, were limited to just 13 characters. The Hollerith cards used to key in the program were divided into specific fields: Column 1 was for a comment and was indicated by entering an \* in this

column. Columns 1-5 were reserved for labels. Column 6 was reserved for a continuation marker, and the one we were encouraged to use was &. Columns 7-72 were for the text of the program statements; finally, columns 73-80 were for the card sequence number.

As time passed, and more versions of Fortran joined the standard, these strict rules were retained mostly so that the firms who had much invested in the software could still use their old programs. As computer techniques improved, these old features were regarded as archaic. In fact, when receiving his Turing Award, John Backus delivered an address which complained about the inefficiencies of the

“Von Neumann bottleneck.” This is that there is essentially one word flowing from the CPU to the memory (store) or from the store to the CPU at any one time.

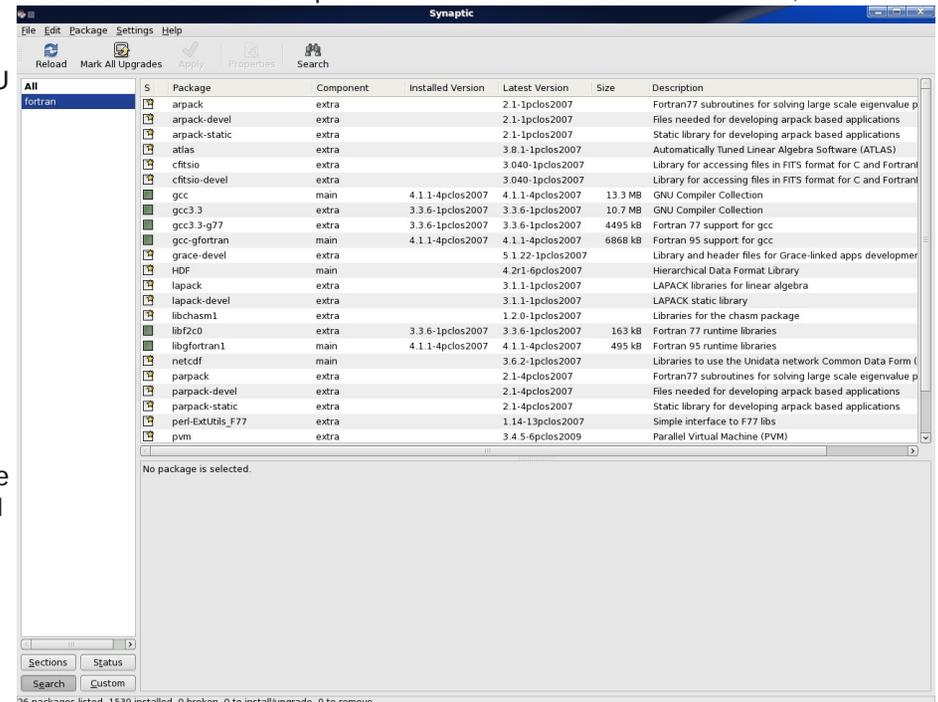
## How to obtain Fortran for your computer

As usual, either apt-get or the synaptic package manager may be used to install a FORTRAN compiler on your computer. In fact, there is more than one version of FORTRAN available. The GNU compiler collection has compilers for both Fortran77 and Fortran95.

Once you have opened Synaptic, perform a search for

fortran. And we will install both the Fortran 77 and the Fortran 95 compilers. Synaptic will inform you that it is going to install these six packages: gcc3.3, gcc3.3-cpp, gcc3.3-g77, libf2c0, gcc-gfortran, and libgfortran1. (If you followed the instructions in the language article about C/C++, you will already have a version of the GNU Compiler Collection on your computer). Unfortunately, the Fortran 77 in the repository uses an older version of the collection for its f77 compiler.

Having obtained the necessary compilers, the next goal would be to learn to use the FORTRAN computer language. For this purpose, we will perform a search for Fortran 77 Tutorials, and also

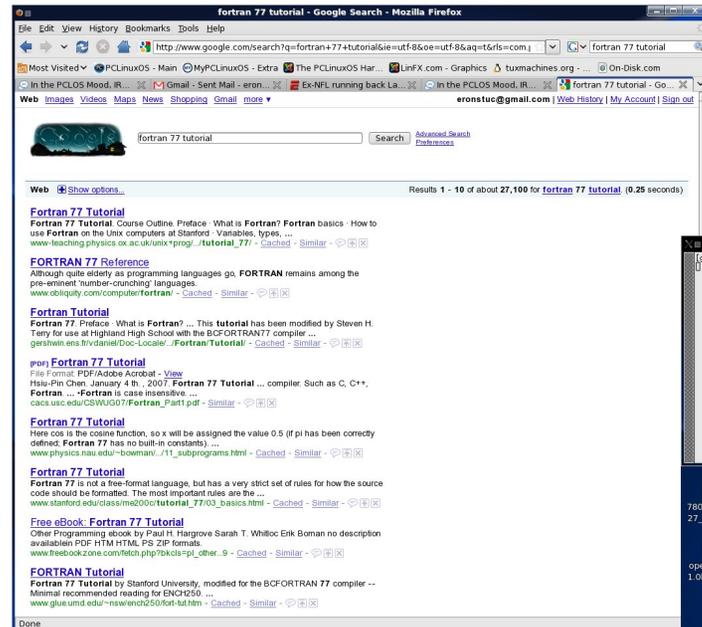


another search for Fortran 95 tutorials. Now just as C is a proper subset of C++, Fortran 77 is a proper subset of Fortran 95. Now the gcc identifies the language the source code is in by the file suffix: program.c is a C program while program.cpp is a C++ program; furthermore, program.f would be a Fortran 77 program while program.f95 would be one for the Fortran 95 language.

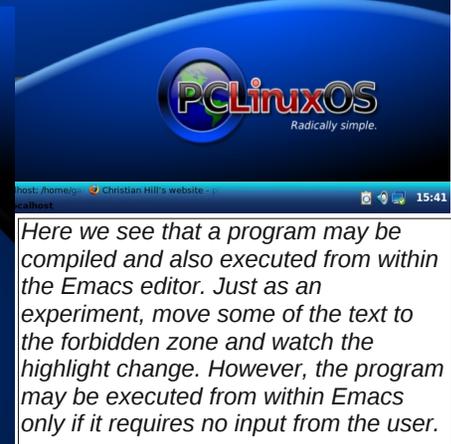
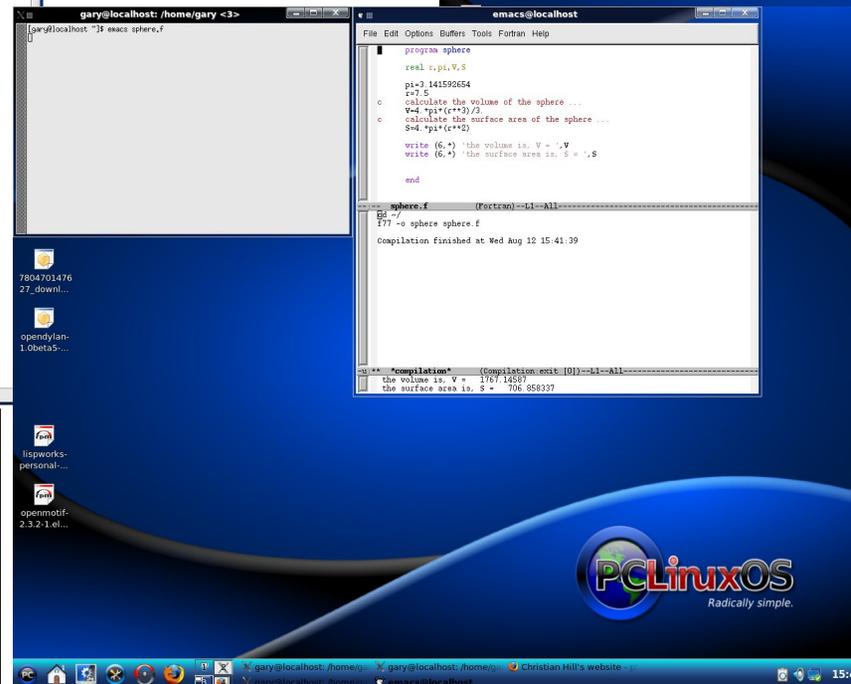
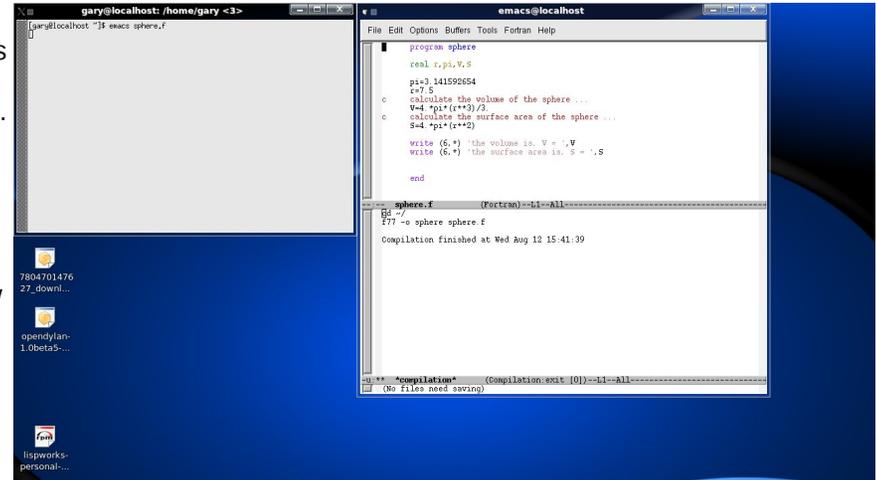
In the treatment of Elisp, we installed the Emacs text editor. This will also allow you to compile and run programs from within the editor. If you use xterm, open emacs with the command:

`$ emacs program.f`

You will see that the menu now contains a Fortran item. Once you have keyed in your program, you would select the Tools menu, and from there select compile. Then you would



Just the tip of the iceberg is shown by the first page of tutorials offered for Fortran 77. The one from Stanford University is very complete. Don't miss the tips about obtaining commercially written Fortran subroutines if your business needs some advanced engineering calculations. The tutorial in the obliquity.com has one section with a script to perform a speed test on how fast your computer really does math. Also, the repository offers some of these advanced Fortran packages. Look closely at just what a search on Fortran offers.



Here we see that a program may be compiled and also executed from within the Emacs editor. Just as an experiment, move some of the text to the forbidden zone and watch the highlight change. However, the program may be executed from within Emacs only if it requires no input from the user.

back over the make -k command this will provide and enter the command to compile the source file.

`$ f77 -o program program.f`

Here, the program will either report that the program compiled or it will show you in which line there was discovered a syntax or other type of error. If the program contains no request for user input, you would also be able to run this program from within Emacs by using the Tools menu and selecting shell. In this example the shell command to use would be:

```
$ ./program
```

If you forget that your program contains any input requests, they you will receive an error message. However, the program was compiled correctly; it will just need to be launched from a terminal program such as xterm using the same command. In a similar fashion, your Fortran 95 programs may be created in emacs by issuing from a terminal the command:

```
$ emacs program.f95
```

However, it might be better to use the extension f90. As I noted, the .f extension will produce a menu for Fortran and the .f90 extension will produce an item for f90. Now when these are displayed, the text of the source code will be highlighted. Now this highlighting will make it easier to discover errors in the program. For some reason, the version of emacs does not have a tab when the extension f95 is used. Nor does it highlight the source code.

### Odd features and restrictions of the Fortran compilers

Fortran 77 is a fixed form language, and Fortran95 is a free form language. Therefore, if you have the first line "program testz" beginning in column 3 instead of column 7, an attempt to compile using the f77 compiler would fail, while the command: gfortran -o

testz testz.f would compile. The Fortran 77 compiler does relax some of the rigid restrictions required by strict adherence to the Fortran 77 standard. You can use lower case letters, and you can use a do while loop instead of the only recognized do loop of FORTRAN 77.

The Fortran 77 compiler may be started by either f77 or g77, and the Fortran 95 compiler may be started with either f95 or gfortran. This mystery is solved by looking in /usr/bin. Here you will find that f77 and g77 are symbolic links to /etc/alternatives/f77 and /etc/alternatives/g77. Once there, it is discovered that both point to: /usr/bin/g77-3.3.6. In a similar manner, f95 and gfortran are links to /etc/alternatives/f95 and gfortran, which ultimately point to /usr/bin/gfortran-4.1.1.

Next, both these compilers first translate the fortran source into C, and then compile the C language translation. This may be verified by compiling a source program using the -g flag to enable debugging. Then, when trying to list the code in the gdb program the line will read init c. The clue to this is that the fortran 77 support library is named libf2c0 and f2c is the name of the program which translates fortran source code into C. At this time, the repositories do not offer the f2c program, However, I had it installed in another of my Linux partitions and show an example.

The technique of cutting a section of code and then pasting this into the emacs editor may be used in perusing the tutorials. All that is required is to write a driver for the routine and the program will compile. This will be illustrated in the pictures. Now some of the tutorial are more useful than others. The Fortran 77 Tutorial from Stanford University is a particularly good one. Also, if you open many of the other selected tutorials you will learn that this tutorial seems to serve as a model for many of the others.

The screenshot shows a web browser window titled "Fortran 77 Tutorial - Mozilla Firefox". The address bar shows the URL: [http://www.teaching.physics.ox.ac.uk/unix+prog/hargrove/tutorial\\_77/08\\_if.html](http://www.teaching.physics.ox.ac.uk/unix+prog/hargrove/tutorial_77/08_if.html). The page content includes:

- An introduction to the `if` statement: "This has to be written on one line. This example finds the absolute value of x: `if (x .LT. 0) x = -x`".
- A note: "If more than one statement should be executed inside the `if`, then the following syntax should be used: `if (logical expression) then statements endif`".
- The general form of the `if` statement: `if (logical expression) then statements elseif (logical expression) then statements : else statements endif`.
- A note on execution flow: "The execution flow is from top to bottom. The conditional expressions are evaluated in sequence until one is found to be true. Then the associated statements are executed and the control resumes after the `endif`."
- A section on "Nested if statements" with an example: `if (x .GT. 0) then if (x .GE. y) then write(*,*) 'x is positive and x >= y' else write(*,*) 'x is positive but x < y' endif elseif (x .LT. 0) then write(*,*) 'x is negative' else write(*,*) 'x is zero' endif`.
- A warning: "You should avoid nesting many levels of `if` statements since things get hard to follow."
- Copyright information: "Copyright © 1995-7 by Stanford University. All rights reserved."
- Links: "[[ME-390 Home Page](#)] [[Fortran 77 Tutorial Home](#)]" and "[hargrove@sccm.Stanford.EDU](mailto:hargrove@sccm.Stanford.EDU)".

Here, the ability to copy code from a tutorial, and then paste it into the Emacs editor is shown. This is showing a nested if construction. This is from the Fortran 77 Tutorial from Stanford University. Their copyright states that it may be used for academic purpose. All that need be done is to write a driver for the routine.

The Fortran 95 tutorials assume that one is already familiar with Fortran 77. So, if you are interested in learning this language it would be good to concentrate on that language, before delving into Fortran 95. The tutorial on Fortran 90 for the Fortran 77 programmer gives the features which are altered.

The Fortran 77 programs are very much like those same programs I keyed into Hollerith cards back in the 70's. Yes, several courses in working on my Masters required computer programming. Just a little joke on me. One night the schools computers were down. So a graduate student who worked at Baxter

Labs offered to let the class come over and run their class assignments on their terminal, which was connected to the mainframe in Cincinnati. Now after a while, I learned that my assignment had been stopped for using excessive computer time. I received the printout, which contained page after page of neatly formatted zeros!! On debugging the program, the massive printout was found to have been caused by a misplaced comma!!

```

example.f2c [modified] - KWrite
File Edit View Bookmarks Tools Settings Help
c234567890123456789012345678901234567890
c
1 2 3 4
c These are coulnn markers
program test
real x,y,z
read(*,*) x,y
z = x * y
write(*,*)x,y,z
stop
end

/* test.f -- translated by f2c (version 20061008). */
#include "f2c.h"

/* Table of constant values */
static integer c__4 = 4;
static integer c__1 = 1;

/* 234567890123456789012345678901234567890 */
/* 1 2 3 4 */
/* These are coulnn markers */
/* Main program */ int MAIN_(void)
{
/* Builtin functions */
integer s_rslc(cilist *), do_lio(integer *, integer *, char *, ftnlen),
e_rslc(void), s_wslc(cilist *), e_wslc(void);
/* Subroutine */ int s_stop(char *, ftnlen);

/* Local variables */
static real x, y, z;

/* Fortran I/O blocks */
static cilist io__1 = { 0, 5, 0, 0, 0 };
static cilist io__5 = { 0, 6, 0, 0, 0 };

s_rslc(&io__1);
do_lio(&c__4, &c__1, (char *)&x, (ftnlen)sizeof(real));
do_lio(&c__4, &c__1, (char *)&y, (ftnlen)sizeof(real));
e_rslc();
z = x * y;
s_wslc(&io__5);
do_lio(&c__4, &c__1, (char *)&x, (ftnlen)sizeof(real));
do_lio(&c__4, &c__1, (char *)&y, (ftnlen)sizeof(real));
do_lio(&c__4, &c__1, (char *)&z, (ftnlen)sizeof(real));
e_wslc();
s_stop("", (ftnlen)0);
return 0;
} /* MAIN_ */

/* Main program alias */ int test () { MAIN_ (); return 0; }

```

I mentioned that both the compilers translate the Fortran code into C. The repository does not currently have the application f2c. So, in the partition for Dreamlinux, I noted that this has f2c as well as ratfor and other gcc compilers listed. I created a very simple test program and then ran the f2c program on it. Then the resulting test.f and test.c were combined into one file using: cat test.f test.c > example.f2c. Now, back in PCLinuxOS, I entered the Dreamlinux partition and took a snapshot of it. Essentially, this shows how the compilers actually compile Fortran programs.



**International Community PCLinuxOS Sites**

**PCLinuxOS.nl** NETHERLANDS

**PCLinuxOS** Daykonun mekani TURKEY

**PC Linux OS** DENMARK

**PCLinuxOS** CZECHOSLOVAKIA *siła jednoduchosti*

**PCLinuxOS.it** ITALY

**PCLinuxOS** Polskie Centrum POLAND

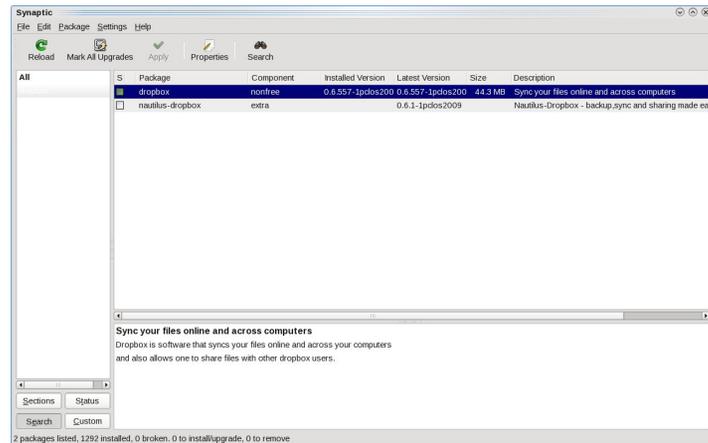
# Dropbox: File Synchronization Made Simple

by Andrew Strick (Stricktoo)

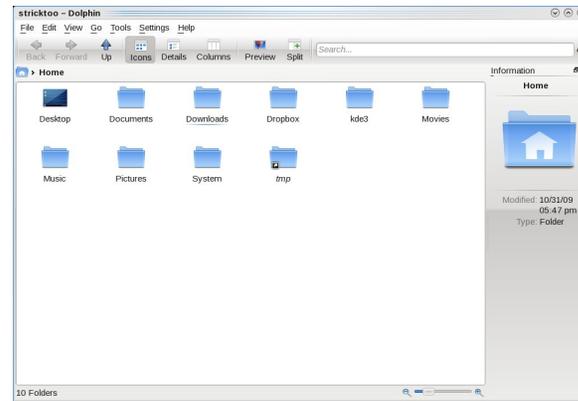
I'm one of those people who is terrible about making routine backups of my most important files. I know that I should, and I fully mean to do so - tomorrow. Fortunately for me, there's Dropbox.

Dropbox is a small synchronizing program for Linux, Mac and Windows. By default, Dropbox gives you 2 GB of storage, for free. Since the only files that I truly need to backup on a daily - sometimes hourly - basis are my notes and papers from school, I find that this is more than enough for me. If you need more space, however, Dropbox also offers paying options: 50 GB for \$9.99/month or 100 GB for \$19.99/month.

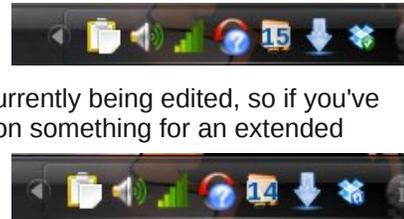
To install Dropbox, open Synaptic and search for "dropbox," then select the first item in the list. When Dropbox is first run, you will be prompted to create an account. This will enable you to synchronize your files to any computer that has Dropbox installed, as well as access Dropbox's online portal.



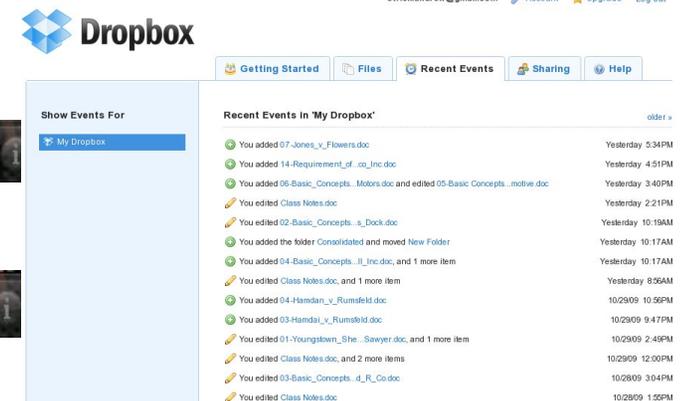
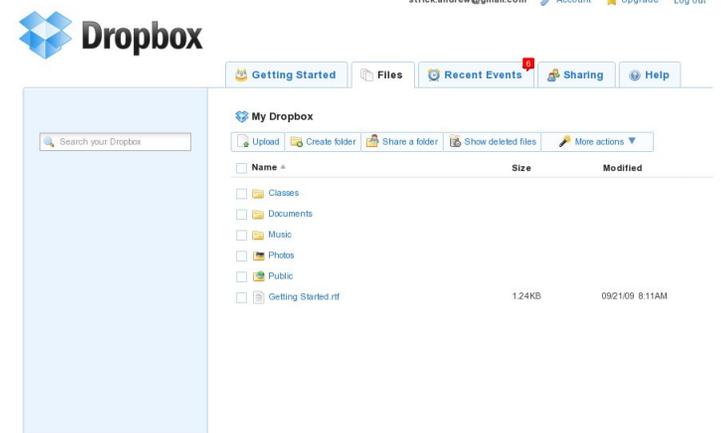
Dropbox will then create a folder in your Home directory. Any files placed in this folder will be automatically synchronized to the Dropbox server and any other computer with Dropbox installed (provided that system is logged into Dropbox with your credentials, of course).



Dropbox displays the current sync status of your files via a small icon in the system tray. A green circle surmounted with a check-mark means that your files are synchronized. A spinning blue circle means that Dropbox is updating your files. Keep in mind that Dropbox can't synchronize files that are currently being edited, so if you've been working on something for an extended period of time it might be a good idea to save and close it for a minute or so, to allow Dropbox can work its magic.



If you're at a computer that doesn't have Dropbox installed, you can still access your files through the online portal. To do so, simply go to the Dropbox website and login. The portal also gives you a list of recently changed or added files, and allows you to track changes to preexisting files.



The final cool feature of Dropbox (that I'll mention) is its ability to share files with other Dropbox users, either from the web portal or directly from the Dropbox folder on your system. Unfortunately, I haven't figured out how to get the latter method to work under KDE4, but the web portal still works fine. Simply navigate to the "Sharing" tab, create a new shared folder and invite collaborators.

**Share a Folder**

Dropbox shared folders let you share or collaborate on a set of files. When someone joins a shared folder, the folder appears inside their Dropbox, and syncs to their computers automatically.

I'd like to create and share a new folder

PCLOADLETTER

I'd like to share an existing folder

Next Cancel

**Share "PCLOADLETTER" with others**

Invite collaborators to this folder

pgibbons@initech.com

(Optional) Send a personal message with your invitation

Please try to fix this. Mmmkay, great. Thanks a bunch.

Share folder Cancel

## Screenshot Showcase



Posted by coffetime, on November 18, 2009, running KDE4.

# PCLinuxOS & Slackware: The Odd Couple

Patrick G Horneker

## Introduction

This past month, I had serious issues with my Internet connection, namely of the "cutting out in the middle of a PCLinuxOS update" kind. It was such an event that caused me to reconfigure my Toshiba laptop. During a regular update of PCLinuxOS, my connection was interrupted, causing the installation to be trashed to the point where KDE4 was removed from the Synaptic repository! As a result, I must go to public wi-fi spots to update PCLinuxOS as I can trust that connection.

Fortunately, I regularly backup my data, so at least that was not lost. Also, this gave me a chance to try something new.

Also, there are plenty of places to get Wi-Fi in Porter and LaPorte Counties (in Indiana). While I like PCLinuxOS for its simplicity, there is an issue with some public Wi-Fi spots.

Barnes and Noble (now with Free AT&T Wi-Fi), McDonald's (Boingo) and Panera Bread all serve up capture pages that are supposed to load when I launch Firefox, allowing for login to the wi-fi network. Unfortunately, Firefox 3.5 does not automatically load the capture pages after launch. I had to launch Seamonkey to be able to login to the public wi-fi spots.

## The Reconfiguration

As long as I was going to have to reconfigure my laptop, I reassessed what should go on the laptop. While I may like PCLinuxOS, and it is a great system, I also like Slackware. Slackware is one of the oldest distributions (if not the oldest) in the Linux world.

What would be a better idea than to run PCLinuxOS in VirtualBox with 768MB of memory allocated and 32GB of disk space. This way, I get the best of both worlds, and will also be able to support other distributions (if I need to) through virtual machines.

## Why Slackware?

You can learn about Linux by using PCLinuxOS. It is among the easiest to configure. However, to truly learn about Linux and UNIX in general, you learn Linux by working with Slackware. Here, most everything is manually configured so you get a real feel for how Linux really works.

Both PCLinuxOS and Slackware allow you to compile software from source code. Package management in Slackware is different from PCLinuxOS.

Slackware packages contain not only the binaries, libraries and their configuration files, but also the development headers used when compiling software from source code. To have the equivalent in PCLinuxOS means you not only have to download the packages you want, but also separate RPM

packages that contain the development headers. (These are the packages that are suffixed with -devel in the package name.)

While PCLinuxOS may handle WiFi connections through drakroam and drakconnect, Slackware uses wicd for WiFi connectivity. wicd is (in my opinion) a cross between Network Manager and drakroam, and is a bit faster than PCLinuxOS when it comes to connecting to the Internet.

This could have resulted in a dilemma, but then it occurred to me, why choose between PCLinuxOS and Slackware, when I can have both on the same laptop, and running at the same time.

PCLinuxOS does have its strong points, such as the simplicity of administration, and the ability to configure multiple network connections, and a fast startup time, and out of the box support for more printers and wi-fi adapters than some distributions. These points are all the more reason to use PCLinuxOS.

Slackware has a strong point of being able to run on older machines, some of which may or may not be able to run PCLinuxOS. Also, on newer laptops such as my Toshiba L305, Slackware is very fast!!!

## How It Works

VirtualBox allows for sharing of the network connection between the guest and host OS. This allows me to worry about getting Wi-Fi to work on Slackware, and once the connection is made (and after logging in), that connection is made available to

PCLinuxOS without having to configure the Wi-Fi connection there.

After having installed Guest Additions to PCLinuxOS, I am able to share my home directory between PCLinuxOS and Slackware.

Virtualbox is not a part of Slackware, and that is a good thing, as I was able to download the latest version, and be able to share the WiFi connection and USB devices.

To share a folder within PCLinuxOS (or another Linux distribution) as a guest OS, you will need to select Shared Folders from the Devices menu.

There are two parameters you will need to supply to the dialog. The first is the directory to be shared on the system that VirtualBox is running on. (In VirtualBox, this is the directory on the Host OS.) In this example, I am sharing the home directory (/home/patrick) on Slackware with the Guest OS, which is PCLinuxOS.

The second parameter you need to supply is the name of the share. This is what you supply to the mount command when you mount the shared directory with PCLinuxOS.

Here, I have named the share slackshare.

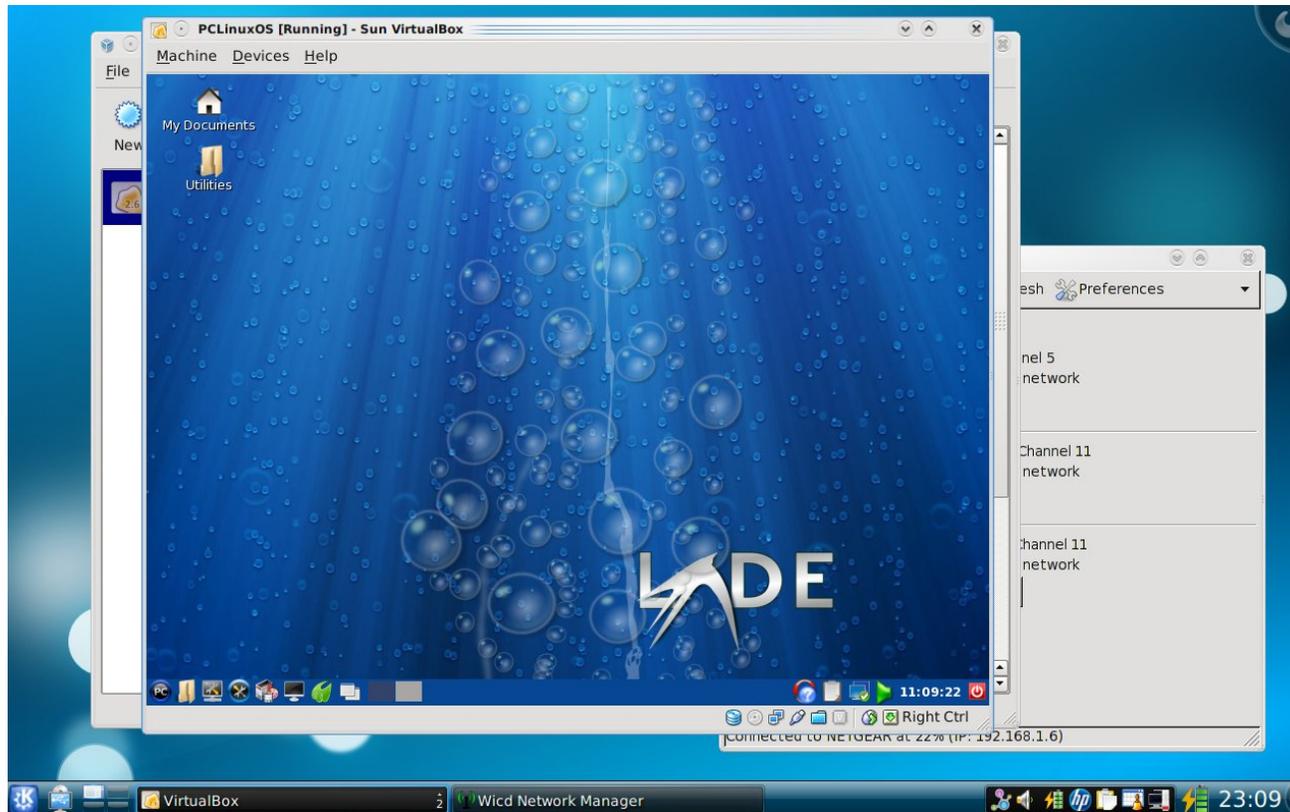
Close the Shared Folders dialog to make the share active.

Since the latest version of PCLinuxOS has the Guest Additions already installed, all you need to do is create the mount point and then mount the share. You need to login as root to mount the share. The mount command will change the owner of the mount point to root. You will then need to chown the mount point so you can access the files on your shared directory.

The screenshot here shows you what commands to issue to mount the shared folder.

Once mounted, you can then explore the directory on Slackware as if it were part of the PCLinuxOS system.

USB device access requires some configuration of the virtual machine. While not running the Guest OS, you can open the settings and configure the USB shares. On my laptop, I have the USB 2.0 controller shared to start. VirtualBox allows you to configure empty USB share filters. These filters allow any connected USB device to be shared between the Host OS and the Guest OS. I have one empty filter configured to allow for my printers to be shared between Slackware and PCLinuxOS.



```

[patrick@localhost ~]$ su
Password:
[root@localhost patrick]# mount -t vboxsf slackshare /home/patrick/shared
[root@localhost patrick]# ls
Desktop/ shared/ tmp/
[root@localhost patrick]# ls -l
total 12
drwxr-xr-x 3 patrick patrick 4096 Nov 18 20:21 Desktop/
drwx----- 1 root root 4096 Nov 19 2009 shared/
drwx----- 2 patrick patrick 4096 Nov 18 20:21 tmp/
[root@localhost patrick]# chown patrick:patrick shared
[root@localhost patrick]# exit
exit
[patrick@localhost ~]$

```

## Why Virtualbox?

VirtualBox is one of the best open source software packages available for implementation of virtual machines. It is also the best way to run multiple Linux distributions (or other operating systems) at the same time, provided of course that you have sufficient system memory to do so. I am able to run Slackware and PCLinuxOS on my laptop as the laptop has 2GB of system memory. Of course, it also helps to have a Dual Core processor or something similar as Slackware and PCLinuxOS see Intel's Duo Core processor as two 32-bit processors. With this implementation, one processor runs Slackware and the other runs PCLinuxOS. Not bad for a \$400 USD laptop.

Sure, I could have used QEMU, but from my experience, QEMU is best suited for legacy operating systems such as FreeDOS (and its commercial implementations such as IBM PC-DOS), and DOS-based versions of Windows such as Windows 95. While the latest version of QEMU supports some USB functionality, audio support is still limited to Esoniq ESS1870, Sound Blaster 16, and Adlib. The video support is limited to legacy Cirrus support and standard VGA. (You can see why I prefer VirtualBox for Linux.) I have FreeDOS installed on a QEMU machine.



# Beginner's Guide to LaTeX on PCLinuxOS: References

by David Pardue (kalwisti)

*Editor's Note: Last month, David presented you with Part One of the Absolute Beginner's Guide to LaTeX on PCLinuxOS. This month, he provides a list of resources, in different categories, that you might find helpful in continuing to build on the foundation he laid last month. – Paul Arnote, PCLinuxOS Magazine Chief Editor.*

## Suggested Reading

If you are interested in further exploring LaTeX, this mini-bibliography contains approximately 20 resources that were helpful to me as I began learning it; I hope you will find some of them useful, too. The bibliography is organized as follows: Section 1. Overviews / General Introductions; 2. Tutorials / Manuals; 3. Commercially Published Books; 4. Reference; 5. Internet Resources; and 6. Miscellaneous / Curiosity.

We are fortunate that there is a wealth of excellent material on LaTeX, both on the Web and in published books. TeX gurus (known as “TeXperts”) not only enjoy using LaTeX, but also writing about it. All of the works have their virtues, but if I were forced to pare the list down to the barest bones, the ones I have relied on most are: Oetiker's *The Not So Short Introduction to LaTeX* (2008), Griffiths' and Higham's book *Learning LaTeX* (1997), Flynn's *Formatting Information* (2005) and the online *PracTeX Journal*.

## 1. Overviews / General Introductions

Cottrell, Allin. "Word Processors: Stupid and Inefficient." <http://ricardo.ecn.wfu.edu/cottrell/wp.html>

Online polemic in favor of TeX. The author presents a strong case for preparing ASCII files with a text editor and typesetting them with LaTeX rather than a WYSIWYG word processor.

Flom, Peter et al. "What Is TeX?" Comp. David Walden. *PracTeX Journal* 2005.3. <http://www.tug.org/pracjourn/2005-3/walden-whatis/>

A collection of one-page descriptions of LaTeX, written by 7 contributors for a nontechnical audience.

Flynn, Peter. "The LaTeX Brochure." <http://silmaril.ie/downloads/>

A promotional four-page brochure that provides a quick overview of LaTeX.

## 2. Tutorials / Manuals

Oetiker, Tobias. *The Not So Short Introduction to LaTeX*, or, *LaTeX 2e in 141 Minutes*. Ver. 4.26. 25 Sept. 2008. <http://bit.ly/DtFwX>

An introduction to LaTeX which has become a classic. The numerous translations attest to its popularity; Oetiker's guide is also available in Finnish, French, German, Italian, Japanese, Korean,

Mongolian (!), Persian, Polish, Portuguese (and Brazilian Portuguese), Russian, Slovak, Slovenian, Spanish and Ukrainian. Any of these can be downloaded from CTAN's website: <http://www.ctan.org/tex-archive/info/lshort>.

O'Malley, Kevin. "LaTeX: It's Not Just for Academia." (Online article)

Pt. 1. 3 Feb. 2004. <http://bit.ly/4jHXfl>  
Pt. 2. 5 Mar. 2004. <http://bit.ly/kEdoz>

A quick overview of LaTeX which also shows how it can be used to accomplish some common writing tasks. Since O'Malley is a Mac developer, a portion of Part 1 covers the various versions of LaTeX available for Mac OS X at the time—this can be skipped.

Roberts, Andrew. "Getting to Grips with LaTeX." [2004?] <http://www.andy-roberts.net/misc/latex/index.html>

A series of 12 brief online tutorials written by a doctoral student in computer science. Topics covered include document structure, tables, bibliographies and importing images.

Flynn, Peter. *Formatting Information: A Beginner's Introduction to Typesetting with LaTeX*. Ver. 3.6. Mar. 2005. <http://silmaril.ie/downloads/>

Good resource, with very current information. However, it is slightly more technical than some of the other beginner's guides. (Flynn has the advantage of also having worked as a real printer and pressman).

Talbot, Nicola. LaTeX for Complete Novices. Ver. 1.3. 15 Jan. 2008.  
<http://theoval.cmp.uea.ac.uk/nlct/latex/novices/>

A useful, well-organized and thorough guide. Talbot is a mathematician and computer scientist who has taught LaTeX courses at the university level. In addition, she is the author of several add-on LaTeX packages.

The PracTeX Journal. <http://www.tug.org/pracjourn/>

Has some excellent articles (downloadable free of charge) which target new LaTeX users.

“LaTeX.” Wikibooks.  
<http://en.wikibooks.org/wiki/LaTeX>

If you like an online Wiki-type format, this one has thorough coverage of the basics and some intermediate topics. It includes information from Oetiker's guide as well as excerpts from some of Flynn's publications. The Wiki can also be downloaded as a PDF file.

### 3. Commercially Published Books

(Before spending any money for these titles, try looking for them at your local public or college / university library, so you can evaluate them. LaTeX books are for a small, specialized audience and as a result, tend to be a bit pricey).

Griffiths, David and Desmond Higham. Learning LaTeX. Philadelphia: SIAM, 1997. 84 p. \$26 US (retail). ISBN 0898713838. <http://bit.ly/zZUxw>

Very nice—concise, accessible and with humorous examples. Also shows LaTeX source code and the typeset output placed side by side. This is the first LaTeX book I purchased. If you can only afford one printed book to begin with, this is the one I would recommend. Covers approximately 90% of the commands you will use in everyday work, and includes chapters on typesetting math / equations.

Lamport, Leslie. LaTeX: A Document Preparation System: User's Guide and Reference Manual. 2nd ed. Boston: Addison-Wesley, 1994. 272 p. \$50 US (retail). ISBN 0201529831. <http://bit.ly/7e66r>

Generally well written and well organized, Lamport also incorporates some humorous examples (often involving gnus and occasionally gnats). In a 2001 interview, Lamport commented that he probably made more money by giving the LaTeX software away and selling the book than he would have by trying to sell the software.

Grätzer, George. First Steps in LaTeX. Boston: Birkhäuser; New York: Springer-Verlag, 1999. \$44.95 (retail). ISBN 0817641327

Primarily has a math focus to help you quickly learn how to typeset your first article containing mathematical formulas. Also introduces AMS-LaTeX, a special set of LaTeX packages for math.



Kopka, Helmut and Patrick W. Daly. Guide to LaTeX. 4th ed. Boston: Addison-Wesley, 2003. 624 p. \$60 US (retail). ISBN 0321173856.  
<http://bit.ly/De1UA>

I would recommend this as more of an “intermediate” title. Nicely done and authoritative. This is a better choice than Mittelbach and Goossens' The LaTeX Companion (2nd ed., 2004, \$69.99), which would be too overwhelming for novices—although it is the definitive guide for descriptions of LaTeX extension packages and LaTeX programming.

There are two other books in the Companion series geared towards intermediate users or above: Goossens' The LaTeX Graphics Companion (2nd ed., 2008, \$64.99) and his The LaTeX Web Companion: Integrating TeX, HTML and XML (1999, \$49.99). I can recommend the Graphics Companion,

which covers methods of embedding graphic objects in LaTeX documents and provides a synopsis of the various add-on packages available. However, the Web Companion can be skipped, as it has become increasingly outdated since its publication in 1999.

#### 4. Reference

Chang, Winston. "LaTeX Cheat Sheet." <http://bit.ly/P84wl>

A two-page quick reference summarizing basic LaTeX commands. Handy to print out and keep beside your desk.

Pakin, Scott. "The Comprehensive LaTeX Symbol List." 3 Jan. 2008. <http://bit.ly/2CTEh2>

An organized list of over 4900 symbols available to LaTeX users. If you need to know how to produce a Euro symbol, a box with a checkmark, a double dagger or a small telephone icon, you will find it here.

#### 5. Internet Resources

Usenet newsgroup: comp.text.tex

LaTeX Community Forum. <http://www.latex-community.org> (similar to a Linux user forum)

The TeX Showcase. Ed. Gerben Wierda. <http://www.tug.org/texshowcase/>

Stunning examples of what TeXperts can typeset with TeX and its related programs. Includes graphics

(an ornamental CD cover, beer bottle label, baseball scorecard), math, languages of the world (Biblical Hebrew, Arabic, Chinese, Hindi, Tibetan) and general typesetting.

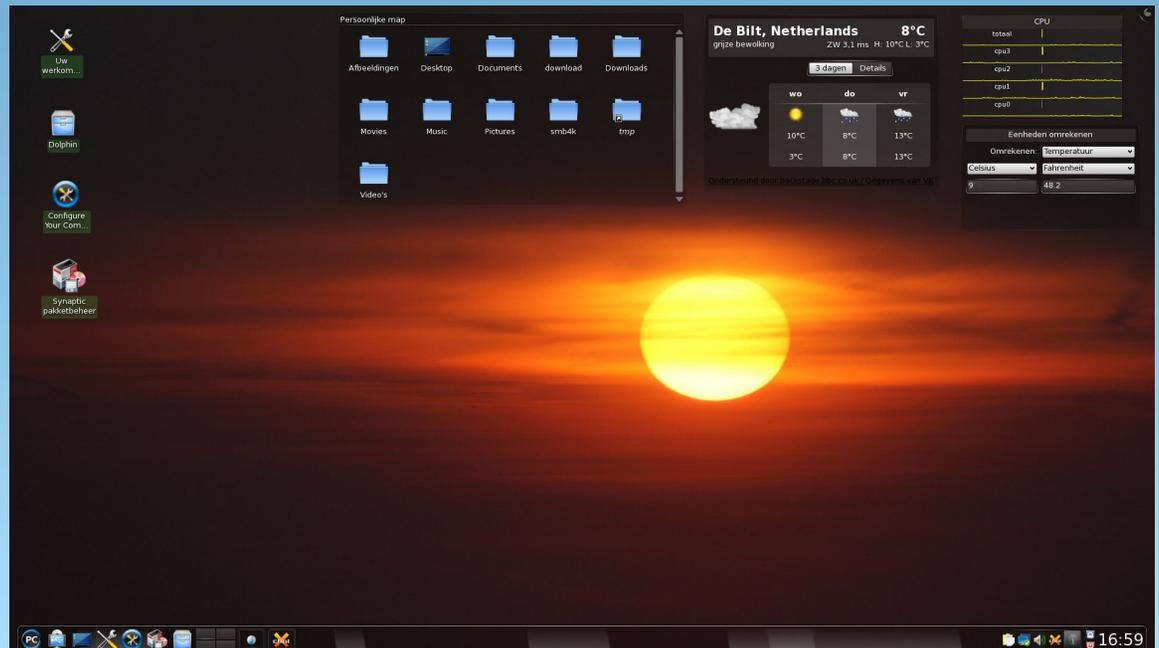
#### 6. Miscellaneous / Curiosity

TUG (TeX Users Group) Interview Corner. <http://www.tug.org/interviews/>

Has brief interviews with a variety of people with TeX and LaTeX. (Also has interesting information about their lives and careers independent of TeX). This material has been published by TUG in book form: People: Interviews from the World of TeX and LaTeX. Edited by Berry and David Walden, 2009, \$36.00.

The PCLi

## Screenshot Showcase



Posted by JohnW, November 11, 2009, running KDE4.

# Wireless USB: The Next Frontier?

by Paul Arnote (parnote)

Let's see a show of hands: who among you thinks I'm talking about 802.11 b/g/n networking adapters when I mention Wireless USB? OK ... you can put your hands down. You are incorrect. What I'm referring to when I say Wireless USB is the next generation of USB connectivity with a wide assortment of computing peripherals.

Development has been underway since the original Wireless USB (nicknamed WUSB) specification came out in 2005. Amazingly, not too much has been heard about it since then (or even then), its development is somewhat behind schedule, and it has been somewhat overshadowed by the much touted USB 3.0 specification that promises to offer up to 5.0 Gbps throughput and improved power efficiency.



Wireless USB is only a seemingly natural extension of the original USB ideology, which allows users to connect with up to 127 devices, via the USB Hub Controller, by using wireless technology (via the Ultra-Wide Band, or UWB, radio platform) to

wirelessly provide that USB connection with printers, cameras, scanners, mice, keyboards, external hard drives, etc. – virtually anything you would connect by way of a wired USB connection – without the rat's nest of wires that tend to clog up the rear of many users' computers. Plans are to also extend WUSB to include many common consumer electronics products, including TVs, optical disc players, music players, camcorders, mobile phones, and many other items that require a high data throughput.

In fact, WUSB devices will look like, and act like, those familiar devices that you use with a wired USB connection, except without the wires. WUSB is designed to offer up to 480 Mbps throughput with devices that are within 3 meters (10 feet) of the computer, and up to speeds of 110 Mbps with devices that are within 10 meters (approximately 33 feet). All of this is accomplished via a small, built-in antenna that is 27 mm long and only 3 mm thick.

Several companies (Agere Systems, Hewlett-Packard, Intel, Microsoft, NEC, Philips Semiconductors, and Samsung Electronics, among others) banded together to form the Wireless USB Promoter Group in 2004. And, despite the delays and being overshadowed by the much-hyped SuperSpeed USB 3.0, the WUSB standard is scalable to multi-Mbps data transmission. Some of the other hardware vendors that have signed on to support WUSB reads like a veritable who's-who in the computing world and consumer electronics. They include: ATI, nVidia, Belkin, AMD, Creative, Foxconn, Fujitsu, LG, Iomega, K-Micro, Kodak, Lexmark, Logitech, Nokia, Oki, Plextor, Sony, SanDisk, TDK, Tektronics, Texas Instruments, Epson, Buffalo, Asics, and Toshiba – among many

others. There are over 100 companies that have signed on to support WUSB.

## Security

The issue of data security is addressed in the standard, and is designed to be relatively transparent to the end user. Security between the host and device adapters is accomplished one of three ways. The first way sets up the security between the host and the device via a one time cable connection between them. Simply plug in the cable between the host and the device, and they learn about one another and share a secret key. After that one time connection, the devices may then communicate wirelessly. The second way is by sharing a private, encrypted numeric key that the end user must acknowledge. The third way is by way of what's called "Near Field Communication," often referred to as NFC. Similar to RFID tags that are used in shipping containers and access badges that allow some workers access to restricted areas (like what we use at the hospital where I work), the devices use a very low-powered radio frequency to communicate with one another over very short distances, within the range of 3 to 10 cm (1 to 4 inches). The low power connections make it virtually impossible for an active attack to occur.

## Power Consumption

WUSB also addresses power consumption. It is designed, from the ground up, to have exceptionally modest power needs. This will be good news for netbook and notebook users who may be running on battery power, since it won't have a significant

impact on battery life. The devices require only 130-160 mWatts of power to transmit and receive data. By using Orthogonal Frequency Division Multiplexing (OFDM) modulation, or Multiband OFDM, (the same modulation used by WiFi), coupled with the UWB radio frequencies used, WUSB uses only about one-thousandth of the power of WiFi. In all fairness, WUSB has a lot less range than WiFi, so the power savings make sense.

Another thing that helps save power is that the host and device adapters go to "sleep" after a period of time when they are not being used to transmit data. The host adapter "wakes up" when it is called, and the device adapter "wakes up" when it receives an acknowledgment from the host adapter that it is being communicated with. In this manner, the adapters are not continually broadcasting, thus saving power, a precious commodity when you are running off of smallish batteries with finite amounts of power.

### Continuity, Legacy, and Coexistence

WUSB is designed to take advantage of the over 2 billion USB devices that are already out there, and to coexist without conflict with those legacy devices. Backward compatibility is built in, so that applications designed to work with USB will also be able to work, seamlessly, with WUSB devices. It is also designed to coexist, peaceably, with other wireless technologies, such as WiFi, Bluetooth, Wireless 1394, and WiNet. Since WUSB is built adhering to the current USB standards, consumers and end users can expect

that seamless integration of WUSB devices with their current cache of USB devices. Just as with the current USB standard, WUSB uses the familiar "hub-n-spoke" design, and is able to address up to 127 USB devices connected to the single host.

### Where's Linux in the picture?

A decade ago, when USB burst upon the scene, Linux old-timers may remember how slow Linux was to adopt the USB standard. But that was then. Today, the scene is likely to be completely different, and Linux stands to be one of the first operating systems to support and adopt any new USB standards that come along – just as Linux is expected to be one of the first to support SuperSpeed USB 3.0.

But, a decade ago, Linux did not have as broad of a user base as it does now. And, among hardware vendors, Linux is becoming the operating system of choice in which to write device drivers. The advantage is that Linux drivers won't have to be developed, since they will already exist.

The new descriptors, requests, and bitfields that will be associated with WUSB have already been rolled into the Linux kernel, and have been there since kernel version 2.6.13. Still, there's work to be done, either via device drivers or the kernel itself, to address the variable transfer rates, authentication, and packet sizes.



### So, Where is it?

There has been some delay in rolling WUSB out to consumers. The initial goal was to have WUSB out by late 2006 and 2007. But, for some unknown reason, that did not happen. Finally, believe it or not, some WUSB devices have already started to filter out to the marketplace. The wireless USB page on the [USB-IF \(USB Implementer's Forum\) lists 120 WUSB products](#) that have already started to hit consumer shelves. As is usual with most new technologies, you will pay a premium price for early adoption of WUSB. The current crop of WUSB devices are quite pricey. It is expected, however, as WUSB becomes more and more prevalent in the marketplace, that prices will moderate and fall to price levels similar to those of the current crop of wired USB devices. For example, you can take a gander at some of the WUSB devices offered by "Cables To Go," a cable retailer, at this web site: <http://search.cablestogo.com/?N=0&Ntt=wireless+usb>. You can see the full list of WUSB products that are available by going to the [USB-IF Products Page](#).

### Conclusion

WUSB holds the promise of making USB devices easier to use, and eliminating the rat's nest of wires that snake behind our computer desks. And, it will do this without compromising the security of data. Since the WUSB standard is scalable to be able to take advantage of future speed increases that may come down the USB pipeline – e.g., SuperSpeed USB 3.0 – WUSB stands a chance of being around for quite some time to come, once it arrives.

# PCLOS Jingle Bells & Rockin' Around The Linux Tree



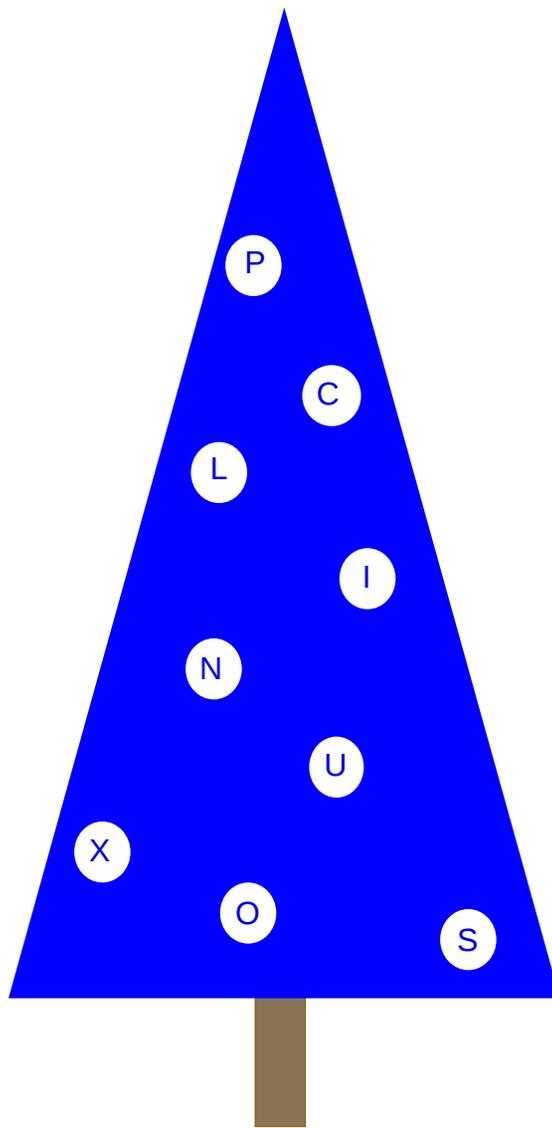
A year or two ago I looked from my window  
And much to my surprise right before my eyes  
A desktop all in blue and without much ado  
Installed it all anew and you can do it too.



PCLOS Windows go away  
Download it right now don't wait another day hey  
PCLOS LINUX all the way  
You'll have lots of fun don't you delay

Texstar by my side a feeling of great pride  
Folders so secure his system will endure  
A forum for great aid I surely have it made  
This OS I won't trade it really is top grade.

PCLOS Windows go away  
Download it right now don't wait another day hey  
PCLOS LINUX all the way  
You'll have lots of fun don't you delay



Rocking around the Linux Tree  
At the PCLOS Forum HO HO  
We're all nice you won't think twice  
About leaving us for Windows OH NO



Rocking around the Linux Tree  
Now the fun has just begun  
Folders are hung files are strung  
Even geeks are having fun

Terminals are waiting your every wish to fill  
Open one up you'll find MAN  
Everything at your command

Rocking around the Linux Tree  
Even Root's not a grouch today  
He'll tell some jokes and welcome new folks  
And be happy when they stay

There are lots of goodies round the Linux Tree for you  
PCLOS  
You will find it is the best

Rocking around the Linux Tree  
Good friends here you will find  
Don't be shy give it a try  
You'll never change your mind

# Gadgets & Gear: Samsung N510 Review

by Peter Kelly (critter)

The Samsung arrived in a rather uninspiring but practical brown, cardboard box. In one half of the box, held suspended between two rigid foam blocks, was the netbook, while the other half was occupied by a second brown, cardboard box.

This second box held the battery, a suitably pocket sized power supply, two power cables, a protective slip case, some very basic, multilingual documentation and a DVD containing backups of the system software and drivers.

As there is no optical drive on this machine, it means that you have to get access to an external drive, or dump the contents to some other media such as a USB stick or SD card, both of which it can access. So no big deal there, especially as this is Windows software and I don't intend to spend much time in there.

So, what does it look like?



It looks like a laptop. A rather small and unassuming laptop in a black plastic case with a thin chrome strip around the edges and the name SAMSUNG in chrome letters on the glossy black lid. But this is no toy. This baby packs a punch.



With a tiny 29cm x 20cm (11.42 inches by 7.87 inches) footprint and just 3cm (1.2 inches) thick, the N510 weighs in at only 1.4 kg, just a snowflake over 3 pounds, and that includes the battery.



At a little under GBP400, this netbook does not come cheap. What do you get for your money?



The N510 is powered by an Intel Atom N280 dual core processor clocked at 1.66GHz, and the UK spec machine with Windows XP Home is supplied with 1GB RAM, upgradeable to a maximum of 2GB.

Where this machine differs from most other pint-sized wannabes is the marriage of the Intel chip with Nvidia's Ion graphics, using up to 128 MB of memory. This, coupled with a needle sharp 11.6", 1366 x 768 LED screen, provides a very responsive and usable system.

Some netbooks, because of their diminutive size, score poorly in the usability stakes due to a small and cramped keyboard. No such problems here though.



The keyboard on the Samsung has full sized keys with a responsive feel and decent travel. It even has a special 'silver nano' anti bacterial coating, apparently. Most of the function keys have been assigned additional duties when used with the 'Fn' key, that allow you to do things like suspending the machine or changing the sound volume and screen brightness.



Anything else? Well yes, for a start there's a 160 GB SATA HDD, Synaptic touch-pad, WiFi, 10/100

Ethernet, Bluetooth, 1.3 megapixel web-cam, microphone, HDMI output and a standard vga video output socket. Then there are the 3 USB 2.0 ports, one of which is a powered port that you can also use to recharge small devices such as your phone. There are audio in and out sockets, a place to attach a Kensington lock security cable, a 3 in 1 card reader and finally, a six cell li-ion battery that is claimed to give around seven hours use. In practice, depending upon how you are using the machine, this is no exaggeration. It just goes on and on and...

Starting up the machine led me through the system setup routine, which included the mandatory EULA acceptance and installation of Windows XP. I was pleased to find that it offered to split the remaining hard drive space, having already grabbed about 7 GB for a recovery partition. Default was a 50/50 split giving two 71 GB partitions, one for Windows and one for data. This could be easily changed by means of a slider, which I used to give Windows 40 GB, leaving one 100+ GB empty partition. The installation took around 40 minutes.



The guys at Samsung have done a really nice job of integrating the machine with Windows XP. Everything working smoothly and providing a very pleasant user interface, if this is your operating system of choice.

The included software was no more than you would expect. Trial versions of McAfee Security, Microsoft Office, and a couple of other 'get you started' offerings. Some Samsung utilities were included, in addition to recovery software and some diagnostics. On the desktop, was a multimedia type user manual that included instructions to upgrade the RAM.

I decided to do this and so shut down the machine, removed the power supply and battery, and turned the machine over. On the base of the machine is a single access panel secured by three screws. Removing this gives access to the hard drive and the single memory slot. I removed the 1GB module and replaced it with a 2 GB stick, reassembled and rebooted the machine.

Task manager showed that the memory had been recognized, so I decided to run the diagnostics utility. This went quickly, identified that my virtual memory was now too small, and gave me a 'Fix' button. This did the job.



I bought this net book with the intention of running PCLinuxOS on it, so I downloaded a copy of the 2009.2 iso and used Unetbootin to create a live USB stick.

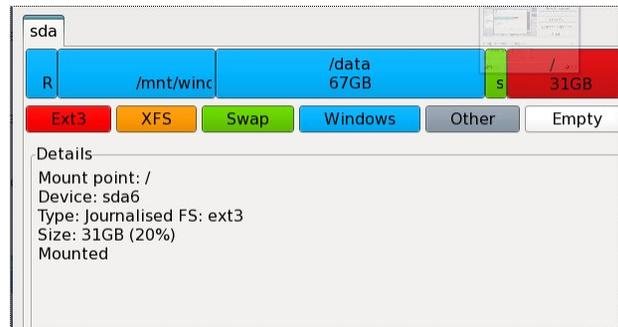
I had to change the BIOS setting to allow booting from the USB drive, but after that, it went smooth as silk, pausing only to ask for my keyboard preferences before presenting me with the KDE 3 desktop.

I decided to try to set up the wireless network before installing the system, so I opened up the PCLinuxOS Control Center. The Realtek card had been recognized, but no drivers had been found.

I was prompted to set it up using ndiswrapper, but none of the drivers offered would work. As I was in the control center, I used the 'Manage Local Disks' module to mount the Windows partition, and then back in the network module selected 'other' on the ndiswrapper page.

I had discovered that the card had a Realtek 8192 chip-set, and burrowing down through the directories, I eventually found what I was looking for in `WINDOWS/system32/DRVSTORE/net819xp`. In there were three files. I chose the one with the .inf extension. This worked, I was on line.

To install the system, I had the 100 GB partition to play with, and I used the control center to set up my partitions. I re-sized the partition to 67 GB, created a 4 GB swap partition and a final 31 GB ext3 partition.



I ran the installer and set the 31 GB partition to be the root mount point. And that was it. The boot loader recognized the Windows partition, and I had a dual boot system.

I rebooted and realized that the screen resolution was wrong. From the utilities folder, I used the video card installation tool and soon had the full 1366 x 768 resolution and set up 3D effects. I made a few cosmetic changes and added some 'essential' applications.



From PCC, setting up access to remote directories on my desk top was a breeze using NFS. I now had full access to all my files.



What works under PCLinuxOS then?

Pretty much everything. Card reader, web-cam, all the input/output ports (haven't tried HDMI yet – no cable), Hibernation, Standby and CPU throttling. 3D graphics acceleration, Movies running full screen showed no stuttering. Compiz Fusion ran flawlessly with all of the effects that I tried and, well, just wow!

The keyboard works as well as it looks, but here I found a couple of things that I didn't really like. Nothing serious, but! Whatever possessed the guys at Samsung to swap the Win key and the Win-menu key? The backslash – vertical bar key, usually on the bottom left corner of UK keyboards, has been moved to bottom right, and the right shift key is a might too small. As I said, nothing serious, but a touch annoying.

The touch-pad is a nice size, responds well, is well sited and sports a nice textured surface that helps it to blend in with its surroundings. The bugbear here though, are the buttons, or rather button, as there is only one bar that works as a rocker switch rather than two distinct buttons. The upshot of this arrangement is that you have to be a little more precise, pressing the outer edges of the rocker bar, which I didn't manage to do on many occasions.

I found that only some of the fn key + function key combos worked 'out of the box'. The sleep button worked. The touch-pad on/off toggle worked, which was useful, as it is very easy to catch this while typing and scroll up a page or two. The volume up/down and mute keys worked flawlessly.



Those that didn't work included the battery level monitor (klaptop on the taskbar covered this), the Euro symbol key ( never needed this any way), and the Back-light on/off (why would you want to do this? With no back-light the screen is useless). The screen brightness up/down keys don't work, but they do function in the GRUB boot screen if you set brightness control to 'user control' in the

bios, so it is quite easy to pre-set the brightness. Also, the WiFi on/off keys do not work (but the

commands ifup and ifdown in a root terminal do this). And a couple of Samsung app-designated keys did not work.

So no party stoppers here, and if somebody really wanted to, then I am sure that a bit of fiddling with a utility, such as keytouch, would resolve the matter.

There are a couple of things that let the package down for me, but this is only my personal opinion.

The glossy black lid is impossible to keep clean and fingerprint free, although when polished, it does look rather good.

The slip case provided is really a 'slip out of' case. With no fastener, only a fold over flap, and that glossy lid it would be very easy for it to slide out if grabbed in a hurry.

The sound is of quite reasonable quality, but even at maximum volume is very quiet. Used with earphones, as I suppose you may do with a netbook, this problem disappears.

I'm more than satisfied with my purchase. It does just about everything that I would want it to do, and it does it very well. PCLinuxOS sits well on this machine running KDE 3.5, and I have no reason to believe that it won't be just as impressive when the time comes to upgrade to KDE 4.

There is one thing that I am going to add to this machine to make it really stand out from the crowd – one of these.



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# Screenshot Showcase



Uploaded by georgetoon, November 7, 2009, running KDE 3.5.10

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