

An up-to-date overview of free software and its makers

Projects on the Move

Free software covers such a diverse range of utilities, applications and other assorted projects, that it can be hard to find the perfect tool from all that programming effort.

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As the range of projects increases so rapidly, you occasionally need a little help to make your choice of what to use. We pick the best of the bunch for you: Linux and digital cameras, 54 Mbit WLAN cards, the Debian non-free referendum, trouble with Debian's Gnome packages, and Martin Michlmayr's re-election.

At the end of March, the Gimp project finally released the long awaited version 2.0 of the Gimp graphics package. Besides an enhanced GUI, which now uses the GTK 2 toolkit, there have been a number of changes under the hood. The developers have added functionality and improved the existing tools. For example, you can now use the text tool to edit existing text. This is a function from the

top of the Gimp 1 users' wish list. Besides the program, the Gimp website [1] has also been revamped. Let's now move on to a related topic: digital photography.

Digital Cameras on Linux

Buying a new digital camera typically means shooting a lot more photos than previously. Programs such as Digikam or Gtka help users organize the image collections. Before that can happen, your camera may need some help to get it talking to your Linux machine. That can be tricky.

Of course, there are libraries, tools, and even protocols designed to solve this problem. Almost all modern digital cameras, no matter what make or model, can

be accessed from a Linux machine, typically using a USB connection. However, if your camera absolutely refuses to talk to Linux, you can still opt for a workaround via the chip card. USB card readers cost about £10, \$20, 15EUR, and they typically support various card formats. Compact Flash (CF) is probably the best known of these, with Secure Digital (SD), and

Multimedia Cards (MMC) hot on its heels. However, many card readers do not support Sony memory sticks.

Linux handles both USB card readers and USB memory sticks as if they were SCSI hard disks. Ensure that the *usb-storage* kernel module is installed, if you want to access a card or stick. Any laptop users can opt for special PCMCIA adapters for CF, SD, and MMC. Again they are accessed just like a SCSI hard disk. If you do not feel like buying a card reader, you could even use a MP3 player or a PDA with a card slot.

Protocols for Digital Cameras

Attaching the digital camera directly to the computer is still the best solution. It saves investing in extra equipment, and removes the need to continually remove and replace the memory card. Standard protocols handle the communication between the camera and the computer. Software applications can use a standard protocol to access arbitrary camera types. Software configuration tasks can be automated, making life easy for inexperienced users.

Picture Transfer Protocol (PTP) is a widespread protocol for exchanging data between cameras and computers. For more information on free software with PTP support, surf to [2]. The gPhoto 2 [3] program suite is just one Linux program that speaks PTP. Even if your camera does not understand PTP, you may still come to appreciate the gPhoto 2 tool, as it natively supports hundreds of camera models. The suite is organized in two parts, the library and the Command Line Interface (CLI). The library provides the commands required to support communications with various cameras. The CLI, which goes by the name of *gphoto2*, is responsible for auto detecting attached digital cameras, and handles tasks such as copying of images to disk.

However, gPhoto 2 will probably not keep users happy on its own. End-users



Figure 1: The KDE program Digikam helps users to archive and manage images from digital cameras. The main window shows the albums on the left, and thumbnails on the right.

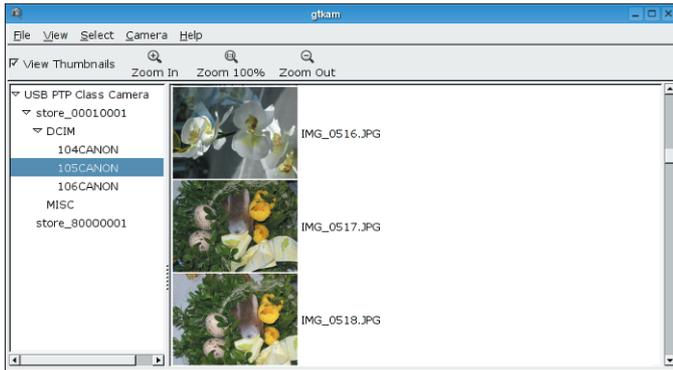


Figure 2: GtKam, a front-end for the gPhoto 2 suite. The program allows easy access to the images on a digital camera, although the GUI is somewhat spartan.

typically need a program with a comfortable GUI that allows them to perform simple tasks, such as archiving or printing images. Again, there are a few ready-made solutions: GtKam [4] is one of them. This program is GTK 2-based and does not have a particularly thrilling GUI; but it is functional and simple to use. It supports viewing and organizing images. See Figure 2.

The KDE camp also has a GUI for gPhoto 2: Digikam [5]. It includes two programs, the GUI, and the *digikamcameraclient* application, which handles communication between the GUI and gPhoto 2. The KDE program is visually superior to GtKam, although the basic functionality is the same. The best thing about Digikam is its ability to load plugins, and thus add more functionality. It comes complete with a sizable collection of plug-ins.

Getting Linux to talk to your digital camera should be no problem. Thanks to gPhoto 2, support is available for most common cameras – the gPhoto 2 website refers to more than 400 supported models. Linux includes the new PTP protocol standard, and as a final resort, you can always install a memory card reader. GtKam and Digikam are both practical GUIs for attaching cameras to computers. It only remains to be hoped that camera manufacturers will adopt PTP for new models thus removing the issue of heterogenic protocol landscape.

Fast WLAN with Linux

Wireless LAN is here to stay. Not only home users and hotspot providers use wireless technologies, some public transport companies use WLAN to coordinate

their ticket machines. Linux supports 11 Mbit cards quite well. Many cards can use the Orinoco drivers, which have established themselves as core Linux components. You can even set up WLAN hardware with the Prism 2.5 or Prism 3 chipsets as an access point, thanks to the Host AP driver.

Unfortunately, 11 Mbit WLAN (IEEE 802.11b) does have a legacy feeling to it. Speeds of more than 700 KBytes per second are impossible, even in ideal conditions. Enter 802.11g, the successor that promises higher speeds, with a throughput of up to 54 Mbit in theory. 54 Mbit cards with Windows drivers spread like wildfire, while Linux users bided their time. There were no drivers available for common chipsets, such as those by Atheros and Prism.

Two (almost) Free Drivers

Two projects were quickly launched to start programming the required drivers. One of them was named Multiband Atheros Driver for Wifi, a.k.a Mad Wifi [6]. Its aim is to write a driver for the Atheros chipset. Although this goal has now been achieved, the driver is non-free. Instead, it depends on a binary module that handles hardware communication. The programmers defended this design by referring to the US Federal Communications Commission (FCC) rules. The commission stipulates that software should not allow users to perform illegal activities with the hardware. What that translates to is that a free driver would allow users to use the WLAN card to transmit on reserved frequencies.

The Mad Wifi driver should work with any supported chipset (PCI, USB, or



Figure 3: 54 Mbit WLAN cards like this SMC2835W with a Prism chipset are quite widespread nowadays, and not much more expensive than their 11 Mbit predecessors. Thanks to Mad Wifi and Prism 54 most of them now work on Linux.

PCMCIA) and with any current distribution without any major issues. Many distributions include the driver as a matter of course. The Knoppix Linux Live distribution auto detects cards with supported chipsets and loads the appropriate driver. If you want to install the driver manually, you need a current 2.4 or 2.6 series kernel.

The second project, which aims to establish 802.11g for Linux, is called Prism 54 [7]. As the name suggests, the developers are working on drivers for cards with Prism chipsets, such as Indigo, Duette, and GT. The Prism 54 code is completely free, and Linus Torvalds recently admitted it into the official 2.6 kernel tree. Although the driver is completely free, it does need to hotplug proprietary firmware on the card. So users actually get a wolf in sheep's clothing. The driver may be free, but it needs proprietary firmware to run.

Linux can handle 54 Mbit WLAN cards quite well, thanks to Mad Wifi and Prism 54. Both projects suffer from the issue of having a free driver that ultimately depends on non-free binary code. If you consider this to be a philosophical rather than technical issue, either driver might suit your needs.

Referendum for Non-Free

In the recent referendum on the future of non-free, the Debian project decided to keep the section with a surprisingly large majority. It is interesting to note that the proposal to remove non-free from the project was unable to raise even a simple majority among Debian developers.

A large number of developers voted to continue the debate on the proposals

that had been submitted. Each option would have needed a three-quarter majority to be adopted. The decision to retain non-free is a hard blow for developers who made public appeals in support of removing non-free. External observers and developers both see the decision as a clear stance in favor of the goal of user-friendliness within the Debian distribution.

Trouble with GNOME

Up to a few weeks ago, the Debian Gnome desktop packages were firmly in the hands of Christian Marillat, who maintained the whole desktop program collection. His role as the Gnome maintainer was the subject of some debate, however. According to some developers, Christian showed little understanding of bug reports, and this led to jibes in mailing lists and via IRC.

The trouble reached its first climax when a number of developers who opposed Christian's Gnome maintainership formed the Gnome Maintainer group. At first, they seemed to be content with a few packages that Christian Marillat had dropped due to a lack of interest. These were primarily Gnome add-on packages, whereas the core desktop stayed with Christian.

The trouble, and the veiled attacks on Christian continued. By the end of March, he had had enough, and announced that he would be opening up all the Gnome packages. The way Christian did this caused quite a stir. Christian failed to adhere completely to the official guidelines for releasing package maintainership. The rules state that a maintainer wanting to drop a package with immediate effect should upload a new version of the package to the repository. The version has to include the name and email address of the Debian QA (Quality Assurance) Team. The changelog has to include a short note on the change of maintainer.

Unfriendly Goodbyes

The changelog entry that Christian added was not a notice to this effect, but a comment. The Gnome environment is spread across multiple smaller packages on Debian. If you take all the comments from Christian's changelog entries, you

get a short message that reads as follows: "You have to read all my Debian.changelog.gz entries in the right order, to understand what I wrote. Gnome sucks more and more. I'm leaving you all my Gnome packages. This will certainly make some people happy."

While many developers failed to understand this move, the members of the Gnome Maintainer group were relieved. It remains to be seen whether the group, which has taken over the maintainership of the Gnome packages, will take better care of the packages and user concerns. One thing is for sure, Christian Marillat is unlikely to disappear without a trace. Many users will be familiar with his MPlayer package, which he released for Debian GNU/Linux some time back.

Martin Michlmayr Re-Elected

The Debian Project Leader Election 2004, which closed at midnight on April 11, 2004, sees Martin Michlmayr again triumphant and at the helm of the Debian project for another year as the DPL. The election results were surprisingly clear. Of a total of 482 votes cast (a turnout of approx. 53 percent), 278 were in favor of Michlmayr. In contrast, the 2003 election was a neck to neck race between Michlmayr and his opponent Branden Robinson. Branden Robinson again ran for DPL, as he has done for the last three years, and again came in second, just like in 2003. The third candidate, Gergely Nagy, came in last behind the "None of the above" option. That is not surprising, as he had made it clear from the outset that his candidature was not meant to be taken seriously, and that he did not want anyone to vote for him as Debian Project Leader.

The election result can be seen as an expression of the developers' appreciation for the work that Martin Michlmayr put in during his first term of office. With his "am DPL, will travel" approach, Martin took part in almost every developer conference last year, holding talks on

Debian and keeping in touch with the developers. Martin Michlmayr also tackled internal issues affecting the Debian project, such as expanding the security team. The developers reciprocated by electing Martin for a second term of office.

There were a few critical comments after the results were announced. External observers commented that reforms necessary to the well-being of the Debian project had not materialized. It remains to be seen whether Martin will respond to this kind of criticism in his forthcoming term of office. The data and facts on the election website at [11] and in the form of an email posted by the Project Secretary, Manoj Srivastava, to the *debian-devel-announce* mailing list [12].

Finally, the usual request before we go: If you can recommend a program that you would like to see featured in Projects on the Move, why not mail me with your suggestion [13]? I look forward to your comments! ■

INFO

- [1] Gimp: <http://www.gimp.org/>
- [2] Free software for PTP: <http://ptp.sourceforge.net/>
- [3] gPhoto 2: <http://www.gphoto.org/>
- [4] Gtkam: <http://www.gphoto.org/proj/gtkam/>
- [5] Digikam: <http://digikam.sourceforge.net/>
- [6] Mad Wifi: Questions and answers: <http://www.mattfoster.clara.co.uk/madwifi-faq.htm>
- [7] Prism 54: <http://www.prism54.org/>
- [8] Debian Installer: <http://www.debian.org/devel/debian-installer/>
- [9] Anthony Towns' release plan: <http://lists.debian.org/debian-devel-announce/2003/debian-devel-announce-200308/msg0010.html>
- [10] Colin Watson's release plan: <http://lists.debian.org/debian-devel-announce/2004/debian-devel-announce-200403/msg0026.html>
- [11] DPL Election 2004: http://www.debian.org/vote/2004/vote_001
- [12] Email posted by the project secretary: <http://lists.debian.org/debian-devel-announce/2004/debian-devel-announce-200404/msg00008.html>
- [13] Tips and suggestions: projects@linux-magazine.com

THE AUTHOR

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