**SUITED UP:** EIOffice is a miraculous but little known office suite

"Glue Linux to Hardware"

"Not Calling for Civil Disobedience"

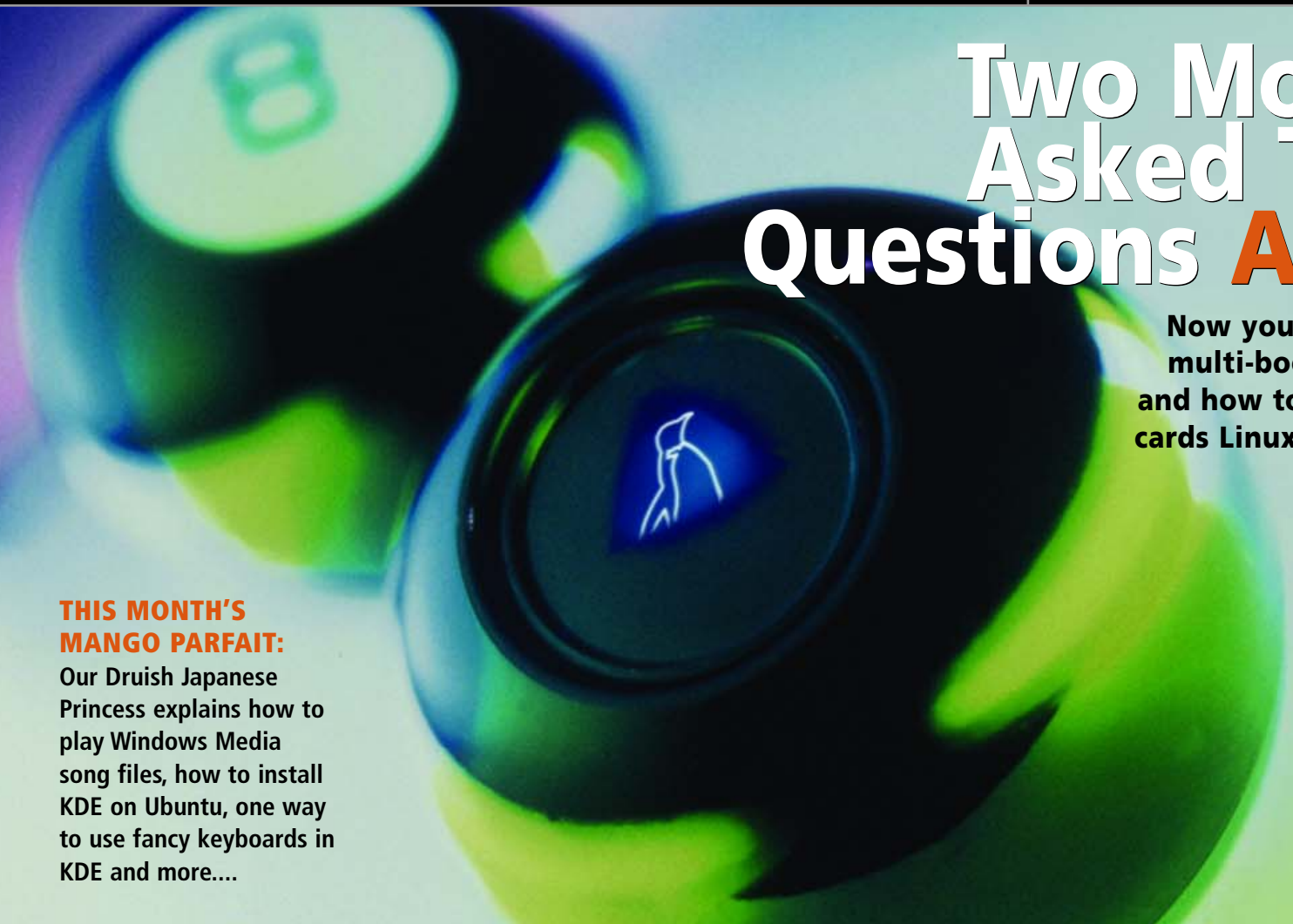
# TUX

the first and only magazine for the new LINUX user

**Gadget Guy**
*Keyboards and Mice*

**Reviewed**
*Evince, Evolution and NVU*

ISSUE 8 • NOVEMBER 2005



# Two Most Often Asked Technical Questions Answered

**Now you can learn one technique to multi-boot many Linux distributions and how to set up one of the network cards Linux does not normally support all thanks to *TUX*.**

**Inkscape Design Essentials Part Deux**

**xfce Makes a Powerful Lightweight Desktop**

**Put All Your Unorganized Thoughts in a BasKet**

**THIS MONTH'S MANGO PARFAIT:**
Our Druish Japanese Princess explains how to play Windows Media song files, how to install KDE on Ubuntu, one way to use fancy keyboards in KDE and more....


19 Xfce

23 BasKet

39 Inkscape

# TUX

ISSUE 8
NOVEMBER 2005

# CONTENTS

## P2P



## TUX EXPLAINS



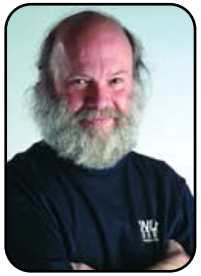
## NEXT MONTH

- Last in our series of tutorials on Inkscape
- Use Klik to download and install software
- *TUX* talks with a leading KDE developer about KDE 3.5

## REVIEWS





FROM THE PUBLISHER

# Linux on Hardware

**If more companies glue Linux to their hardware, Linux will conquer the desktop faster than ever.**

PHIL HUGHES

A few months ago, I talked a bit about Microsoft Windows vs. Linux in the context of which is easier. Well, *TUX* is here to help you use Linux, not to bash or even promote the other guys. There are, however, some valid comparisons that need to be made.

This month, I want to talk about what Apple has to offer vs. Linux. Although the Mac and Linux have close to the same market share, there are some very significant differences. Those differences may help answer some questions that you are asking.

If you look way back in computer history, people got their operating systems from the same vendor as they got their computer hardware. This was mostly because operating systems were not portable between different types of hardware, so it was only the hardware vendor that had an interest. That is, the hardware vendors had to develop the operating system in order to sell (or lease) their computers.

UNIX, the stepfather of Linux, initially carried on this tradition as it was written specifically for a PDP-11 computer. UNIX, however, far outlived the practicality of the PDP-11 hardware, and UNIX proved itself as a portable operating system.

Linux carried on this tradition initially by being written specifically for the Intel 386 processor. There really never was a lot of 386-specific design in Linux, and thus, it was easy for Linux to evolve as CPU technology evolved. Because of this general design, it also was easy to make Linux run on virtually anything, including mainframes.

While this evolution was happening, Microsoft was going the other way. That is, the Windows ports to the Alpha and MIPS chips faded away without much notice—probably because of the combination of Intel's huge market share of commodity hardware and the unsuitability of the Windows platform for large-scale computer systems.

During all this excitement, Apple quietly ported Mac OS from the Motorola 68000 processor family to the PowerPC. Next, Apple announced that the core of Mac OS would move from a unique Apple creation to a UNIX base. Now, Apple has announced that they are moving from the PowerPC to the Intel x86 chipset.

What makes this story particularly interesting is that while other operating systems have changed

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significantly at the user end, Mac OS has mostly just grown as hardware capabilities permitted that growth. That is, a Mac OS user who was stranded on an island for ten years would not have to start over to use today's Mac. This certainly wouldn't be true of a Windows or Linux user.

Why the difference? First, Apple started with the ideas of Xerox's Palo Alto Research Center (PARC). This offered a lot more of a plan than you could expect from a software company starting from scratch. But, all the more important, Apple has controlled the hardware. That is, Mac OS runs on hardware that Apple builds and only on hardware that Apple builds.

Being able to have hardware design and software design happen in parallel is a big win. It means you can plan for an organized progression in your product line. Customer feedback and requests can shape all aspects of future products rather than just one piece.

Now it is time for me to predict the future. Linux is reaching critical mass on the desktop. Linux will be easy to get running on new computer hardware. And, today, hardware vendors tend to ship an operating system with their hardware. What will happen is that a hardware vendor will seriously embrace Linux on desktop systems and that will start the flood.

Linux isn't new to hardware vendors. More than ten years ago, AMD started using Linux as part of its test suite for new processor chips. IBM shipped Linux on ThinkPad laptops. HP seems to be off and on with shipping Linux on some systems. For IBM and HP, these clearly have been experiments. That is, Linux for servers has been taken seriously, but desktops and laptops have been much more of an experiment.

There have been many reasons for this but the most obvious is that Linux was not ready for prime time on the desktop. Even today, we can debate whether it is ready, but I think we can all agree that if a large hardware vendor such as IBM, HP or Dell decided to take desktop Linux seriously, any problems would be rectified very quickly.

See the parallel? What I am saying is that if the same company is responsible for the hardware and the software, it gets so much easier to make Linux do everything right and, in particular, everything the vendor's customers are asking for.

Why would a vendor want to do this? Profit and market share are two considerations. First, hardware margins are very low these days because the PC has become a commodity. Although brand loyalty helps the big players (and this loyalty is legitimate as companies such as IBM do a great job of supporting their hardware), the premium you can charge is finite. Market share is a lot more interesting.

I am not suggesting a proprietary version of Linux here. The issue is just making Linux really support specific hardware. Today, when new hardware is released, the Linux community and commercial Linux software vendors write software to support these new features. The process works, but it would work so much better if the hardware vendor was doing its Linux homework early in the development cycle.

What if a hardware giant started offering Linux-based hardware/software-integrated desktops for specific business markets? That could be lawyers, doctors, accountants or just about any other well-defined office. Is there anything holding this back? Today, I feel the only thing needed is for a hardware vendor to jump into the Linux desktop market seriously.■

---

Phil Hughes is Group Publisher for SSC Publishing, Ltd.

FROM THE EDITOR IN CHIEF

# Civil Disobedience and Linux

**The editor in chief does not suggest that you violate license agreements and patent restrictions.**

NICHOLAS PETRELEY

In this issue, Mango Parfait explains to a reader how to play wma (Windows Media audio files) on Linux. The process involves downloading a set of Microsoft codec files and installing them on your Linux distribution. I don't know of any Linux distributions that include these proprietary files with their software. None of them want to risk being sued for providing files that might be construed as encouraging customers to violate patents or end-user license agreements. Fewer and fewer Linux distributions are making these files available from their package repositories, for the same reasons. Instead, they give you instructions on how to get these files from another source, usually based in another country where it is harder to prosecute the person(s) providing these files.

In this case, the problem is at least two-fold, if not more complex. First, it revolves around the fact that you need files that ship with Windows in order to decode music files in wma format. When someone makes these files available apart from Windows, it is possible that someone who doesn't own Windows will download them and use them. This is illegal, and I also believe it is unethical.

Let me put it this way. If I buy books, I don't see how it harms anyone if I make a copy of one or more chapters of these books for my own use. Heck, I don't see how it could harm anyone if I rewrite the chapters for my own pleasure.

I do not believe I have the right to make those chapters publicly available, however. One could argue that to do so could help or hurt the original publishers or authors. But it is up to them to decide whether or not to publish sample chapters. It is not my place to make these chapters publicly available without their explicit permission.

Likewise, I don't think it is right to make parts of Windows publicly available. So, for the record (Microsoft lawyers, please read this carefully), I suggest that you do not follow the instructions in Mango's column if you do not own a copy of Windows. Do not download the w32codecs package and use it on Linux.

Now, what if you own a copy of Windows? In that case, I do not see anything unethical about downloading and using the w32codecs package. You already own these files, so what difference does it make if you download them? I'm not encouraging you to download them, but I don't see what harm there is in doing so. Neither would it harm anyone if I downloaded chapters of a book I already own. So why shouldn't I be able to do so?

The problem is that those who make the w32codes package available make it available to anyone, not only those who own a copy of Windows.

Now, suppose that someone created a system where it was impossible to download this package unless you already owned a copy of Windows? Would you have a right to download the w32codecs package? Not according to Microsoft. This is the second part of the problem.

Notice that I said I do not see anything unethical about downloading the w32codecs package. I did not say I see nothing illegal about it. In fact, it violates the end-user license agreement to use these files on Linux, whether you download them or get them directly from your own copy of Windows.

Microsoft defines Windows as something you license, not something you buy, hence the company reasons that it can continue to control how you use the files after you thought you purchased them.

Of course, this doesn't really make sense to any sane person (which, of course, excludes most lawyers). If I purchase Windows at a software store, I get a sales receipt. I don't get a license or rental receipt. I bought a copy of the software just like I would buy a book. Logically speaking, it's mine, now, to do with as I please.

Microsoft, on the other hand, says you don't own it. Microsoft says it still owns the software. You bought only the privilege to use it in the ways they have determined you can or cannot use it. Granted, you had to agree to some outrageous terms when you installed Windows in order to finish the installation process. But I'd love to see many of the terms in the end-user license agreement tried in a justice system where outcomes are never determined by who can afford the best lawyers, or who can afford to stay in the game long enough to bankrupt the defendant before the court can reach a just verdict.

To reiterate the point, logically speaking, I say you own your copy of the Windows "book", and if you want to make copies of a few chapters (or in the case of Windows, system files) and even modify them for your own pleasure, you are not harming anyone. Microsoft says it owns your copy of Windows and Microsoft alone has ultimate control over how you use Windows files.

Given that you agree with me, here's a way one could solve the ethical side of the wma codecs problem without making Windows files publicly available. Don't publish a package with Windows files, like the w32codecs package. Publish a program that copies the files from your Windows installation (or the Windows installation CD) to the right location on your Linux distribution so that Linux can use them. If you approach the problem this way, then (ethically speaking, not necessarily legally speaking) it exonerates the people who own a legitimate copy of Windows. Of course, if someone uses the program to copy files from an illegitimate copy of Windows, that's a whole 'nother problem, and not worth addressing here, because that person is a law-breaker to begin with.

I'm sure you're familiar with the expression "void where prohibited by law". In some cases, this expression exists because someone recognizes that an agreement is unfair and prohibits the agreement from being legally binding. Personally, I believe the Microsoft end-user license agreement should be prohibited by law everywhere. If I were encouraging civil disobedience, it would be in the hope that Microsoft would litigate against someone who violated the end-user license agreement, lose the case and once and for all make their current license agreement prohibited by law. That is, if I were encouraging civil disobedience, which I'm not.

Here's what I am encouraging you to do. If you do not have songs in wma format, don't create or download any songs in that format. If you have legally obtained songs in wma format and you want to use Linux to listen to these songs, here's what to do. Find a program that does not rely on Windows files to convert wma songs into a nonproprietary format. Convert the songs to a nonproprietary format and then listen to the songs on Linux.

What if there is no such thing as a program that converts these files without the use of codecs found only in Windows? If you have songs in wma format, it's a no-brainer that you already have a copy of Windows. But if you don't, buy one. Use a program on Windows to convert these files to a nonproprietary format. I'm telling you to use the program on Windows because it prevents Microsoft from claiming you broke an end-user license agreement. Copy these converted files to media (such as a CD-ROM or DVD), delete Windows and then listen to the songs on Linux.

In principle, I would like to see Microsoft sue someone over the use of Windows files on Linux, lose the case and have its end-user license agreement torn to shreds. But it makes so much more sense to abandon proprietary formats if you're using them or, better still, avoid proprietary formats to begin with.

Okay, I did the CYA thing as best I could. Now do what you think is right.■

---

*TUX* Editor in Chief Nicholas Petreley is an author, consultant, programmer, award-winning columnist and Linux analyst for Evans Data Corp.

# LETTERS

## Quicken Replacement?

What has prevented me from fully switching over to Linux on the desktop is a financial program to replace Quicken. Can you please do a review of financial programs for Linux in a future issue?

--
**Andy**

*See the October 2005 issue's article on GnuCash.—Ed.*

## GnuCash

I really like your magazine. I do not consider myself a newbie to Linux, but as for the graphical interface program, you have taught me a lot. Anyway, I wish to say, I read your article on GnuCash, and thought this is great. I am a KDE user, but for a program like this with a guide so well written, I am willing to switch to GNOME to activate it.

I am a Slackware user, and hence I needed to compile the source code. I immediately ran into a lot of compatibility issues and missing files/programs of GNOME (like gnome-config).

As a Linux user, I thought, well, if I am missing a program, I will upgrade my GNOME program and have all the missing software. Imagine my surprise when after the upgrade, it is still not working and still missing files/programs.

I went and searched the Web for help, and found out that you should not try to install GnuCash for any version above Slackware 9.0 and downgrade some GNOME features to what can be found on Slackware 8.1, and all this is because GnuCash works only with GNOME 1 and not 2.

I believe that as a great magazine as you are, you should not write on an absolute program, or a program that is known to be troublesome (mainly because of all the GNOME inconsistency in the software upgrades). I would appreciate an article on a finance program that works. GNOME or KDE, but a tested program—or at least a warning that this program will work only if you have GNOME version 1 and below or even a KDE version.

--
**Adi**

*You do not need to switch to GNOME as your desktop to run GnuCash. The support files for older versions of GNOME coexist fine with recent versions of GNOME, so there is no reason why you can't run older GNOME programs on the latest version of GNOME.*

*I believe the problems you are having stem from the fact that you are trying to compile the program yourself. The foundation for GNOME is composed of a patchwork of many different projects, not a cohesive development effort by a single team. The projects aren't always synchronized, especially after a new version comes out. That's why it is hard to go back and find a set of older support libraries that work together properly for the GNOME program you are trying to build. I know. I've tried it. Sometimes I've succeeded, other times I failed and gave up because it wasn't worth the effort. It is much easier to use a Linux distribution with precompiled packages, because they've worked out all these problems for you.—Ed.*

## More GnuCash

I was pleased to see the GnuCash article published in *TUX* magazine [October 2005]. I wonder if the author might revisit it. My wife, you see, handles the accounts. I showed her GnuCash, and she reckons it needs a way of importing the bank details that my wife downloads over the Internet. She reckons it's worth buying MS Money for that capability, so she must be pretty serious about it! Help me, Obi Wan, you are my only hope.

--
**Vik**

## Xandros

In regards to Mr Danforth's letter and the editor's somewhat unwarranted comments about Xandros [October 2005, Letters], I have to respectfully disagree. I am a "Windows Crossover Linux newb". Being sick of the MS monopoly and the malware games being played, I tried the Knoppix live CD. Impressed at what I saw, I went for the real thing. I installed SUSE, Mandriva, Ubuntu and Mepis, before settling in with Xandros 3.02 OCE. "It just worked." I have installed it on five machines to date with no problems: two eMachines with AMD chips, two Wintergreen Celeron boxes and a Compaq PII. It detected all the hardware and hooks up with the Windows machines on my home network just fine. The biggest problem I had was my lack of knowledge.

The install was simple, and I felt comfortable with the interface. The user forum is one of its strongest points. Lots of people in there are willing to help. Maybe Mr Danforth should have given it a try. Maybe he should have tried the OCE release first before making a purchase. It's possible he might be singing a different tune.

Hardware issues face all distros. Xandros is not immune, but it worked for me. I had issues or just didn't like the other distros I mentioned above, but I didn't go out and seek to discredit them. I tried another. I would think a magazine that boasts being for "the new user" would try to promote every distro. There are a lot of satisfied Xandros users.

I feel the editor's reply would have been in better taste if it were stated as "Sorry that didn't work out for you, hopefully you'll find a distro that does."

(We can all wonder what would have happened if MS wouldn't have paid Corel to drop this distro.)

This distro may not be what an old-school Linux user wants, but to all you newbs out there that are not satisfied with your current distro, take a closer look at Xandros. It might just be "the one" for you. If not, keep trying. You have a choice. Hopefully there will be a Live CD with the next release. The goal we are all seeking is the same.

--
**Scott**

*I still don't like Xandros. That's my personal opinion, and nobody has to agree with it. I'll glady say, retroactively, "I'm sorry Xandros didn't work out for you. Hopefully you'll find a distro that does."—Ed.*

## More Xandros

I'm writing to share my experience with Xandros Deluxe 3.0 and Xandros Business 3.0. I've had tremendous success with the Xandros distribution, completely abandoning the Microsoft experience. Using Xandros 3.0 Deluxe, we're able to provide real-time support to Windows 98SE, Windows 2000 Professional, and Windows XP clients from our system. We use CrossOver Office Professional, DOSEMU, Win4Lin, Thunderbird, Firefox, Microsoft Word, Kword, etranscript from RealLegal.com (our personal RealCAT real-time reporting software), and ALL our applications run flawlessly, for which we're eternally grateful to the Xandros people for their distribution.

As for Mango Parfait, I personally look forward each month to her wonderful column from which I find inspiration, regardless of how others may feel. You folks do a wonderful job, and for that please take the A+. As someone who came from a Windows platform, Xandros was the right fit, making the transition effortless. I'm not the only real-time reporter using Xandros in a courtroom setting to provide real-time output to Windows clients, and each reporter here doing so is thrilled with the total application solution package we've combined to meet our needs. Our advice to anyone unfamiliar with a Linux distro is seriously consider the Xandros distro to ease your migration. We can hardly wait for the Xandros Server to hit the market. I'm forever thankful to be able to say "good-bye" to Windows.

If those who believe Windows is the be-all and end-all of software would open their minds and take a close, long, hard look at Linux, nobody in their right mind would ever use Windows again, IMO. Thanks for a wonderful magazine.

--
**Joseph A. Millikan**

## And, More on Xandros

I read with horror of David Danforth's experience of Xandros (and your not-so-helpful comment) in the Letters section of the October 2005 Issue. It was very unfair and unjust of you to give space to one person's bad experience of Xandros and then have the audacity to add a negative comment yourself. This is journalism at its worst, since you haven't backed it up with any facts. You have tarnished the reputation of Xandros, because one person has had a problem and you've labeled it a "Linspire wanna-be"! How biased can reporting get!

Perhaps you would like to include my letter so as to give a more balanced view. I am a newbie to Linux and bought Xandros in March, and my experience is that of a great product. The file manager system has worked a treat for me and has the benefit of integrated ripping, burning and copying of CDs. Initially, I had a problem, but this disappeared after I replaced a faulty memory module. Yes, I have had a few other problems too, but these have all been due to operator error (i.e., me!), or hardware that is specifically designed for Windows (for example, onboard sound and a Canon scanner). The e-mail support was excellent, and there is a very helpful community on the Xandros forum to help you out after the support period has expired. This is my personal experience—if you don't like it don't print it!

--
**David Wrigley**

*I like it. We printed it. Diverse opinions are good.—Ed.*

## A Request

Please consider publishing an article on how to use Windows software under Linux. I am particularly interested in using my Shorter Oxford English Dictionary (SOED) on my Linux-only notebook.

A tutorial on how to set up and use WINE would be nice—and an example of installing and using the SOED would be even better.

Thank you for your time and efforts in producing a great resource for new Linux users.

--
**Ed Paski**

*A how-to for different ways to run Windows programs on Linux is on our to-do list!—Ed.*

## Inkscape

I'm one of the Inkscape developers and noticed a question on Inkscape in your October 2005 issue that I can help address.

First, let me thank Nicholas Petreley for correctly pointing out that Inkscape is not specific to GNOME or KDE. (The Inkscape Project works most closely with Scribus, a Qt app.) It often seems like the KDE/GNOME division dilutes energies; what we need are open-source applications that just work well anywhere and can stand on their merits alone.

C. Dempsey asked about the differences between the Windows and Linux versions of Inkscape. We use exactly the same code base for both our Linux and Windows releases, so in theory, the functionality should be identical on both. In practice, we find that the Linux version works better for the simple reason that we have more developers on Linux than we do on Windows currently. Thus, issues on Linux get fixed faster than on Windows.

Judging from our download stats, it looks like there's a LOT more Inkscape users on Windows than on Linux, so it's strange that we don't have nearly as much development participation from them. Maybe it's just a cultural thing.

Anyway, beyond just plain-old bugs, there may be differences in the import/export functionality of Inkscape between Linux and Windows. Many of the conversion programs we use for import/export are themselves open-source applications, which may not have Windows versions. On the other hand, there are MANY very powerful conversion programs available on Windows commercially, and Inkscape can be configured to detect and use them.

Why should Linux developers and users care about Windows ports of one of their applications? Simple: it removes one more hindrance for users who will want to convert to Linux later.

On the topic of conversion support, it may be interesting to *TUX*'s readership to learn that Xara is sponsoring an open-source project to create a tool to convert between their program's XAR format and SVG. See the Sep-22 item at http://xara.com/press. I hope the approach being taken here inspires similar efforts to improve document-level interoperability elsewhere.

--
**Bryce Harrington**

## I Hated, I Read, I Learned, I Installed, I Loved

A bit of a strange subject line I know, But then again, we are Linux users—we have to be strange....Right!? Your magazine is great, and I read every issue at least four times. I'm a bit slow I guess. Either that or I just enjoy reading it. Either way I finally decided after seven issues it was time for me to put my two cents in, okay maybe a buck fifty.

First off, I hate seeing people complain about *TUX* and what it writes about. Don't like it? Write your own e-zine.

Second, I love Mango. She's just the type of smart-**s woman that the world needs. I mean, just because somewhere in history someone said men have two brains, most of them think that men for some reason must be smarter. "And yes I am a guy." I just think those "men" are jealous of Mango's cool avatar in *TUX* magazine.

Lastly, I'd like to add some of the stuff I use here at home to help me out. I use MPlayer a lot, and I also love my modded Xbox. So I created some scripts to help me out with both.

First MPlayer or rather mencoder/mplayer. I rent and watch a lot of movies, and most times I don't have time to watch them all before they are due back. So I like to copy my rented DVDs to my laptop for future watching. (No I don't condone the illegal copy and distribution of DVDs.) I'm a watch once and that's pretty much it type of person. I have a handful of movies I can watch more than once. *Dark Crystal*, *Labrynth*, anything with Angelina Jolie and a few older movies.

This script copies the DVD to my hard drive:

```
#!/bin/bash
echo "Enter movie title"
read movie
mencoder -oac copy -ovc copy dvd://1 --dvd-device /dev/hdc -o $movie.avi
```

Then, `chmod 711` the script file and `cp` it to your /usr/bin folder. Now you can type `cpdvd`, or whatever you named it, from any directory as any user and copy the movie in the DVD drive.

For some distros like Slackware you may have to mount the CD first and use the /mnt/cdrom instead of /dev/hdc or /dev/dvd. Great e-zine, and don't let Mango quit.

--
**Jeff L. Richtman**

## Opera Tip

In the June 2005 issue, I read the letter from Valerie Higgins about the missing "eye" in Opera for adjusting viewing size. The best thing is too use the short-cut Opera provides. It's easy and a lot faster than using the mouse. Increasing the viewing size is done with the Numeric + key or the 0 key. Decreasing the viewing size is done with the Numeric - key or the 9 key. If you press Ctrl-B in Opera, you will get a overview of all the keyboard shortcuts.

--
**Kai Stian Olstad**

## Polling Problems

I don't know what your opinion regarding actively encouraging one's users to participate in a poll is, but I suppose that your recent Readers' Choice Awards [September 2005] has been faulted without your knowledge.

When *DesktopLinux* received lots of incoming votes for Yoper, the editors discovered that Yoper was actively pushing its users toward voting for it, thereby flawing the results: http://www.desktoplinux.com/articles/AT2127420238.html.

As a reaction, *DesktopLinux* decided to exclude Yoper from that competition: "our readers were quick to report a fishy smell, and a trip over to Yoper's home page today turned up evidence of a well-intended but survey-busting tendency to encourage Yoper users to boost Yoper's standing in online polls."

I was recently surprised by PCLinuxOS's excellent result in your user's awards, but reading through their forums I discovered an unpleasant explanation. You will understand what I mean after skimming through this thread: http://www.pclinuxonline.com/modules.php?mop=modload&name=Splatt_Forums&file=viewtopic&topic=7277&forum=50

To make my point clear, I provide a few quotes:

"If you haven't already please go to http://www.tuxmagazine.com/TUX_Readers_Choice and vote for PCLinuxOS."

"Done—twice ;-)"

"Bump. Sorry guys but I want to keep this thread visible for the next week or until the voting closes."

"No problem. I've set the thread to Sticky."

"Thanks yama, but that doesn't keep it on visible on the index page in Recent Posts. I'll unset the sticky when the voting ends."

Now I wonder whether this is fair to the other distributions. Posting a news story to tell the users that there's a poll going on is one thing, but spamming them with constant voting incentives surely distorts the results. Ubuntu and SUSE haven't done anything like this, and neither have lower-ranked distributions done it (I suspect, although I obviously haven't been able to check them all).

Seeing this, one gathers the conclusion that the poll has been partly sabotaged. Maybe *TUX* magazine can publish a disclaimer, or something even better, to make the situation clear to the audience (whilst mentioning that PCLOS is indeed a nice effort, just probably not the third of them all)? This would surely raise the overall level of respect the readers have toward the magazine and the data it provides.

--
**Juergen**

*Thanks for pointing this out. We will be discussing various ways to minimize the possibility of this sort of thing happening again.—Ed.*

## Lightweight Desktops

I really enjoyed that you included an article on lightweight desktops in your September 2005 issue. I have been using Linux on my desktop computers for about five years now, and while I started with KDE, I have found that the lightweight alternatives accomplish pretty much the same end results, just without the eye-candy and occasional handy desktop tool. I think it ought to be mentioned that distributions like Vector Linux are absolutely wonderful

for lower-end and older hardware.

Although Mepis and Ubuntu are great for machines that can handle KDE or GNOME, respectively, the default window manager in Vector Linux is IceWM, which makes my lowly 400MHz laptop scream with speed (well, compared to how it used to perform with Win98). And as with Mepis and Ubuntu, Vector Linux is available for free and is geared for the nontechnical user, although the gurus can appreciate it as well. If you are using something like Fedora, Mandriva or SUSE, you owe it to yourself to check out one of these lightweight distributions (live CDs are nice) and see how fast your machine can become!

PS: I am not affiliated with Vector Linux and do not work for them, and I normally run Arch Linux, which I love, on my main P4 desktop. I just find that Vector is a great distribution, and I feel your readers should know about it.

--
**Marko Vidberg**

## NeroLINUX

I know it's been said before, but your magazine is like a breath of spring to us newbies (I wish there was another way of describing us, as it's a bit of a put down to someone who has been using computers since the days of the ZX81).

Anyway, to the point—you have renewed my interest in Linux, and so I wonder if you could let your readers know about NeroLINUX for copying and burning CDs and DVDs. And like Nero for Windows, it does everything; it is truly amazing. I downloaded it from http://www.nero.com, it compiled and worked on my distro (Mandrake...sorry Mandriva 2005 LE) the first time, and I was able to burn an iso of over 650MB in just under 2 min. 30 secs.

NeroLINUX is free to download till the 30th of November 2005, and then on offer at $19.99 US. I would advise people to have a look, download, try it and see what it can do, and then make up their own minds whether they want to buy. Thank you again for the light at the end of the Linux tunnel.

--
**Chris Porter**

## Metadot

Your September 2005 article on Metadot is the worst piece of article I read so far from your fine magazine. The whole article reads like an ad copy. By the end of the article, I still haven't learned anything that's unique about Metadot. All the article said was how it helped so and so, and provides easy changes to Web sites and low costs. How is that different from what any other open-source portal system offers?

Why is Metadot good? The article didn't mention anything about the software or hardware requirements. Nor did it detail its architecture, or the technology behind it. And it didn't offer anything useful, like a sample installation of Metadot or a run-through of its features. It totally breaks from *TUX*'s usual hands-on approach to articles. And worst of all, the article is a bore to read. I felt like it totally wasted my time. Please keep up the good work with the rest of the magazine, and refrain from accepting any more articles like Metadot.

--
**Yi**

*I'm sorry you didn't like the Metadot article. I installed it and tested it to make sure it was a good piece of software before I allowed the article to be published. I can't write a review for you in response to your letter, but as I said in my column in the same issue, it was not easy to install, but I thought it was terrific once you have it running.—Ed.*

## *TUX* and Mango

I have read *TUX* since it first came out and like it very much. My distro is Linspire, and I really liked the review in the August 2005 issue of *TUX*. I was able to install Linspire (then Lindows) and was delighted that it recognized everything on my no-name, homemade PC. I have installed and used various Linux distros, but Linspire was by far the favorite just because of the CNR warehouse. Linspire is not as configurable as distros like SUSE 9.2 (I really like YAST), but CNR is the wave of the future.

I would also like to voice my support of Mango Parfait. I like her suggestions (like the quick browser) and even like her seasoning of humor. Being a KDE

fan myself, I don't mind the friendly pokes at GNOME. I am sure there are more KDE people who like her columns than the noise of the GNOME addicts would lead you to believe. Thanks for producing *TUX* and keep up the good work.

--
**Paul Pratt**

## Greetings from Costa Rica

I would like to let you know that *TUX* magazine rocks! It's now my first reference source for Linux and open-source information. Every word in the magazine is worth the download from your site (especially if you use a dial-up). I cannot figure out how I lived without it in the past.

I remember those old days when I first came to the Linux world, and using a 333 Celeron machine, tried to install Red Hat 5.0—how difficult it was.

Your magazine makes it easier for me. In fact, I am willing to share it with some folks here so they can learn the TRUTH, and that is that Linux rocks and Windows su***.

It is a pleasure to to read your articles. What else can I say? KUDOS to everybody at *TUX* magazine. I also enjoy reading Mango Parfait...we have a lot of mangos (fruit) here in my country. *Pura Vida amigos*, Feel the Force and use the real Linux power.

--
**NAVEGADOR**

## Mango Is a Goddess

I just wanted to say I'm like SOOOO into *TUX* magazine and especially Mango Parfait, who is like a goddess to me. I've been using Mandrake (oh, 'scuze me, Mandriva now) for like three years and have been totally wanting a magazine like *PC World*, which is what got me started on Windows these many years ago. And now I have *TUX*, with all kinds of great articles an awesome wannabe Linux high priestess like me can use. I LMAO at those guys who say they don't like Mango or her humour, I mean it's just SOOOO totally obvious they're just mad because they haven't had a date with a cute Linuxchick since like, well, ever, and anyway, most techie magazines are too stuffy and self-important anyway, so I'm like psyched that *TUX* doesn't have a giant USB stick up its butt or anything. If I ever meet Mango, I'm going to totally treat her to like a HUUUUGE mocha cappuccino latte espresso venti or something. She rocks!

--
**Frenchy**

## Suggestions

As an experienced Linux user, I still find some useful information in *TUX* magazine, and I also enjoy the full-screen PDF display, which unlike other e-documents, is very easy to read. However, I have a couple of suggestions to make *TUX* even better:

1) Build an article index on the Web site, so that a reader can easily find articles on the various topics. While direct links to articles would be great, even just listing the issue of *TUX* and a page number would be a help.

2) Lose Mango Parfait. Her style is really not appropriate for a tech-support column. If I'm looking for a solution to a problem, I don't want to be talked to as though I were a child. I'm also really not interested in the stupid comments she sometimes makes.

--
**James Knott**

## Shiznit?

Apparently your magazine is read by a bunch of humorless saps. Mango Parfait's column is the shiznit. Imagine that, someone is actually writing about technology with a sense of humor and good-hearted name-calling. She makes me laugh, and that's a good thing. Those dissenters that have spammed you with hate mail need to, hmmm, I don't know, get out into the sunlight and have fun sometimes. Maybe then their lives wouldn't be so miserable.

--
**P3RR1N**

# Q&A with Mango Parfait

**Ubuntu and Kubuntu dominate Mango's attention this month as she explains how to install KDE on Ubuntu, how to make these distributions play Windows media files and more.** MANGO PARFAIT

Otaku finally quit playing *Everquest II*. He says the company changed the game, and it is more like work than play. Does he pay more attention to me because he does not play *Everquest II*? No. Now he plays *World of Warcraft*. He made me try it. I do not want to admit it, but it is very fun. Now we fight over who gets to use his Windows PC to play. I play a druid. My druid is very pretty. She is an elf with bright blue hair like mine before I dyed it yellow. A druid can change into a bear. The bear is not pretty, but it is fun to fight as a bear. Now Otaku calls me his Druish Japanese Princess. I think this is romantic.

Otaku took me to lunch. I eat Otaku's french fries. I like french fries with vinegar and extra salt. Otaku says he will not eat french fries because they are fried in Greece. I think he is wrong. Why do they call them French fries if they are fried in Greece? Otaku tells me a story while I eat them. He says a man goes to the doctor. The doctor says the man has only six months to live. The man asks, "Is there anything I can do?" The doctor says, "You can marry a Druish Japanese Princess and move to Iowa." The man says, "Will that help?" The doctor says, "No, but it will be the longest six months you ever lived." Otaku asked me if I know what that means. I am not sure. Maybe he is telling me he wants to get married, but I do not know why he wants to live in Iowa.

I know what your questions mean. I always like your questions. Please send me more.

**Q Dear Mango, I have a music collection that I collected for years, and it would be difficult, if possible at all, to collect it again. And the major part of that collection is made in wma [Windows Media Player] format. Is there any player to play or other software to make a different format of these files? I found several scripts that make MP3s of them, but transition of one song takes half an hour—I really do not have patience like this.**

**The next question I have is how to make my machine use GNOME and KDE on one platform—is it possible to [do this with] Ubuntu?**

**Thank you in advance, and I wish the best luck for *TUX* and you personally.—*Gytis, Lithuania***

A Dear Lithuania Gytis, I like your name. Lithuania sounds like a girl's name so I think you are a girl. May I call you Ms Lithy? Maybe not. Maybe people think your name is Lizzy and I have a lithp.

Okay, Lithuania, let me answer your questions. First, I see people say IANAL and I think they say "I anal". I look up anal in the dictionary and I see that it can mean meticulous and careful. I am meticulous and careful, so I say, "Hi, I anal too." Now I learn IANAL means I Am Not A Lawyer. It is true. I am not a lawyer. So I still say "Hi, I anal too."

I tell you this because I do not know if you break the law by playing wma files on Linux. I do not think it is breaking the law,

but I anal. Many Linux distributions do not want to take the chance, so they do not include the packages you need to play wma files or DVDs. This does not mean you can never play wma files on Linux. But you have to be responsible for making it work so that Ubuntu is not arrested by the patent police. We printed your name, so I suggest that you change your name if you are afraid of being arrested by the patent police. Abyssinia is a nice name. I could call you Abby.

The Ubuntu Web site gives instructions on how to play wma files. Do not follow those instructions. They do not work anymore. I copied those instructions and made some changes to the instructions to make them work. Here is how to make the Hoary Hedgehog version of Ubuntu (Ubuntu 5.04) play wma files.

Open a terminal and run this command:

```
$ sudo gedit /etc/apt/sources.list
```

If you like a different editor more than gedit, use your favorite editor instead. Add the following line at the bottom of the file:

```
deb ftp://ftp.nerim.net/debian-marillat/ etch main
```

Then save the file. Now run these commands (each time you run a command with sudo, you have to type in your password):

```
$ sudo apt-get update
$ sudo apt-get install w32codecs
```

Now you want to remove the line you added because it can make trouble for you later. Open the file again with this command (or use your favorite editor instead of gedit):

```
$ sudo gedit /etc/apt/sources.list
```

Delete the `deb ftp://ftp.nerim.net...` line that you added. Now add this line instead:

```
deb http://us.archive.ubuntu.com/ubuntu hoary universe multiverse
```

If you are running the latest version of Ubuntu or Kubuntu, add this line instead of the one you see above:

```
deb http://us.archive.ubuntu.com/ubuntu breezy universe multiverse
```

Save the file and exit the editor.

Now you need to run these commands:

```
$ sudo apt-get update
$ sudo apt-get install totem-xine gstreamer0.8-misc gstreamer0.8-plugins
$ sudo apt-get install gstreamer0.8-mad gstreamer0.8-ffmpeg libmad0
$ sudo apt-get install msttcorefonts libdvdread3
$ sudo /usr/share/doc/libdvdread3/examples/install-css.sh
$ gst-register-0.8
```

Some of these commands make it possible to play wma files. Some of these commands are for making it possible to watch a DVD too.

Now you can play your wma files with the Totem player or the GNOME music player (Rhythmbox). You cannot play wma files if they are encrypted to use digital rights management. I do not know any way to do that in Linux. You can play only wma files that are not encrypted.

It is very easy to run KDE on Ubuntu 5.04 (this works for Ubuntu 5.10 too). Here is how to install KDE on Ubuntu. Run the Synaptic package manager by clicking on System→Administration→Synaptic Package Manager from the GNOME main menu. Type in your password. Click the Reload button in the toolbar. Select KDE Desktop Environment in the list on the left, and select kde-core in the list on the right (see Figure 1).

Click on the check box and tell Synaptic that you want to install kde-core. Synaptic will want to install many more packages. This is okay. This installs everything you need to run the basic KDE programs. I am certain you will want to run many more KDE programs. Browse through the list and pick other

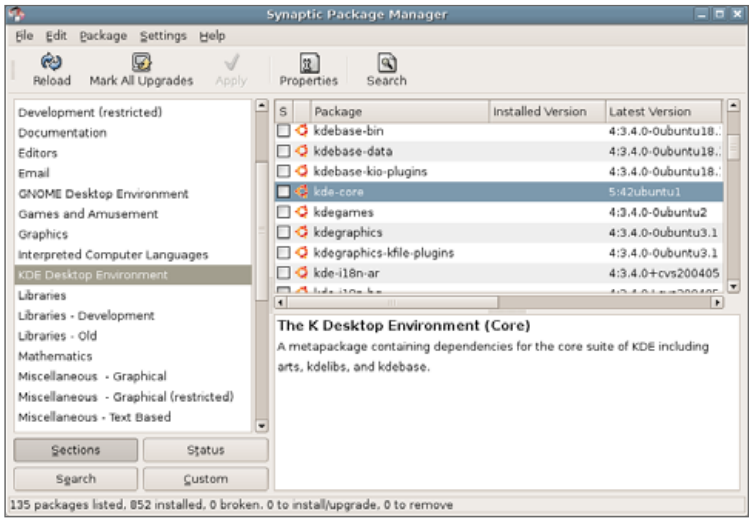


Figure 1. Install KDE with Synaptic

packages to install, like kdegraphics, kdemultimedia, kdenetwork and more. You can even install packages to make your system look like Kubuntu instead of Ubuntu, but this is not necessary.

If you run KDE, you can use the instructions above to play wma files with KDE music players like amaroK. The totem-xine program uses many GNOME packages. If you are adding KDE to Ubuntu this is okay. If you are running Kubuntu, you do not have to install totem-xine. You can install xine-ui instead.

**Q Hello dear Mango, I'm a new *TUX* reader and I like your column. As I managed to run my Canon IP4000 printer without having to buy Turbo Linux, you've become my favourite Linux expert. Unfortunately, I'm a clumsy (almost) new Linux user....I'm running Kubuntu, and I'm using KDE (who would have guessed!). I do have some challenging questions to ask, so, here we go.**

**Question 1: I own a multimedia keyboard, namely a Logitech Cordless Desktop LX700, which seems to be unsupported under Linux....When I go to the KDE Control Center, a lot of Logitech keyboards are listed, but when I select a "Cordless Desktop" entry, only a few multimedia keys are supported. I just wondered if you had a tip or two to have my nice multimedia keys running, without having to do weird stuff like recompiling the kernel or summoning a coder's good will.**

**Question 2: My computer is equipped with a SoundBlaster Live! card and a set of four speakers. It's running perfectly well with ALSA, but, when I lower or raise the volume, using KMix or whatever sound manager, the volume changes only on my front speakers, leaving my rear speaker yelling....Is there a way to link the global volume of the sound card to PCM & Surround? (Just like its Win****'s behavior?)**

**Question 3: I have a Webcam, like many other people, but mine is an old one: it's a Philips Vesta Pro. It runs on USB 1.1. I would like to try video conferencing, but I'm facing two problems: 1) when I plug the Webcam in to the computer, the system uses it as the default sound card. On top of that, it's leaking USB bandwidth and I'm not able to connect even a simple pen drive. I just think a driver for this device would help, but I can't find one! 2) What video-conferencing software would you recommend?**

**Thank you for reading this very long mail, and I hope my questions were desktop-related enough for you to answer.**

**Oh, by the way, I'm a *Cowboy Bebop* and *Ghost in the Shell* fan, and a *FLCL* and *One Piece* addict (I hope these aren't flaws).—*Yours, Etienne***

A Yay for *Cowboy Bebop*, *Ghost in the Shell*, *FLCL* (*Fooly Cooly*) and *One Piece*! I like other anime more but I like *Cowboy Bebop* and *One Piece* a lot. Especially *One Piece*. Otaku likes *Ghost in the Shell*. He is always talking about how *Matrix* is a cheap copy of *Ghost in the Shell*. I do not care. I like *Matrix*, too, but only the first movie.

These are not flaws. These things tell me that you are sophisticated. To readers who are not sophisticated and do not know what we are talking about, these are all anime (Japanese cartoons). *One Piece* is about pirates and magic fruit that makes one pirate stretchy like Mr Fantastic in *Fantastic Four*. Did you know

that you can watch *Naruto* and *Bobobo-bo Bo-bobo* in English now too? *Naruto* is fun and *Bo-bobo* is even more crazy than *Cromartie High*, one of my favorite mangas (Japanese comics). The *Cromartie High* TV cartoon is funny too, but the manga is funnier.

Thank you for your kind response about my instructions on how to set up a Canon printer in the August 2005 issue of *TUX*.

Okay, let me try to answer your questions.

Answer 1: You can turn off KDE keyboard layouts and use a program called lineak. Install these programs from the package manager or command line:

- lineakd
- lineak-defaultplugin
- lineak-kdeplugins
- lineak-xosdplugin

lineak supports many keyboards, and I think it supports yours. It is not easy to configure lineak. You have to create a configuration file and edit it to make it work the way you want. The KDE plugins make this easy if you do not mind creating and editing configuration files. The complete instructions are too complicated to explain in detail, but here are some commands to help you get started. Type this command to look at the list of keyboards that lineakd supports:

```
$ lineakd -l
```

You will see many, many Logitech keyboards. Most of the keyboard names do not match the product names exactly. For example, the Microsoft Natural Multimedia Keyboard 1.0A is listed as Microsoft Multimedia Keyboard 1.0A. The lineakd program leaves out the word Natural, but it is the same keyboard. You may have to pick a Logitech keyboard definition that does not match yours exactly, even though it is the same keyboard. Just for example, maybe your keyboard is the same as the Logitech Cordless Desktop Deluxe Optical. You will find this entry in the list of keyboards:

```
LTCDDO      Logitech Cordless Desktop Deluxe Optical
```

Now, you create the lineakd configuration file. Use the following command (it uses the abbreviation in the list to create a configuration file):

```
$ lineakd -c LTCDDO
```

Here is the hard part. Now you have to edit the configuration file to make it do what you want. The file is called ~/.lineak/lineakd.conf. Open this file with your favorite editor, and you will see entries like these (here are just a few examples):

```
AudioLowerVolume =
AudioMute =
```

See how the definitions are blank? You have to fill these in yourself. Do not worry, it is not as bad as it seems. Type this command:

```
$ lineakd -L
```

This lists all the built-in commands you can use. Here are some example definitions matching the example keys above:

```
KMIX_VOLUP
KMIX_VOLDOWN
KMIX_MUTE
```

If you are using KMix as your mixer, edit the file to look like this:

```
AudioLowerVolume = KMIX_VOLDOWN
AudioMute = KMIX_MUTE
```

When you are finished editing the file, log out of KDE. You must log out of KDE if you had keyboard layouts enabled during your KDE session, even if you disabled them. The lineakd program is very moody and will not run until you have logged out and logged back in with keyboard layouts already disabled. Now open a terminal and run this command:

```
$ lineakd &
```

Try out your keyboard. If everything works, yay. If you need to make changes to the configuration file, boo. When you are happy with lineakd (maybe I should say if you are happy), use your favorite editor to open (create) the file ~/.kde/Startup/lineak.sh and put these lines in it:

```
#!/bin/bash
lineakd &
```

Save the file and run this command:

```
$ chmod +x ~/.kde/Startup/lineak.sh
```

Now lineakd will start every time you log in to KDE.

Answer 2: Run KMix. Click on the tab labeled Switches (see Figure 2). Your view of KMix will look different from mine, because you have a different sound card. You should see something you can turn on to make all four channels work.

If this does not work for you, here is another idea. You are probably using ALSA (Advanced Linux Sound Architecture) to make your sound card work. Install an easy package, like alsamixergui (use Synaptic or your favorite package manager). The good ALSA mixers, like alsamixergui, have volume controls for all of the features for your card. See Figure 3 for an example using my audio driver.

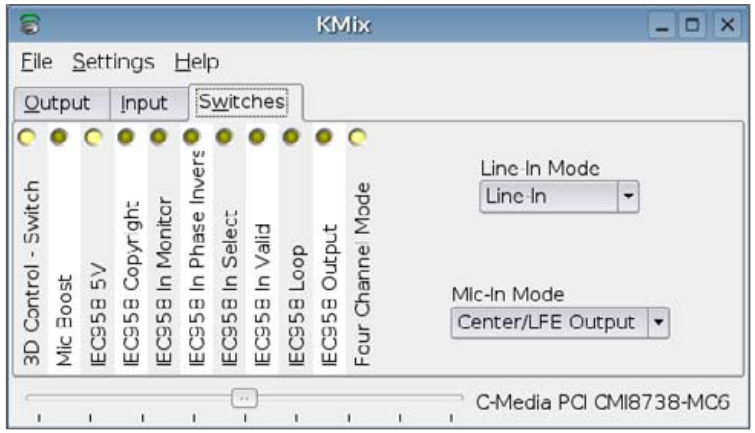


Figure 2. KMix Switches


Figure 3. alsamixergui Volume Controls

Answer 3: I do not know how to fix your USB problem. I think your hotplug software is not configured right. I do not use video conferencing software. I hear that GnomeMeeting is a good program.■

---

I am a sweet, humble, delicate and very cute genius who is at your service to answer your Linux questions. Send your questions to mango@tuxmagazine.com. I am deeply sorry that I do not have time to respond to anyone directly by e-mail, but I will select as many questions as I can and answer them here.

# Lightweight Desktops: Xfce

**Xfce takes the Common Desktop Environment to new heights as an alternative desktop environment.**

JOHN KNIGHT

In the second installment of this series, we explore the increasingly popular Xfce desktop [see John Knight's "The World Beyond KDE and GNOME" in the September 2005 issue of *TUX* for more on lightweight desktops]. In the words of the user manual, "It aims to be fast and lightweight, while still being visually appealing and easy to use." If you're tired of the bulk of KDE and GNOME, but still want eye-candy, this is the desktop for you. With the ability to change the desktop background and window manager easily, Xfce is pretty and trim without making you feel like you're compromising.

## LOOKING AROUND

Xfce started out as a CDE clone, the Common Desktop Environment based on Motif. Although it has evolved into a much more powerful window manager, it still will be familiar to anyone who has used HP-UX or other flavors of UNIX or UNIX-like systems that adopted CDE as the default window manager.

At the bottom center of the screen is the Xfce4 Panel (from here on referred to simply as panel). This panel contains a number of icons, all sorted into different tasks, like a file manager, music player, settings manager and so on. In the middle of the panel is a desktop pager that allows you to switch between all four desktops, KDE- and GNOME-style.

At the top of the screen is the taskbar. Not only does it allow you to switch between windows, but clicking on a window's button allows you to minimize it as well. At the far right of the taskbar, is a small icon: this is called Session control, and it lets you browse through all of your open windows and kill any windows that have crashed.

At the bottom right is something called the Lil' Star - Iconbox (or iconbox for short). This displays the icons of all your minimized windows on all desktops, although it can be customized so that it displays the icons of all windows, sits somewhere else and so forth. If you hover the mouse pointer over one of the icons, a small dialog box appears that tells you the name of the application it represents.

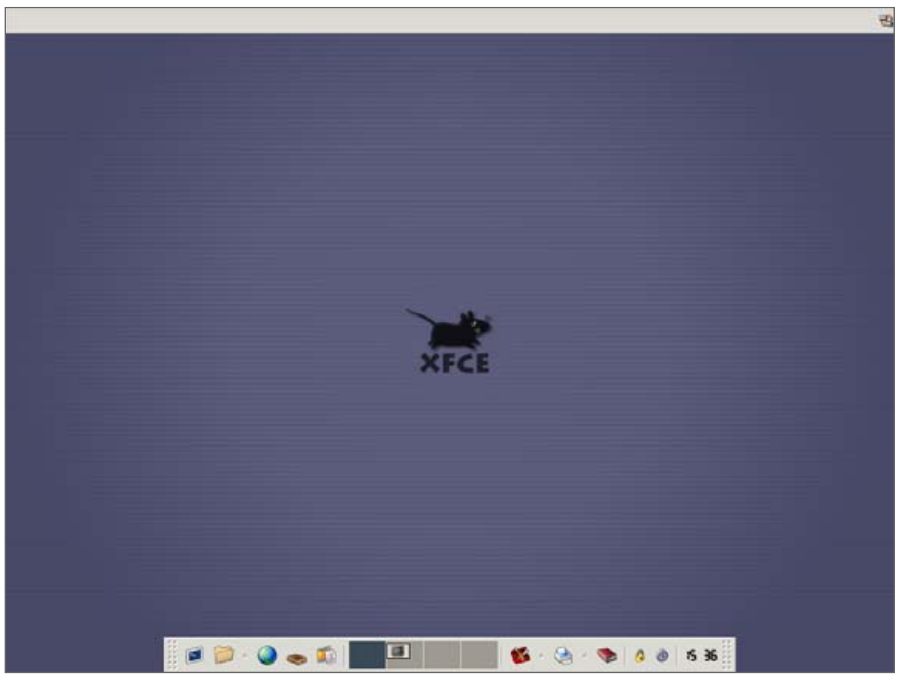


Figure 1. The Default Xfce Desktop

If you click your middle mouse button on the desktop, a list of all your desktops and their windows appears (press down on the scroll wheel if you have a wheel mouse, or click both the left and right mouse buttons at the same time if you have a basic two-button mouse). If you click your right-mouse button, the Desktop Menu appears. This menu should contain a fairly comprehensive listing of all the applications you have installed,

plus provide quick access to a terminal, Web browser and settings manager.

Going back to the panel, the icons on the left represent your applications, and the icons on the right perform certain functions. On the function side are five icons, going from left to right: the Settings button, allowing you to customize most aspects of Xfce; a printing button, which will be discussed later; a help button, which launches the manual in a local browser; a lock screen button; and a close session button. On the application side is a button for a terminal, file manager, Web browser, mail client and music player.

If you look closely to the right of some of these buttons, there is another small button with an arrow pointing upward. Left-clicking on this arrow brings up a menu with more applications relating to the same field as the main button, and left-clicking on this button again closes it. On my distribution, clicking on the file manager button brings up the lightweight Xffm file manager. If I click on the small menu button beside it, I also am given the choices of Nautilus or Konqueror.

## CUSTOMIZING THE BACKGROUND

Changing your background is dead easy. Right-click on the desktop and choose Settings→Backdrop. Browse around for your favorite picture, and you're on your way! You also can get to this utility via the Xfce Settings Manager, under Desktop: backdrop.

## CUSTOMIZING THE PANEL

If you right-click on one of the panel icons, you will see a choice of Add new item, Properties and Remove. Obviously, Remove removes the icon, and Properties enables you to fiddle around with whatever program is launched. You can change the command to run a different program, change the icon used, change its position on the panel or run the program in a terminal. If perhaps you wanted to change your music player from XMMS to something else, in the command section, replace `xmms` with perhaps `zinf` or `beep-media-player`.

To add a new icon, choose something from the Add new item list. There are a number of pre-chosen items, all with different uses, but if you want to create a new selection with a different field of applications, choose Launcher. With a new launcher, you can get it to run whatever you want, but you have to give it a program's command, and you might want to give it an icon too. For example, let's create a new group called Video Players, and we'll get it to run Xine, add on a side menu and add RealPlayer and VideoLAN as well.

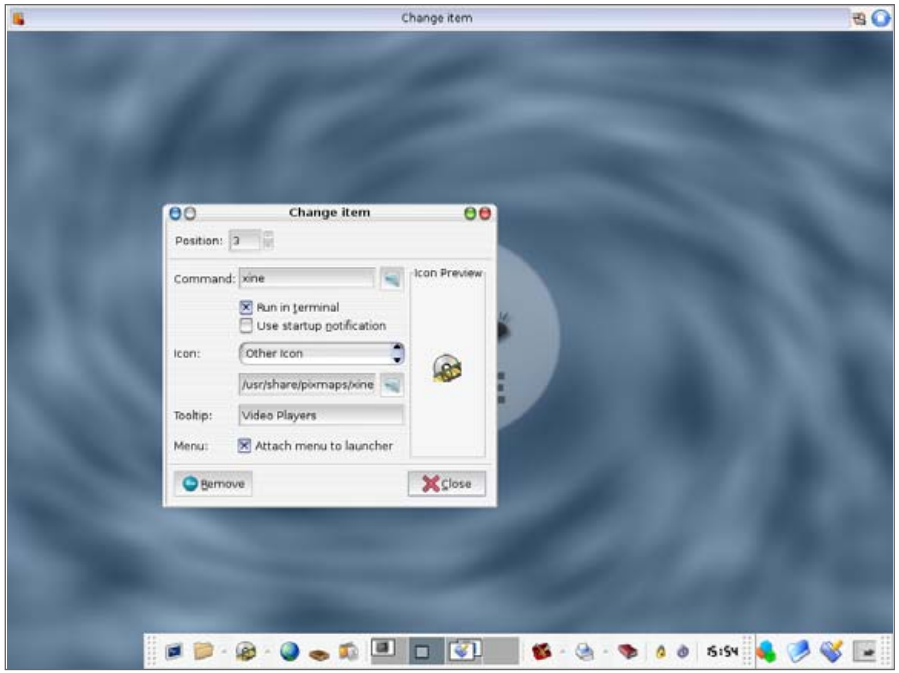


Figure 2. Creating a New Panel Entry with Xine

## PANEL ICON

1. Right-click on an icon and choose Add new item→Launcher.
2. Choose the icon's position, and add the command `xine` in the Command section.
3. In the Tooltip section, write whatever you like (I'm using Video Players for this example); this will give a description of what the icon does when you hover your mouse-pointer over it.
4. It's now ready to go with Xine, but you probably will want a nice icon too. You could use the multimedia icon from the Icon drop-down menu, but for a more specific icon, it's better to browse for one. Click the small browse button (the button that looks like an open folder),

and make your way to /usr/share/icons. There are hundreds of icons to choose from, but right down at the bottom, there should be one called xine.xpm, which will suit our needs perfectly.

5. Click the close button, and Xine is ready to play! Feel free to try it out, and then we'll add on a submenu with RealPlayer and VideoLAN.

## ADDING A SUBMENU

1. Right-click on the Xine icon and choose Properties again.

2. If it's not already checked, check the box that says Attach menu to launcher.

3. Left-click on the new side menu and choose Add launcher.

4. Add in the command and choose another icon. It will be basically the same as with Xine, but this time, enter `realplayer` in the command section and RealPlayer in the caption section.

5. For VideoLAN, repeat the steps for RealPlayer, but use `vlc` for the command, and VideoLAN as the caption.

If any of these buttons don't work, you probably don't have the program installed in the first place. To remove an entry, simply right-click on the item and choose Remove. Now that you've started to change the environment to suit your needs, let's add a real personal touch with the way windows feel.

## WINDOW MANAGER

We're about to delve into the Settings Manager; open it from the panel and choose the Window Manager option. You are now presented with a plethora of Decoration styles, and these will define how your windows will look. My favorite is agua, but feel free to choose whatever you like. On the right is an option for changing the Title font. This lets you play around with the text at the top of your windows, allowing you to change the size and feel. If you look around, you'll see some more advanced options too; feel free to play with them if you're interested.

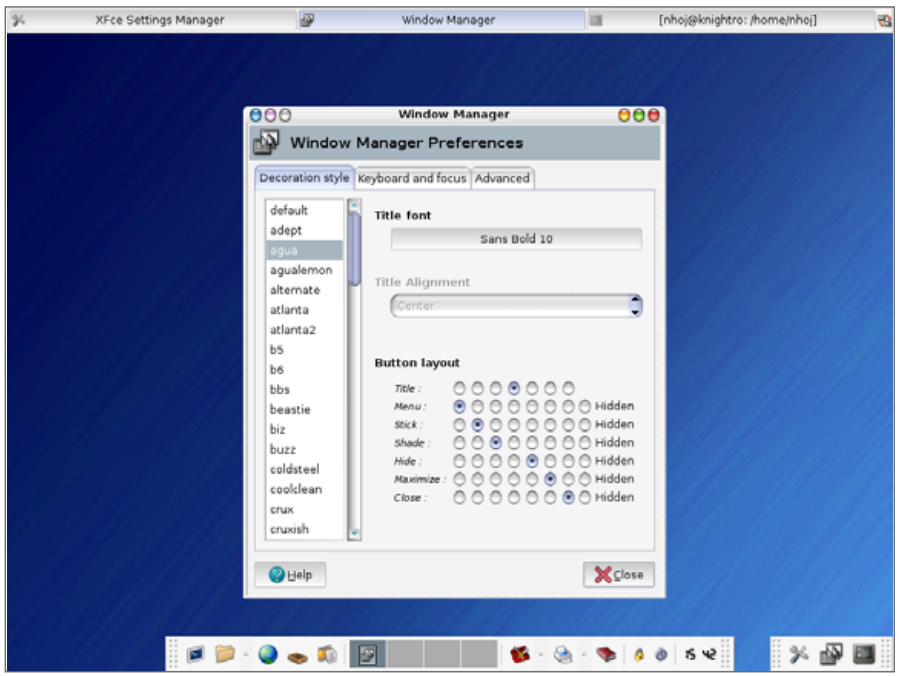


Figure 3. My own taste in aesthetics—notice the cool Button Layout section?

## USER INTERFACE

The Window Manager utility changed your windows' border, and this utility will change the inside parts of a window: font, sliders, tabs and so on. Under the Theme section, there are a vast selection of choices; I like SphereCrystal. If you want to change the font, there is a button for that on the right. For my own environment, I use agua for my window manager, SphereCrystal for the user interface theme and the Sans font at size 10 (Figure 3). There are hundreds of combinations when it comes to looks, and it's well worth experimenting.

## ADDING DESKTOP ICONS

Adding desktop icons is fairly easy, but beware, as Xfce wasn't designed around having them, you will lose your right- and middle-click menus. First, in the Desktop folder in your home directory, make a new folder called Autostart (keep the correct capitalization). With your favourite text editor, make a new file in

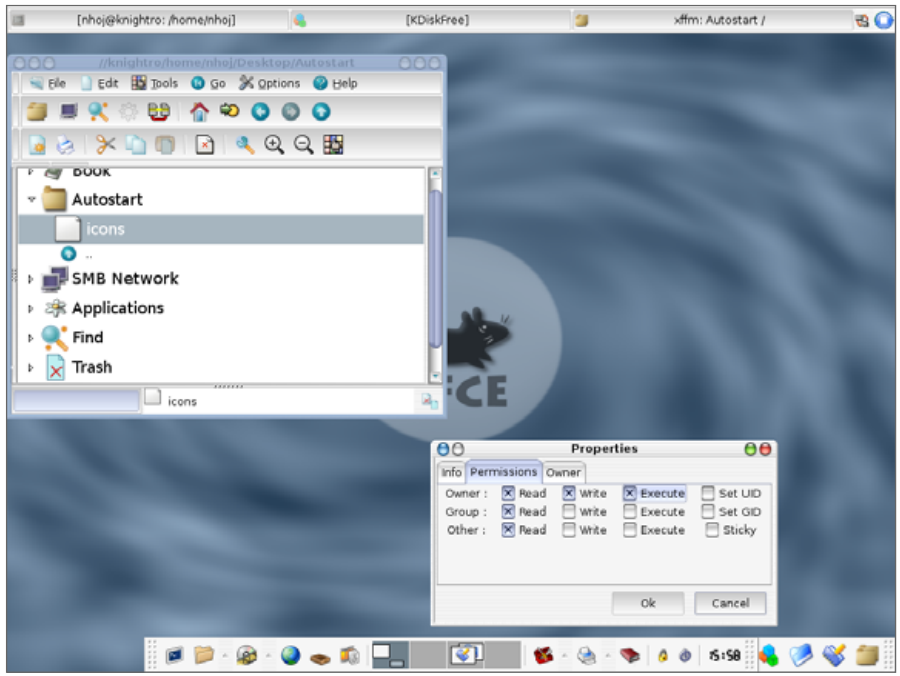


**Figure 4. Making the icons file executable, using the lightweight Xffm file manager.**

the Autostart directory (we'll call it icons for this, but call it whatever you like). Enter your desktop icon choice in the file and save it.

Desktop icon choices:

- KDE users: `kdesktop`
- GNOME users: `nautilus -n`
- DFM users: `dfm`

The icons file now has to be made executable. If you're using Konqueror, right-click and choose Properties. Click on the Permissions tab, and check the Is executable box. Under Nautilus and Xffm (Xfce's default file manager), do the same, but in the Permissions tab, check the Execute box in the Owner section.

## COOL FEATURES

Xfce acts not only as a replacement for bigger desktops, but it has plenty of unique touches of its own. See that printer button on the panel? Simply drag a file onto it, and it prints! (Note, this works only with Nautilus and Xffm, not Konqueror.) For users who frequently use multidesktops, switching between them is easy. Aside from clicking on each space, you also can use the keyboard or the mouse wheel. Hover your mouse over the desktop pager, roll your mouse wheel in either direction and you will flit between them. If you want to use your keyboard for this, press Ctrl-Alt-left/right arrow.

If you click on the icons in the pager, you can actually drag them to other desktops from within the pager itself. For the ultimate control freak, you can even change around the buttons on your windows' title bar. As you may have noticed in the Window Manager utility, here you can choose which buttons are visible and invisible, and even what order they're in.

As you can see, Xfce isn't only a lightweight window manager, it is becoming a full-blown rival for GNOME and KDE. Xfce contains innovations unique to itself and doesn't suffer from the same legacies that GNOME and KDE have, allowing for a fresh new environment. The speed increase is quite noticeable for users of 3-D games and video applications; rendering was much faster than under KDE, especially with 3-D screensavers. It may be a put-off if you're desperate for desktop icons, and losing the desktop menu if you do, but this desktop is gaining seriously popularity and for good reasons. We've barely touched the features in this desktop, and ultimately the best way to learn your way around is to explore and have fun.

## FINAL NOTE

A package called Rox is now becoming the standard for desktop file managers with lightweight desktops, and usually gets around the pesky right-click problem. Unfortunately, it has problems with Xfce, due to Rox conflicting with another program, xfdesktop. If you still want to use Rox with Xfce or another lightweight window manager, try this command:

```
$ rox --pinboard=Default &
```

Keep your eyes open for Rox in future installments of this series.■

John Knight is a 21-year-old, rock-climbing, Japan-loving megalomaniac, trying to take over the world from his bedroom via his keyboard. He spends most of his time tinkering with MPlayer and headbanging to his MP3s.

# BasKet Tutorial

**How to use a nifty tool called BasKet to organize all the data you normally find impossible to track down.**

RYAN PAUL

Organization is no trivial task. How does one keep track of the myriad figures, facts and files that seem to fill our digital lives? As a journalist, I tend to accumulate information. With more than a thousand Web pages in my browser bookmarks, I can almost never find what I need. I often drop quotations and URLs in temporary files so I have them for future articles. Over time, the number of temporary files has become obscene, and I can no longer scrounge up the data I require in a timely manner.

A number of excellent, open-source data management utilities are available for Linux. Many of you are probably familiar with Tomboy, a handy note-taking application for GNOME. Tomboy simplifies information control, but its GNOME bias and awkward spatial interface make it a poor choice for KDE users. When I use KDE, I rely upon BasKet, a versatile data management tool with a great interface and lots of nifty features. If you need a better way to keep track of notes, images, URLs, files, folders and applications on your KDE desktop, BasKet is the tool for you.

## ADDING CONTENT

BasKet enables users to deposit data snippets in individual containers, aptly called baskets. The application displays the contents of each basket in an associated tab within the interface. Users can drag or paste existing objects into the baskets or create new objects for direct insertion.

The first time you start BasKet, you will see a default, empty basket tab for clips and notes. Let's add an object and see what happens. Fire up Firefox and navigate to your favorite Web site. Click the icon that appears to the left of the URL, and drag it into the white space of the BasKet window. When you let go of the mouse, a link to the URL appears in the list. When you click that link, the page launches in your default browser.

Now, let's try to add some text from the page. Highlight a paragraph of text, then drag the highlighted content to the BasKet window. As you hover over the drop space, you will notice that a line appears inside the window. That line indicates where the object will appear in the list when the mouse button is released. You can use this feature to ensure that the new item is placed in the appropriate position within your list. Drag down and make sure that the line appears below the URL, and then let go of the mouse button to add the text to the bottom your list.

Now, let's use the KDE file manager to add a few extra items to our list. Launch Konqueror and navigate to an image file. Drag the file from Konqueror into the BasKet list. When you release the mouse button, BasKet presents you with a context menu that asks whether you want to Copy, Link or Move the file. If you select Copy or Move, BasKet copies or moves the file to its own internal data storage location and displays the image in the list. If you select Link, BasKet adds a link to the file's URI to the list, but it does not display the actual image. In this case, select Copy. You also can use the BasKet system tray icon to add items to the list. Drop a directory from Konqueror onto the BasKet tray icon, and select Link from the drop-down context menu. You should now see a link to the directory in your basket.

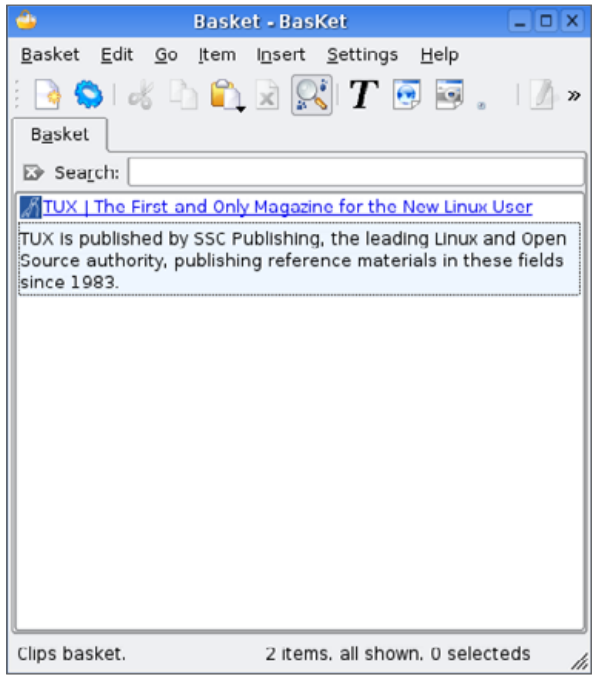


Figure 1. A Basket That Contains a URL and Some Page Text

It is also possible to create new list items with the Insert menu. Select Import KMenu Launcher from the Insert menu to launch the application selection dialog. Use the dialog to select an


Figure 2. Adding an Image and a Directory Link to the Basket

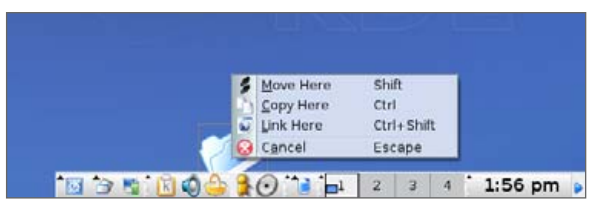


Figure 3. Using the BasKet Tray Icon to Add a Directory Link

application that you use regularly, and then click OK to add an application launcher to your basket. You can experiment with other types of items available on the Insert menu to learn more about what they are and how they work.

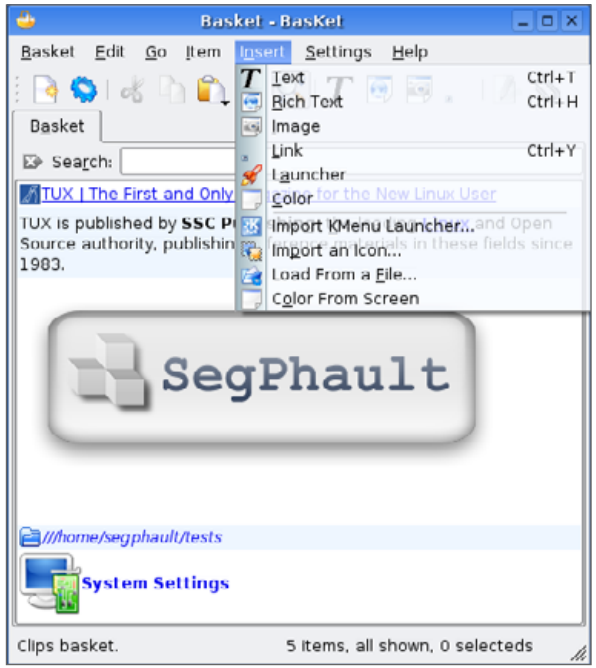


Figure 4. The Insert Menu

## EDITING AND ANNOTATION

BasKet also facilitates editing and annotation. Let's change the text snippet we grabbed from the Web site. Right-click the text snippet and select Edit from the context menu. The formatting toolbar appears above the basket tab, and the text becomes editable. Change some of the font colors and add some extra text to the end of the snippet. When you are done, click outside of the text snippet to leave Edit mode. The Edit behavior is slightly different for other kinds of content. If you right-click the URL link and select Edit from the context menu, BasKet launches the Link Item Properties dialog, which allows you to specify the URL, title and icon of the link.

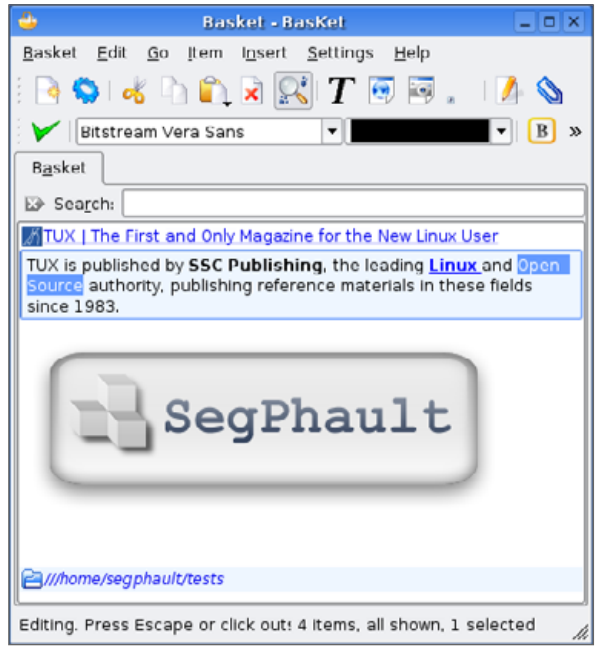


Figure 5. Editing a Text Snippet

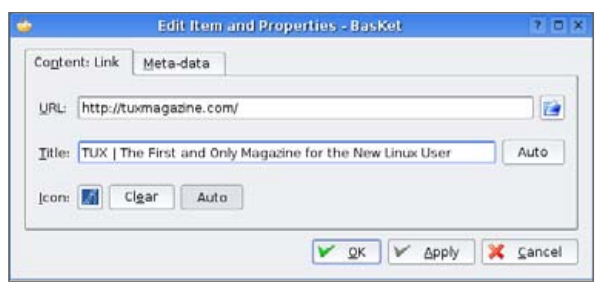


Figure 6. The Link Item Properties Dialog

Now we will add an annotation. Right-click the text snippet and select Edit Meta-data from the context menu to launch the Meta-data dialog. Type a sentence or two into the Annotations text

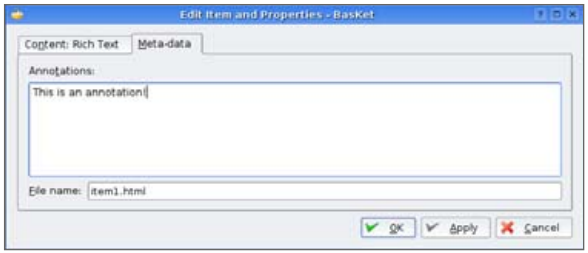


Figure 7. The Annotation Dialog

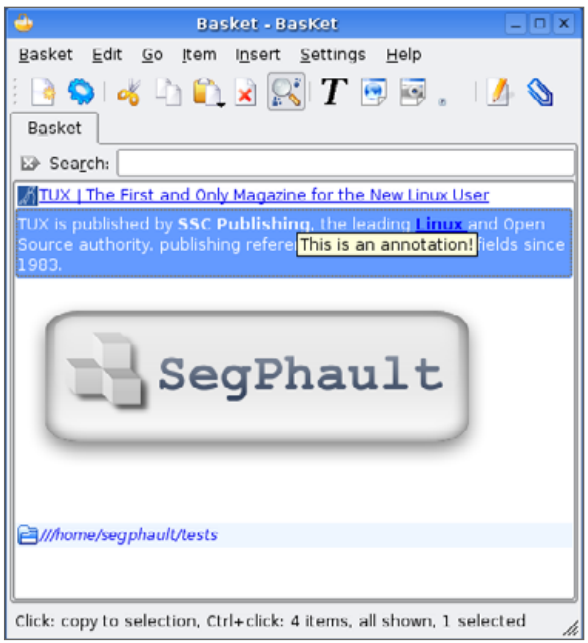


Figure 8. An Annotation Tooltip

box and click OK. Now when you hover the cursor over that list item, the annotation appears as a tooltip. You can use annotations to associate notes with various snippets to help you remember the significance of the content. Some list items come with annotations by default. The image that you copied from Konqueror, for instance, contains the URI of the original file in its annotation.

## CREATING A NEW BASKET

With only one tab, it won't be long before our list starts to look cluttered. Perhaps we should add extra baskets. Select New from the Basket menu to initiate the New Basket Wizard. The first step of the wizard requires that you indicate the type of basket you want to create. Your current default basket uses the Notes and Clips model, which is ideal for generic data storage. The Check List basket model associates a check box with each item in the list. The Stack model is just like the Notes and Clips model, but when a stack basket is active, the BasKet tray icon can be used to access the item most recently added to the list. The Clipboard Manager basket model is like a stack basket, but it intercepts and duplicates content sent to the clipboard via copy operations, so whenever you copy content in any KDE application, that content is also automatically added to your clipboard baskets. In the New Basket Wizard dialog, select the a basket model, and click Next. The second page of the wizard asks you specify a name for the new basket. Enter a name and then click the Finish button to complete the construction of a new basket. You can experiment with various basket models to learn more about how they work.

## SETTINGS AND PROPERTIES

Select Properties from the basket menu to alter the settings of the active basket. The Basket Properties dialog window has four tabs that provide an assortment of options for basket customization. The Properties tab allows you to alter the name, icon, alignment and background colors of the list, and it also lets you add check boxes. The Add Item Policy tab allows you to customize


Figure 9. The New Basket Wizard


Figure 10. Basket Properties

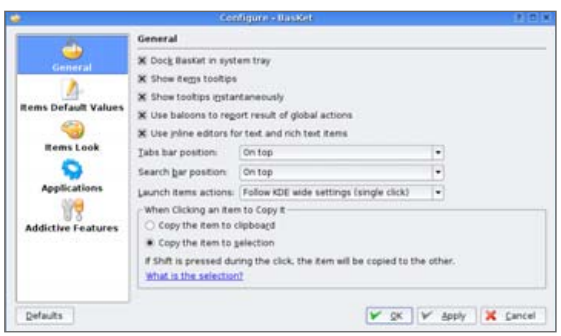


Figure 11. The BasKet Settings Dialog

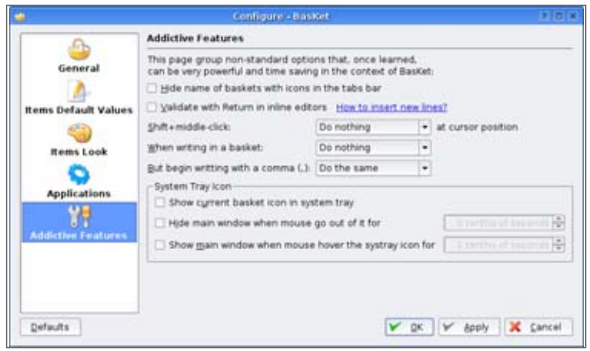


Figure 12. BasKet's Advanced Options

the default placement of new list items, the Click Actions tab lets you customize the actions associated with clicking list items, and the Stack tab allows you to enable stack mode for the active basket and control various stack-related options.

Select Configure BasKet from the the Settings menu to launch the global settings dialog. The settings dialog allows you to customize the system tray, the BasKet window layout, the copying behavior, default list item appearance, external applications associated with list item behaviors and an assortment of interesting, nonstandard options that make BasKet more useful but less user-friendly.

## SEARCH AND ORGANIZATION

When your baskets start to get full, it can become difficult to find specific items. With BasKet's integrated search functionality, your content never gets lost in the shuffle. If the BasKet search bar isn't visible, select Show Search Bar from the Edit menu to enable it. When you type some text inside the search box, BasKet filters your list and displays only the elements that contain the search phrase either in the content or in the annotations.

With proper organization, you can further

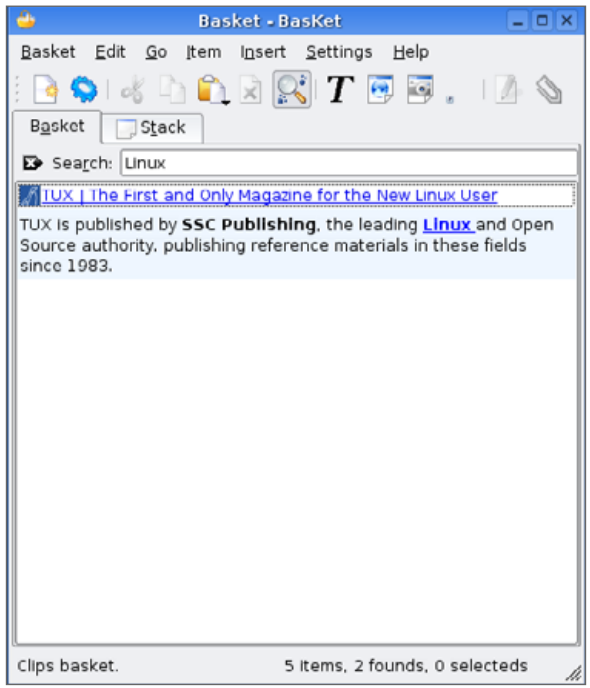


Figure 13. The Integrated Search Feature

improve your ability to find items at a glance. BasKet allows you to reposition list items and tabs. To move a list item, simply click it, hold down the mouse button and drag. Tabs can be moved the same way. Move around your basket tabs and list items to find a layout that is convenient and helpful for you.

## CONCLUSION

Now you know how to use BasKet to manage your data. There are a few interesting features that you may want to explore on your own, particularly the options available in the Addictive Features section of the settings dialog. According to BasKet developer Bastien Laot, future versions will include visually appealing usability enhance-

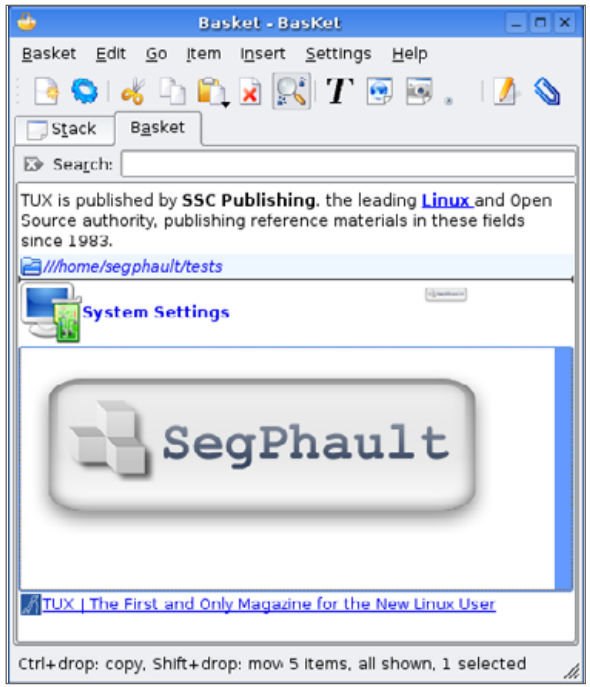


Figure 14. Moving Basket List Items

ments, much needed support for hierarchical basket management and better export functionality.

BasKet is distributed under the GPL license and can be acquired at no cost from the BasKet Web site. Binary packages are available for most major Linux distributions and FreeBSD. For downloads and more information, please see the BasKet Web site: http://basket.kde.org.■

Ryan Paul is a systems administrator, a freelance writer and an ardent proponent of open-source technology. He welcomes your questions and comments. Ryan can be contacted at segphault@sbcglobal.net.

# Wireless Networking with ndiswrapper

**How to use ndiswrapper to set up network cards normally unsupported by Linux.**

JES HALL

Wireless cards can be quite a bit of trouble for Linux users. Very few manufacturers have any interest in writing Linux drivers or releasing information about their cards so other people can use this information to write Linux drivers. There is a small selection of Linux-compatible Wi-Fi (wireless networking) cards, but they tend to be rather expensive. Worse, you don't get very much choice about which wireless networking chipset is built-in when you buy a laptop.

ndiswrapper is a project that provides a kernel module to load Windows NDIS wireless card drivers under Linux. NDIS stands for Network Driver Interface Specification and is the Windows/DOS driver interface. The ndiswrapper module wraps around this driver, acting as a translator between it and the Linux kernel.

You can use ndiswrapper to get a great deal of cards working that don't have a native Linux driver. There is a lot of information on the ndiswrapper wiki (discussion site) about various card and driver combinations that work well, but it often works with other cards too. There is no guarantee it will work perfectly with your card, however. Although ndiswrapper has become many orders of magnitude more stable over time, it still can very rarely crash or lock up your Linux system. You can visit the ndiswrapper wiki at http://ndiswrapper.sourceforge.net/mediawiki/index.php/Main_Page.

Installing ndiswrapper is not for point-and-click users. It requires using the command line and being able to locate drivers and specialised instructions for your card. If this sounds like something you'd have difficulty doing, ask a geek to help. Your local Linux Users Group is a great place to find a friendly Linux guru who can help you with this.

## INSTALLING NDISWRAPPER

Many Linux distributions have binary packages for ndiswrapper. Use the package updating tool for your distribution to make sure you have the latest version available installed. Some distributions separate out the driver and the command-line tools into two packages, so check to make sure that you have ndiswrapper-utils or any similarly named package installed if typing `ndiswrapper` at the command line as root results in `command not found`.

## IDENTIFYING YOUR CARD

To install and set up ndiswrapper, you need to know the chipset of your wireless card and find a suitable Windows driver to use. Then, you need to install ndiswrapper either from a package or by compiling the sources.

The chipset of your card differs from the brand or model. It refers to the actual chips inside the card that control its function. So a planet-, belkin- or genius-branded card could all have the same chipset and be able to use the same driver. Some manufacturers even have been known to use different

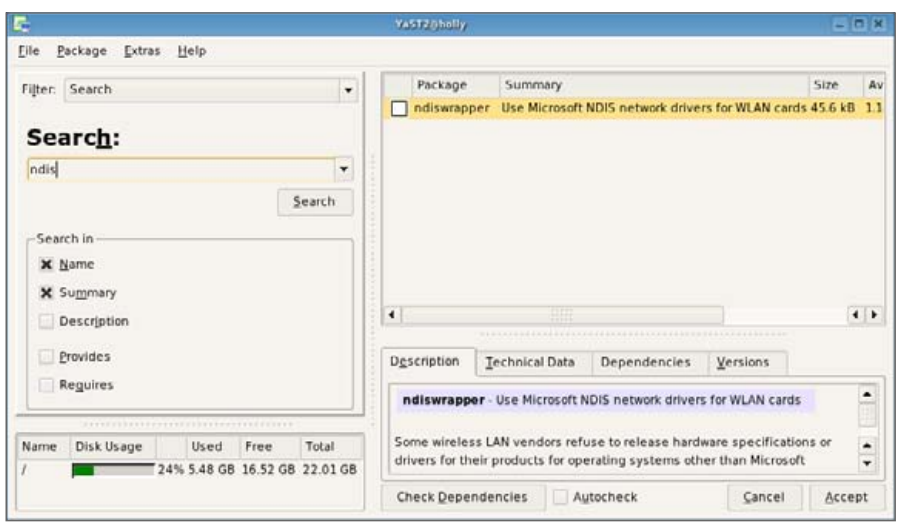


Figure 1. Installing ndiswrapper

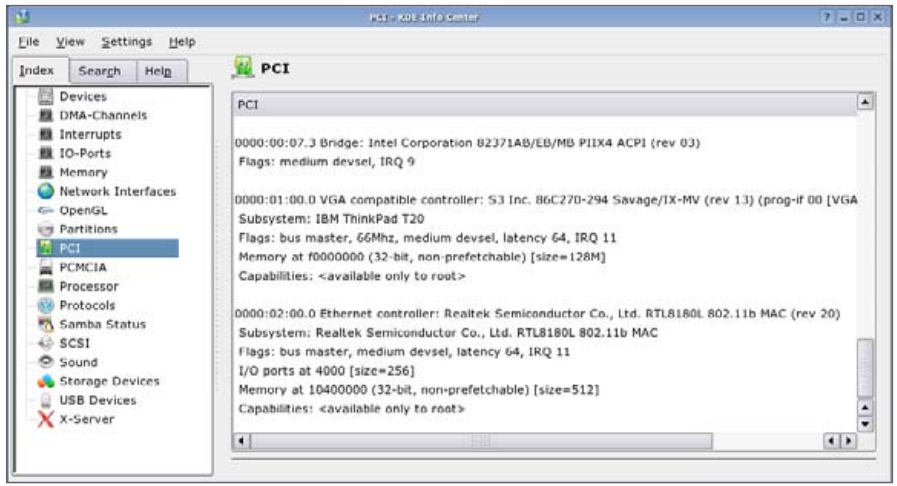


Figure 2. The KDE Info Center

chipsets in cards with the same model number.

As shown in Figure 2, I'm using the KDE Info Center (kinfocenter) to get information about my devices. Your wireless card should show up under the PCI section, regardless of whether it's built-in to your computer or is a PCMCIA card. The last item in the list in Figure 2 is my wireless card. According to this, it has a Realtek chipset, model 8180l, revision 20. This is a little cryptic, but all we need to do with this information is match it up to a driver that works with ndiswrapper.

If you don't have a graphical tool like the KDE Info Center at your disposal, you can get the same information from the command line using the command `lspci`. If your shell tells you the command is not found, try specifying the full path—often `/sbin/lspci`.

Armed with the knowledge of what chipset your card is, the next port of call is the ndiswrapper wiki's card list: http://ndiswrapper.sourceforge.net/mediawiki/index.php/List.

## FIND THE DRIVER

In some cases, you may have the original Windows driver disk. You can use this disk instead of downloading a driver, although you're likely to get a more recent driver if you download one. The ndiswrapper wiki page says that most people have had success using the Windows XP driver from the chipset manufacturer's Web site, http://realtek.com.tw. Once you've located a driver for your card, copy it from your driver CD/floppy or download it to disk and extract it.

If your driver is in the form of a Windows self-extracting zip file with a .EXE extension, it's possible that Linux `unzip` can still extract it. Try using `unzip file.exe` from the command line. Locate the driver installation instructions file. It will have the extension INF. If there is more than one of these files, the ndiswrapper wiki will often point you to which one you should use.

This step requires some command-line use. Open up a terminal and change to the directory containing your drivers. If you use Konqueror as your file manager, you can bring up a terminal in the directory you're already in by using Window→Open Terminal Emulator. This lets you see a graphical representation of the current directory in the top pane, and use the command line in the bottom pane. You need root privileges for this step. Either use the `su -` command to change to the root user, or if you have your system set up for it, use `sudo`.

```
# ndiswrapper -i filename.INF
```

This causes ndiswrapper to create a configuration directory in /etc to hold the driver file and configuration pertaining to the driver and install the driver to it. Now if you issue the command:

```
# ndiswrapper -l
```

you should see something like the following:

```
dessa@holly:~> /usr/sbin/ndiswrapper -l
net8180          driver present, hardware present
```

To load the module, type `modprobe ndiswrapper` as the root user. To set up the ndiswrapper module to be loaded on boot, type:

```
# ndiswrapper -m
```

This writes out a line in a system configuration file—usually /etc/modprobe.conf—to tell the system that your wireless card uses the ndiswrapper driver.

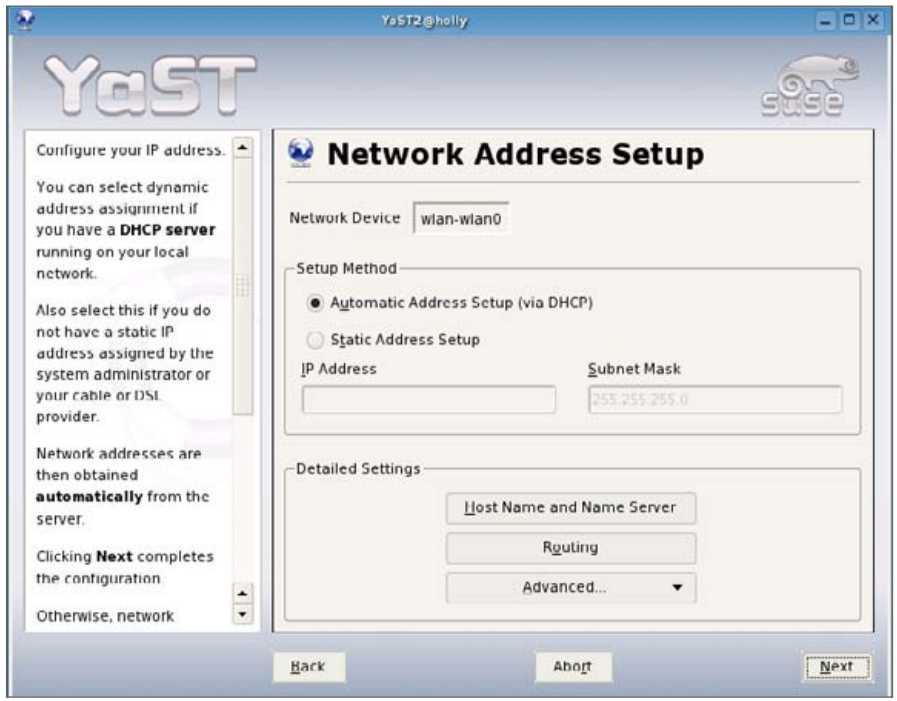


Figure 3. One Step in Setting Up Networking

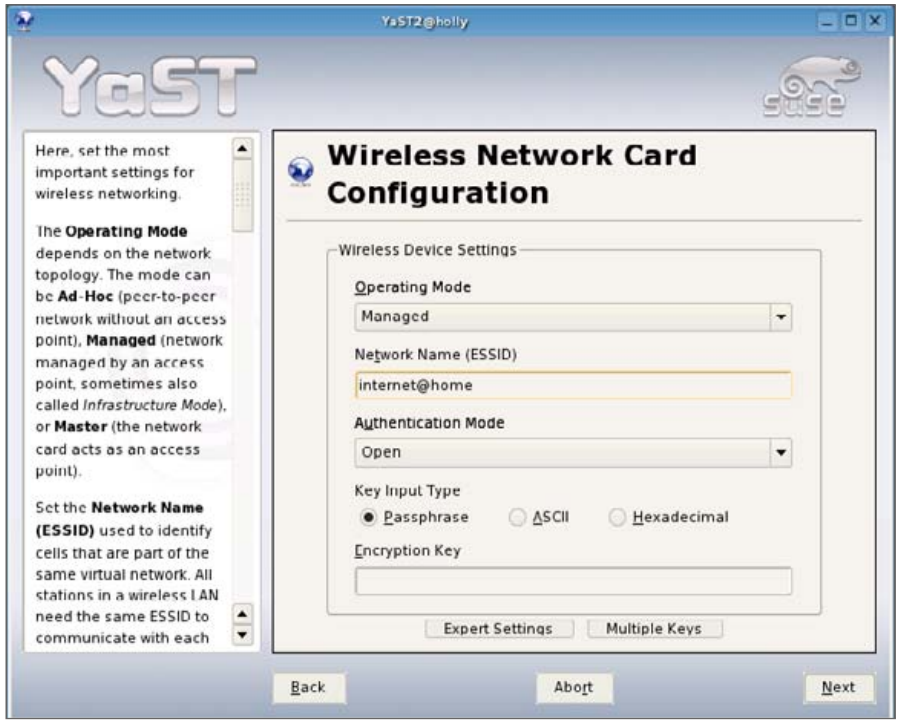


Figure 4. Another Step in Setting Up Networking

## SET UP NETWORKING

Now that you have ndiswrapper installed and a driver for your card, you should be able to set it up using the networking tools that come with your distribution. Here, I'm using SUSE 9.3, but these settings would apply no matter what distribution I'm using.

The ndiswrapper device is called wlan0, which means the first wireless networking device on the system. If the `ndiswrapper -m` step completed correctly, your system knows that the wlan0 device and the ndiswrapper driver are supposed to go together.

Generally, if you have a wireless access point set up, you'd enable getting an IP address assigned via DHCP. If you were going to use a static IP (one you specify, rather than one assigned to you by your wireless router), you'd specify it here. I'm also adding in the ESSID, which is the name of the access point to which I want to connect. If your access point is using encryption, and you have to specify a WEP key, this is the place to do so. It might require trying a few different options until you find the settings that work best with your particular card. If you have any difficulties here, referring back to the ndiswrapper wiki can give you hints about specific options required for your card.

## POTENTIAL PROBLEMS

It's very difficult to describe a method that will work on every possible Linux distribution. What if these instructions don't work for you? A few minutes spent in troubleshooting and gathering information makes it much more likely that you'll find some help. Your first port of call should always be

Google. Try to search for "ndiswrapper SUSE", replacing SUSE with the name of your distribution.

1) Check that the module is loaded: open up a terminal and type in `lsmod`. This shows you a list of the currently loaded driver modules. Does ndiswrapper appear in this list? If it doesn't, try typing `modprobe ndiswrapper` and make a note of any errors. No output at all means the module loaded fine.

2) Check that the card is associating with an access point: open up a terminal and type `iwconfig` as root. You should see some output something like this:

```
wlan0     IEEE 802.11b  ESSID:"internet@home"  Nickname:"holly"
          Mode:Managed  Frequency:2.437 GHz  Access Point: 00:12:17:3A:51:E5
          Bit Rate=11 Mb/s   Tx-Power:20 dBm   Sensitivity=0/3
          RTS thr=2432 B   Fragment thr=2432 B
          Encryption key:off
          Power Management:off
          Link Quality:100/100  Signal level:-72 dBm  Noise level:-256 dBm
          Rx invalid nwid:0  Rx invalid crypt:0  Rx invalid frag:0
          Tx excessive retries:0  Invalid misc:0   Missed beacon:0
```

If the part after ESSID reads `off/any` and the part after Access Point is full of `0`s, try manually associating. Type `iwconfig wlan0 essid` *`Name of your access point here`*, and see if the lights on your card light up.

3) Check that the card has a valid IP address: open up a terminal and type `ifconfig` as the root user. Look for the section that says `inet addr` under the wlan0 section. Do you have a valid IP address there, on the right subnet for your network? If so, try to ping some things on your home network. Try to ping your wireless access point or any other computers to figure out if you have any connectivity at all.

4) Check your default route: open up a terminal and type `route -n` as the root user. Do you have a line that starts with `0.0.0.0`? Under the Gateway column, does it show you the address of your router?

5) Check your DNS: if you can ping local machines by their IP addresses, but you cannot see sites on the Web, it's possible you don't have correct settings for DNS.

If you need to ask for help on forums or mailing lists, listing the results of these steps will make it much easier for people to help you.■

## ADVENTUROUS USERS ONLY!

**So, what do you do if your Linux distribution doesn't ship ndiswrapper binaries?**

**Installing ndiswrapper from sources is always an option if you know your way around a terminal. To do this, you need to have the kernel sources installed and the development packages for your distribution that include the GNU C Compiler and other tools required to compile software. Remember, think twice before you press Enter if you're using the terminal with root permissions.**

**Download the ndiswrapper sources from the http://ndiswrapper.sourceforge.net downloads page. Either extract the sources with ark or file-roller or from the command line with:**

```
# tar xjf ndiswrapper-$version.tar.bz2
```

**Replace `$version` with the version of ndiswrapper you've downloaded. Hint: the terminal can complete commands and filenames for you. Try typing in `ndis` and then press the Tab key.**

**Change into the directory you've just extracted:**

```
# cd ndiswrapper-$version
```

**Inside this directory are two files you should at least skim through: INSTALL and README. To compile and install ndiswrapper, issue the command as root:**

```
# make install
```

Jes Hall is a UNIX systems consultant and KDE developer from New Zealand. She's passionate about helping open-source software bring life-changing information and tools to those who would otherwise not have them.

# Give Multiple Distros the Boot

**How to boot multiple Linux distributions.**

NICHOLAS PETRELEY

Based on the mail we get, it seems as though there are countless *TUX* readers who are not content to settle on a single Linux distribution. They want to be able to install more than one distribution and choose which one to start at boot time.

Despite the fact that *TUX* normally assumes you are no more than desktop literate, you will need a little more than average technical knowledge to follow this article. You need to know how to create, manage and format disk partitions. You may also need to know how to install a new hard drive. Most computers use hard drives called IDE drives (often referred to by many other names, such as ATA drives and so on). If you are going to add a new drive to your system, you may need to know how to change jumpers on the drives to make one a master and another a slave. At the very least, you need to know how to deal with the order of drives in your system; which comes first, second, third and so forth. If these terms or concepts confuse you, you probably are not going to get much out of this article, and it would be wise to skip it.

## LINUX DOES IT

One advantage to Linux over operating systems like Windows is that (within occasional limits imposed by old hardware) you can boot Linux from virtually any disk drive on your system, and even boot Linux from an extended partition instead of a primary partition.

The latter capability is important if you want to put more than four versions of Linux (or four operating systems, some of which are Linux) on a single drive. You can boot only what is called a primary partition, and you can put only four primary partitions on a single drive.

You can create up to three primary partitions and one very large extension on a single drive. You can slice up the extension into many extended partitions. You can install as many versions of Linux as you want on any of these extended partitions. The only problem is that you cannot make any of these extended partitions bootable.

Yes, you can boot a copy of Linux that is installed on an extended partition, but you cannot do so directly. You have to start the boot process from a primary bootable partition, and then let it continue from the extended partition.

There are some half-baked workarounds to allow you to boot Linux from extended partitions. For example, you can install Linux on extended partitions and create one or more /boot partitions as primary partitions. This works, but this approach is needlessly complex if you want to boot more than three versions of Linux. Three versions of Linux should be more than enough for most people, but considering how cheap 160-gigabyte drives are these days, it would be nice to be able to install as many operating systems, including as many versions of Linux as you want, on a single drive and boot any of them at any time.

## THE CHALLENGE

So, here is our goal. We want to install several operating systems on a single drive. We want to install several complete copies of Linux on extended partitions. We don't want to break up these installations so that they rely on separate /boot partitions in order to make them work.

There are several ways to reach this goal. What follows is one technique that I have used with great success.

## THE SOLUTION: GRUB

Before you get started, here's an essential point to consider. Most Linux distributions include at least two boot loaders (programs that start up Linux), LILO and GRUB. This particular multiboot strategy depends entirely upon the GRUB boot loader in order to work. If you choose a distribution that does not support GRUB as a boot loader, it is going to be difficult or impossible to get that distribution working. Almost every distribution available supports GRUB, so this is generally not a problem. But it is not unheard of for a distribution to depend upon LILO (or worse, a customized version of LILO) in order to boot properly. Although it is sometimes possible to find workarounds to make these distributions boot, it is way beyond the scope of this article to deal with the excep-

tions. So stick with distributions that include and support GRUB as the boot loader. Here is a tiny sample of distributions that work fine using this multiboot strategy (many others work fine too):

- Fedora
- SUSE
- Mandriva
- Debian
- Linspire
- Ubuntu/Kubuntu
- Knoppix/Gnoppix
- Mepis
- Slackware

Here is why you need GRUB. You are going to create a small partition as the first partition on your boot drive, and install a copy of GRUB there.

Now you are going to install several distributions, each with their own /boot directory, and each with their own /boot/grub directory. Each distribution will have and maintain its own GRUB boot menu list, and each distribution will maintain this copy of GRUB on its own. For example, when a distribution updates a kernel, it will modify or add an entry to its boot options list. That's fine. That's what we want.

Each time a Linux distribution adds its own boot entry to its own GRUB menu, you are going to copy that menu entry and add it to a centrally controlled menu list in the small boot partition where you have your "universal" copy of GRUB.

The only challenge we face is that when you install a Linux distribution, or when a Linux distribution update changes the Linux kernel, it makes its own /boot/grub directory the place to boot. You have to copy the update to your centrally controlled menu list and then override the boot setting to make your first partition the active one for GRUB to use. Fortunately, once you install all the distributions of Linux you want, changes to the kernel and GRUB boot menu are fairly rare.

The end result is that you will have a single boot partition at the beginning of the first hard drive that includes a menu entry for every version of Linux on the system. It won't matter whether your versions of Linux are installed on primary or secondary partitions. It will simply work. Confused? I hope you won't be when you're done.

## CONCEPTS AND FACTS

I give many specifics in this tutorial, but I hope most of you learn the concepts behind the techniques I use in this article, not just the mechanical steps. Some of you already have one version of Linux installed. Some of you have Windows installed, but not Linux. Some of you are more technically competent than others. Each of you are going to have to approach this problem a little differently, so unless you grasp the concept of the approach, you may end up with an unusable system that is difficult to recover to a working state.

The first concept you need to master is the fact that GRUB refers to disks and partitions starting with the number zero. The first IDE drive /dev/hda is (hd0). The first partition on the first IDE drive (/dev/hda1) is (hd0,0). The second partition, /dev/hda2, is (hd0,1). Things get really confusing if you place a CD/DVD drive in between two hard drives, but for the sake of this article, we assume you will always make your CD/DVD drive the last drive on your system.

## STARTING ASSUMPTIONS

For the purpose of simplicity, we assume your situation fits into one of these typical scenarios:

1. You have a single hard drive in your computer, and that hard drive has Windows and only Windows installed. You intend to purchase another drive in order to install multiple copies of Linux.

2. You have a single hard drive in your computer and that hard drive has Linux and only Linux installed. You intend to purchase another drive to install more copies of Linux.

3. You are going to wipe your first drive clean and start fresh.

The following instructions for setting up a multiboot system should work extremely well for any of the three above scenarios. Most other scenarios require that you move and resize your existing disk partitions, and that would require a tutorial all its own. If you already know how to resize and move your existing partitions, you still can use the following information to create a system that boots multiple Linux distributions.

If you are adding a new drive to your system, I recommend that you add the new drive as your primary drive, and move your existing drive to be drive number two. Drives are practically dirt cheap these days, especially IDE drives. So if you're going to do this right, get a nice big drive such as an 80-gigabyte drive, 160-gigabyte drive or better.

It doesn't matter if your existing first drive has

Windows or Linux installed on it. If your existing drive has Linux installed on it, you actually have to do a bit more work than if it has Windows on it, but we'll deal with that issue near the end of the article.

### STEP ONE

If you are using IDE drives, the first thing you have to do is make sure your drives are configured properly. If you are simply going to wipe the first drive clean and start fresh, and you're not changing or adding drives, you have nothing to worry about. If you are going to add an IDE drive to an IDE-based system, you need to make sure all the jumpers on your drives are set properly. Since we're assuming you're adding the new drive as your first drive, make sure the jumpers on the new drive are set to make it a master drive. Then adjust the remaining drives on your system to compensate for this change. For example, if you moved your first drive to become the second drive, you need to change the jumpers on that drive to make it a slave drive.

### STEP ONE AND A HALF

Whether or not you are adding a drive or wiping your existing drive clean, your first step is to install a distribution of Linux. The trick to making it simple to boot multiple distributions from this drive is to partition it a certain way when you install your first Linux distribution.

IMPORTANT NOTE: no matter what distribution you choose as your starting point, make sure ahead of time that this distribution includes and supports the GRUB boot loader. As mentioned above, this entire strategy depends upon GRUB in order to work.

When you get to the installation step that requires you to partition your hard drive, be sure to follow these steps carefully, making appropriate adjustments according to your desires and needs:

1. Use the advanced installation option when installing Linux so that you can control disk partitions.

2. Create a small, unformatted partition as the first (primary) partition on your drive. I created mine to be 100 megabytes. This is actually massive overkill for the multiboot technique to work, but when you're dealing with 80–160-gigabyte drives, 100 megabytes is small change. The operative word here is *unformatted*. Yes, you can format this partition, but if you do so, the installer will be tempted to use it. You do not want the installer to use this partition.

3. Finish partitioning the drive with plans to install multiple distributions.

4. Do not forget to create a swap partition.

Here are two examples of how you might partition the first drive. With the exception of the first partition, these are only examples to give you an idea of how to proceed.

### EXAMPLE 1: PUTTING THE SWAP PARTITION UP FRONT

- Primary partition 1: 100MB unformatted
- Primary partition 2: 2GB swap partition
- Primary partition 3: 20GB Linux partition
- Partition 4: extended partition, using the remaining space of the drive
- Partition 5: 20GB unformatted partition in extended space for later use
- Partition 6: 20GB unformatted partition in extended space for later use
- ...etc...

### EXAMPLE 2: PUTTING THE SWAP PARTITION AT THE END OF THE DRIVE

- Primary partition 1: 100MB unformatted
- Primary partition 2: 20GB Linux partition
- Primary partition 3: 20GB unformatted partition in extended space for later use
- Partition 4: extended partition, using the remaining space of the drive
- Partition 5: 20GB unformatted partition in extended space for later use
- Partition 6: 20GB unformatted partition in extended space for later use
- ...etc...
- Last partition: 2GB swap partition

### STEP TWO

Finish installing your Linux distribution on the second partition. Make this partition the / (root) partition, and do not create a separate /boot partition.

### STEP THREE

Choose GRUB as your boot loader. Allow GRUB to

install itself on the master boot record of the first drive. Finish the installation.

### STEP FOUR

Boot in to your freshly installed distribution of Linux. Open up a console or terminal and log in as root.

Now you are going to format the first partition of the drive and create a GRUB boot configuration there. Here is an easy way to do that. From the root prompt, execute these commands (assuming you are using an IDE-based system, otherwise modify the commands to accommodate a SCSI-based system). I chose to format the partition as ext3. You don't have to do the same, but I recommend using either ext3 or ext2:

```
# cd /
# mkfs.ext3 /dev/hda1
# mkdir /mnt/boot
# mount -t ext3 /dev/hda1 /mnt/boot
# cp -a /boot/* /mnt/boot
```

You have just "primed" the partition we will use to boot all of the distributions of Linux you will install on this system. Admittedly, this is a quick-and-dirty way to get GRUB on the first partition. By bypassing the normal method of installation, you copied a few files you don't really need in this partition (the kernel doesn't need to be there, for example), but these files won't hurt anything. On the other hand, you end up with a perfect starting point by copying the GRUB configuration used by the first distribution you install.

Now we need to tell GRUB to boot from this configuration instead of the one that came with the distribution of Linux you installed. Do so with the following commands:

```
# grub
grub> root (hd0,0)

grub> setup (hd0)

grub> quit
```

Grub will print some responses to each of these commands (hopefully not any error messages). The next time you boot your system, it will use this partition for its instructions on what to boot and how.

### WHEN YOU REBOOT

You shouldn't notice any difference the first time you reboot your system, even though it is now booting from /dev/hda1 instead of /dev/hda2 (assuming you are using an IDE system). That is because GRUB is still using the same configuration it used when you installed your first version of Linux. You can confirm this by rebooting into Linux, going to a command prompt, logging in as root and typing the following commands:

```
# less /boot/grub/menu.lst
```

[Examine the contents and then press Esc to exit.]

```
# mount -t ext3 /dev/hda1 /mnt/boot
# less /mnt/boot/grub/menu.lst
```

[Examine the contents and then press Esc to exit.]

You should see that the two files are the same.

If you had started with Debian as your first Linux distribution, the first menu selection in both menu.lst files (the one in the original directory and the one you copied) might look something like this:

```
title           Debian GNU/Linux, kernel 2.6.11-1-k7
root            (hd0,1)
kernel          /boot/vmlinuz-2.6.11-1-k7 root=/dev/hda2 ro
initrd          /boot/initrd.img-2.6.11-1-k7
savedefault
boot
```

You are no longer using the menu.lst file or any other files in the /boot/grub directory to boot Linux. Nevertheless, do *not* erase the /boot/grub directory from the Linux partition. You want update programs to modify the files in this directory so that you can decide whether or not to copy the modifications to the configuration files in first partition on the disk that your system uses at boot time.

### STEP FIVE

Now install another distribution of Linux. For example, install SUSE. Once again, do not break it up into separate partitions (you can do so if you really know what you're doing, but we're keeping this simple). Assuming you placed your swap partition at the end of the disk, you will be installing this distribution to /dev/hda3 on an IDE system. Make /dev/hda3 the / (root) partition. Choose GRUB as your boot loader. Once again, allow GRUB to install itself to the master boot partition. (Astute readers might note that you can save time if you do not let GRUB install itself to the boot partition, but in my experience, some Linux installers will fail if they can't install GRUB there, and this process does not present an obstacle to our ultimate goals.)

Now boot your system. The new Linux you just installed may be the only option you have when you reboot. You may see an option for your previously installed version of Linux (some installation programs search your drives and add entries to its GRUB menu for other operating systems). But we're not going to rely on this capability. Instead, we're going to maintain our own boot selection list by continuing to use the one we copied to the first partition on this hard drive. This gives us complete control over which distributions we make available and how to boot them.

### STEP SIX

Boot to the newly installed Linux (SUSE, in this example). Open a console or terminal and log in as root. Mount our special boot partition:

```
# mkdir /mnt/boot
# mount -t ext3 /dev/hda1 /mnt/boot
```

The menu list in the first partition does not yet include the option to boot SUSE. We need to add it. This is easy to do, because SUSE already added a perfectly good menu selection in its own /boot/grub/menu.lst file.

Open these two files with your favorite editor: /boot/grub/menu.lst and /mnt/boot/grub/menu.lst. Find the menu entry in the new menu.lst that boots the SUSE Linux operating system (or whatever Linux distribution you installed). Copy it to your /mnt/boot/grub/menu.lst file as the second menu entry. For example, your /mnt/boot/grub/menu.lst file might now have entries that look like this:

```
title            Debian GNU/Linux, kernel 2.6.11-1-k7
root             (hd0,1)
kernel           /boot/vmlinuz-2.6.11-1-k7 root=/dev/hda2 ro
initrd           /boot/initrd.img-2.6.11-1-k7
savedefault
boot

title            SUSE LINUX 9.3
root             (hd0,2)
kernel           /boot/vmlinuz root=/dev/hda3 vga=0x31a selinux=0
splash=silent
initrd           /boot/initrd
```

Now you have to reset GRUB to boot from the first partition. Once again, here are instructions to do that:

```
# grub
grub> root (hd0,0)

grub> setup (hd0)

grub> quit
```

This resets the system to look in the first partition for the menu list of Linux distributions to boot.

### STEPS SEVEN, EIGHT AND SO FORTH

At this point, it's just wash, rinse, repeat. Install another distribution of Linux on the next partition. Let GRUB install itself to the master boot record during installation. Boot to the new version of Linux. Mount the first partition. Edit the menu.lst file on the first partition to include a menu selection for your newly installed Linux. Reset GRUB again to boot using the first partition. Rinse. Repeat.

### ADJUSTING YOUR LEGACY LINUX DRIVE

Let's assume that you had Linux installed on your first drive and moved it to become the second drive when you decided to undertake this project. You need to do two things to make your old distribution of Linux work again. First, you need to add an entry to your menu.lst file for your old distribution. Mount the partition with `mount -t ext3 /dev/hda1 /mnt/boot`, and then edit /mnt/boot/grub/menu.lst to add the menu selection for the distribution of Linux on the second drive. In this case, you cannot simply copy the entry from an existing menu.lst file, because it represents the location of the old hard drive before you added a new one. So, if you started out with Ubuntu Linux, you might see this entry in the original file:

```
title           Ubuntu, kernel 2.6.10-5-k7
root            (hd0,0)
kernel          /boot/vmlinuz-2.6.10-5-k7 root=/dev/hda1 ro quiet splash
initrd          /boot/initrd.img-2.6.10-5-k7
savedefault
boot
```

You need to change it to reflect the fact that Ubuntu is now on the second hard drive. For example, put this modified version in your /mnt/boot/grub/menu.lst file:

```
title           Ubuntu, kernel 2.6.10-5-k7
root            (hd1,0)
kernel          /boot/vmlinuz-2.6.10-5-k7 root=/dev/hdb1 ro quiet splash
initrd          /boot/initrd.img-2.6.10-5-k7
savedefault
boot
```

You also need to modify your /etc/fstab file to reflect any changes affected by moving your drives around. For example, you won't be able to boot Ubuntu on your second drive until you change the following line in its /etc/fstab file:

```
/dev/hda1 / reiserfs defaults 0 0
```

Now that Ubuntu lives on the second drive, the line should be changed to this:

```
/dev/hdb1 / reiserfs defaults 0 0
```

### BOOTING WINDOWS FROM A SECOND OR THIRD DRIVE

For the purpose of this example, let's assume that you are using IDE drives and you moved your old Windows drive from the first drive on your system to be the second drive in your system. Windows needs to think it is running from the first drive on your system in order to boot properly. GRUB can trick Windows into thinking it is running from the first drive. Add the following lines to your menu.lst file in order to add an entry that boots Windows:

```
title           Windows
map             (hd0) (hd1)
map             (hd1) (hd0)
rootnoverify    (hd1,0)
makeactive
chainloader +1
boot
```

The above entry tells your system to treat the second drive (hd1) as if it was the first drive (hd0). It also tells the system to treat the first drive (hd0) as the second drive (hd1). This tricks Windows into thinking it is running on the first drive on your system, even though your system is not configured physically that way. The remaining instructions simply tell GRUB how to boot Windows from its real location.

If you moved your Windows drive to be your third drive, make the logical adjustments to the entries in your menu.lst or grub.conf file. For example, the lines might look like this:

```
title           Windows
map             (hd0) (hd2)
map             (hd2) (hd0)
rootnoverify    (hd2,0)
makeactive
chainloader +1
boot
```

### ADDING ANOTHER LINUX DRIVE

Let's assume that you had only one drive, and you wiped it clean and started fresh.

Now that you have at least one drive in your system that boots multiple distributions of Linux, you may be wondering if you can add more drives to your system and install Linux on those drives. Yes, you can. If you add a drive to your system and install Linux distributions on it, simply use the technique described above, except don't bother creating that first small bootable partition. You don't need it on the second drive.

Each time you install a new distribution on a new partition on the second drive, allow the installation program to install GRUB as your boot loader, and continue to let it install itself to the master boot record of the first drive. Then make the adjustments as described in this tutorial (copy the menu selection and reset GRUB to use the first partition of the first drive and so on—rinse, repeat).

### ADDING A WINDOWS DRIVE

If you install another drive and want to install a fresh copy of Windows on it, that's a whole 'nother story. It is certainly possible to do this, but the amount of difficulty you have doing it will depend on several factors, mostly your motherboard and the BIOS that comes with your motherboard.

There are ways to install Windows on a second or third drive on your system without worrying about what will happen to your installation of GRUB on your first drive (at least it is possible on some systems). Don't bother to try it. Here's a much easier way to install Windows on a new drive.

Remove all the hard drives from your system, and install the new drive as the first drive on your system. Make sure you also have a working CD or DVD drive installed, connected and configured properly. If you are using an IDE system and have only the new drive and the CD/DVD drive installed, here is probably the simplest approach. Hook them both up on the same cable and make sure the jumpers on your hard drive are set to make it the master drive. Make sure the jumpers on your CD/DVD drive are set to make it the slave drive.

In many if not most cases, you may have to enter setup when you boot the computer (usually you press the Delete key at boot time, or press F1 if the boot process fails in order to get to the setup screens) and reconfigure your IDE drive settings to match your new combination hard drive and CD/DVD drive.

If nothing seems to be working, make sure the cable is connected to the primary IDE bus connector on your motherboard, not the secondary IDE bus connector.

Now install Windows as if it is the only operating system you will run on your computer.

Once you have Windows installed, patched and updated, and you have cleaned it of all the viruses it caught during the first 20 minutes of operation (just kidding—or maybe not), you are ready to move the drive to a new location. Rearrange all your drives the way you had them before, and add the Windows drive.

Be prepared to change the jumpers on drives if you are using an IDE-based system. (For the hard-core geeks out there, yes, we know it is possible to use cable select, but we're keeping this simple.) For example, if you had one drive on your system and added the new Windows drive as your second drive, you will need to change some jumpers. Change the jumpers on the Windows drive to make it a slave drive. Change the CD/DVD drive jumpers to make it a master drive. It is technically the third drive in your system, but it is the first master drive on your second IDE bus.

If you already had two hard drives on your system plus a CD/DVD drive and you are now adding a third drive for Windows, here's what you need to do. In this case, leave the jumpers on the Windows drive and CD/DVD drive alone. The Windows drive should still be the master drive, and the CD/DVD drive should be the slave. Simply unhook the cable from the primary IDE connector on the motherboard and insert it in the secondary IDE connector on the motherboard. Hook up your old drives, and you should be ready to go.

Once again, the next time you boot your system, you will almost definitely have to enter setup (usually by pressing the Delete key at boot time, or F1 if the boot process fails) and reconfigure your IDE settings to match the way you have your drives installed.

Now, all you have to do is the same thing we described above (see the "Booting Windows from a Second or Third Drive" section). Boot to one of your Linux distributions and use it to add lines to your menu.lst file to create a menu selection that maps the Windows drive properly and allows you to boot Windows from it.

The next time you boot your system, you should see an entry in your list called Windows. Select that entry and cross your fingers. If your motherboard and BIOS behave properly, you should see Windows boot up without any problems.

## MIXING IT UP

Can you use this technique to install a small partition on the first drive for your centrally located GRUB boot loader configuration, install Windows on the next partition and then install multiple versions of Linux on partitions beyond Windows? Theoretically, this should be possible. I haven't tried it. If I had Windows on the same drive as Linux, I would worry that magnetic bits with Windowsitis might jump from one partition to another and infect one or more copies of Linux. So, in order to prevent STD (sector-transmitted damage), I keep Windows isolated on its own drive. Call it practicing safe sectors.

Surely you know I jest about STDs and the potential for infection, but I do keep Windows on its own drive, nevertheless.

## POTENTIAL PROBLEM ONE

Partition labels: some distributions are now using partition labels instead of direct references to the partitions. For example, they label a partition ROOT and use the word ROOT in both the boot configuration file and the /etc/fstab file instead of referring to the partition directly as /dev/hda3 (or whatever it may be).

Suffice it to say this is a terrific approach if you are running only one distribution of Linux. It can cause havoc, however, if you are trying to install and boot multiple versions of Linux. I won't even begin to get into the problems you can encounter, and I can offer no easy cookie-cutter solutions. As Linux distributions evolve and use labels in different parts of the installation and boot process, this problem will remain a moving target.

The best advice I can imagine at this point is to try one of two things. First, try not to allow the Linux installer to create and use labels during installation. This may work, or it may prevent you from installing that distribution of Linux.

Alternatively, try to take control over the labels it creates instead of letting the installer use defaults. For example, instead of letting the installer use the label ROOT, force it to use FEDORA instead. Again, this may work or it may prevent the distribution from installing. I've managed to get around this problem with little difficulty so far. Your mileage may vary, especially because (as I said) distributions and installers are moving targets.

## POTENTIAL PROBLEM TWO

Sharing partitions: when you are running several versions of Linux, it is very tempting to force them all to share a partition or two. One of the biggest temptations is to create a separate partition for your home directory, and then make all your Linux distributions use this partition.

Don't even try it unless you really, really, really know what you are doing. Here are some of the problems you will have to solve. One distribution may assign your user and group ID to 1000 and 1000, respectively, and the next will assign 500 and 500. Now you have permission problems to iron out. One distribution may use KDE 3.3, another may use KDE 3.4, and still another a custom version of KDE. All may assume your KDE configuration files reside in the directory /home/username/.kde. You will experience problems using KDE on one, two or all three distributions if they share this directory.

I could go on and on. I have managed to share several directories across multiple distributions, including even all the Firefox browser configuration files. But it wasn't easy to do, it doesn't work for all distributions, and I make regular backups in anticipation of the day one of the distributions updates Firefox and makes these files incompatible with the other distributions.

## FINAL THOUGHT

The first question experienced users may ask may be, "Why not just put GRUB on a boot floppy instead of making a special partition on the first hard drive?" That's a good question, and you certainly can choose that option instead of the method I use. In fact, the floppy approach lets you omit all the times you have to reset GRUB to use the first partition on the first drive. You can set your computer's BIOS to boot from floppy first, and it doesn't matter how many Linux distributions modify the hard drive's master boot record. Your computer will ignore the changes and continue to boot happily from the floppy drive.

I don't have a floppy drive in my computer. Even if I did, I would not choose this option, because I am impatient. I'd rather not wait for a floppy to boot, because the hard drive is so much faster.

But the choice is yours. If you understand the concepts described above, it is very easy to find out how to create a GRUB boot floppy and translate the above technique into configuring the floppy to boot all the versions of Linux you have installed.■

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# Inkscape: the Elements of Design, Part II

**We wrap up the artistic concepts of the elements of design in preparation for our last article in the Inkscape series, which should give you practical instructions on how to create a useful image.**

JON PHILLIPS

Continuing from last month's "Inkscape: the Elements of Design, Part I", this article uses the principles of design to lay out the previously learned elements—point, line, shape (form), texture and color. Inkscape, an open-source cross-platform drawing tool is used to describe the concepts (http://www.inkscape.org). Next month, in the last article of the series, the elements and principles are used to create a composition to be submitted to the Open Clip Art Library (http://www.openclipart.org).

## THE PRINCIPLES OF DESIGN

The principles of design are basic guidelines for making a larger arrangement of elements. As such, these guidelines are not strict rules, but rather are to be manipulated and many times broken in order to achieve some desired message.

Designers and artists use the principles to control the elements, learned from the first article in the series, to make complete compositions based upon some design goal.

## BALANCE

Balance is a feeling of visual equality, or equilibrium, in a composition consisting of elements (point, line, form/shape, texture and color). Particularly, this is a judgment based upon ideas of structure such as mass and gravity. It also is defined as the arrangement of the objects in a given design as it relates to their visual weight within a composition (see "The Principles of Design" by Joshua David McClurg-Genevese, http://digitalweb.com/articles/principles_of_design).

Balance is also considered to be in some degree symmetrical or asymmetrical. Symmetrical, or formal, balance is when the weight of a composition is evenly distributed throughout a defined area. Asymmetrical, or informal, balance is when a composition is not evenly distributed throughout a defined area. This usually creates a visual tension in a design and is a powerful construct for achieving a dynamic style.

First, we create symmetrical balance with primitive shapes. Begin by creating a circle using the ellipse tool (Figure 1).

Figure 1. Ellipse Tool

Click and drag on the canvas while holding down the Ctrl key to constrain your shape to being a circle. Now, change to the select tool (F1 key, Figure 2) and drag this object and press the spacebar quickly while dragging to clone the circle a few times. Next, switch to the rectangle tool (F4 key, Figure 3) and create constrained rectangles (squares), select it and then clone it a few times.

Figure 2. Selection Tool

Figure 3. Rectangle Tool

The next step is to arrange the shapes as if there were an imaginary line in the middle of the drawing area on the canvas, so that there are equal proportions on both left and right sides. Using the select tool, arrange the shapes in order to receive a result like that shown in Figure 4.

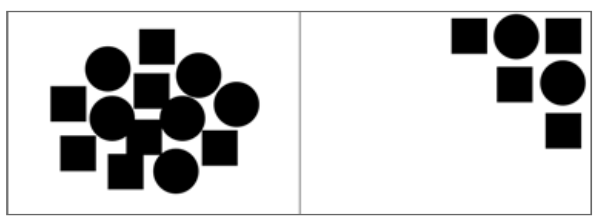


Figure 4. Symmetrical and Asymmetrical Balance

Next, to achieve asymmetrical balance, use the same shapes and clone them into a clumped area that is primarily on one side of the imaginary line dividing the drawing area in half.

## RHYTHM

Rhythm is the repetition of elements with a defined pattern or interval, which can create a sense of movement or establish a texture. Rhythm is usually described as regular, flowing or progressive. Regular rhythm is where there are regular intervals between elements. Flowing rhythm creates a sense of movement that is generally more organic. And, finally, progressive rhythm depicts forms sequentially changing, possibly in size, value or shape.

For this exercise, divide the drawing area into three equal sections by using the beziér tool (Shift-F6 key, Figure 5) to create one straight line from the top of the drawing; click once, and then hold down the Ctrl key, and at the bottom of the drawing, click again.

Figure 5. Beziér Tool

Now, select the line with the selection tool and in the Edit menu, select duplicate. This creates an exact duplicate of the line on top of the old one. Select it, and drag it with your mouse while holding down the Ctrl key to constrain it to the X-axis (horizontal axis). Now, you have three panels representing the three different types of rhythm.

The first is regular rhythm. Next, use the beziér tool to create another line that is horizontal at the top of the first drawing panel of three, and use the Fill and Stroke dialog (Figure 6), which can be opened by clicking on Inkscape's Object→Fill and Stroke... menu item (Shift-Ctrl-F keys). Click on the Stroke Style tab in that dialog, and adjust the line's width to 7 points (pts). Duplicate this line 10–14 times, and arrange it so that each line is equally spread vertically in the first pane. This is regular rhythm.

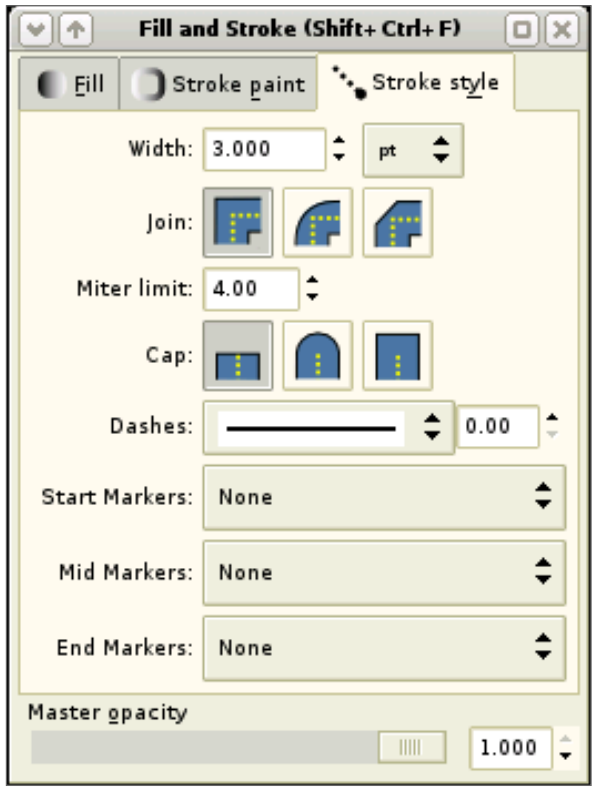



Figure 6. Fill and Stroke Dialog

We create flowing rhythm by using the first rhythm exercise, except instead of creating a straight line, we create a curved line for our basic unit of rhythm. To create this curved line, use the beziér tool, and click on the left side of the second pane. Next, click a little bit higher, a third of the way over horizontally on the second pane, and continue to keep the mouse depressed while dragging to make a curve. Next, double-click on the right side of the middle pane to close the line. Change this line to a width of 3 points and make the cap of the line round (this is another option in the Fill and Stroke dialog).

Next, duplicate this line four times below with equal distribution vertically on the middle pane. Then, switch to the selection tool. Click the top line once, and then a second time, to change the selection interface to have the rotation arrows. Click and pull the bottom-right arrow downward to tilt the top shape downward slightly. The goal is to rotate the upper shapes gradually downward toward the horizontal middle and the lower shapes upward toward that imaginary center (Figure 8). Also, you might scale the shapes by using the selection tool to select each line in order to use the selection arrows surrounding the shape to change the scale of the selection. By holding the Shift key, the selection's proportion will be constrained.

In order to represent progressive rhythm, we must think in terms of changes over time that are represented in size, color and possibly shape. The following example uses new curve editing features found in the latest version of Inkscape 0.43. We use this version to change a rectangle from having straight surfaces to having curved sides incrementally over five shapes.

First, use the rectangle tool to create a rectangle centered in the top of the third panel. Then, convert this rectangle into paths by first selecting it and then choosing Path→Object to Path on the menu (Shift-Ctrl-C keys). Next, duplicate this shape four more times, and equally distribute them to the bottom of the pane.

Change tools to the node editor (F2 key, Figure 7).

Figure 7. Node Editor

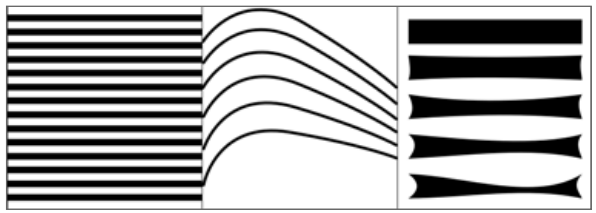


Figure 8. Rhythm: Rhythmic, Flowing and Progressive

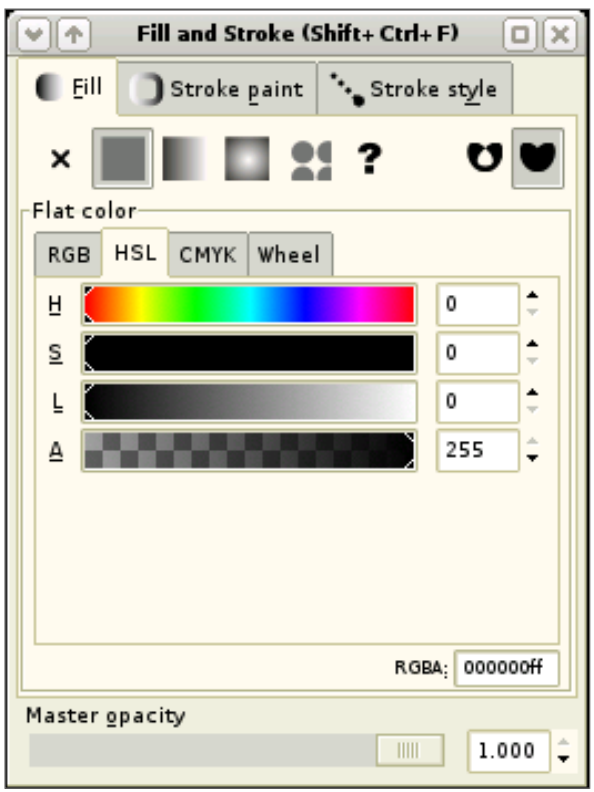



Figure 9. Fill and Stroke Dialog

Figure 10. Star/Polygon Tool


Figure 11. Star/Polygon Auxiliary Toolbar

Select the second-from-the-top shape with this tool. Next, position the pointer directly over the one side of the shape, and once the pointer changes to having a little hand indicator below it, click and drag the line in or outward. This creates a curved line from a straight line. Gradually change each shape from the top rectangle to the bottom shape, which has all the sides caved in (Figure 8).

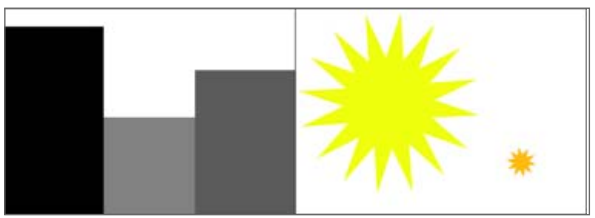


Figure 12. Examples of Proportion

## PROPORTION

Proportion describes the size, location or amount of one form compared to another. It highlights the relationship of dimensions and distributions between one or more forms. Altering the proportions in a design can be used to show depth and dimensionality as well as affect the balance of the overall composition.

First, make a dividing line to create two horizontally adjacent spaces for this demonstration. Now, use the rectangle tool to create one large rectangle, like a large building. Use the Fill and Stroke dialog's fill tab to the change the color of the object to solid black (Figure 9). Then, clone this shape twice and move them to overlap slightly yet still fit inside your drawing area. Select the second shape, and change its fill to a lighter gray and the next shape slightly darker.

Then, we need to change the order that the overlapped shapes are placed on the drawing area. Select the first shape and use the menu item Object→Raise to Top (Home key). Then, select the second shape and go to the menu item Object→Lower to Bottom (End key). Now, there are three structures reminiscent of three buildings with different heights and places in space.

Another example of proportion is to use the star/polygon tool (Figure 10) to create a large star.

Use the star/polygon auxiliary toolbar, shown in Figure 11 first to change the object by clicking default and then to change the number of spokes of the star to 16. Change the color of the 16 pointed star to yellow, and place it in the upper left-hand corner of the right pane. Also, scale it up so that it fits snuggly inside the pane. Then, clone this object, make it much smaller, and change its color to a dark orange like in Figure 12.

## DOMINANCE (EMPHASIS)

Dominance, also called emphasis, foregrounds certain parts of a design, hence subordinating other parts in a design. By controlling the dominance in an image, one might control where a viewer's eyes travel. Generally, images are described as having three states of dominance: dominant (center of interest or focal point), subdominant and subordinate.

For this demonstration, let's create a simple example of some futuristic flag. Start by creating one line using the beziér tool that stretches from the upper-left side to the bottom-right side. Duplicate this line two times, and rotate each of them slightly so that the three ends are closer together at the bottom-right side of the screen. Next, select the bottom line of the three and increase its width to 1.2 points in the Fill and Stroke dialog's Stroke Style tab. Make sure the upper two lines have a width of 0.8 points.

Next, to make the large triangular areas, select the beziér tool once more and create a triangular closed shape (refer to last month's article) remembering to hold down the Ctrl key while drawing to get lines that are straight. Do not hold the Ctrl key, however, when trying to make your shape parallel to the upper black line in the middle of the flag, as shown in Figure 13.

Figure 13. Example of Dominance or Futuristic Flag

Select the top triangular area and change its color to light blue. Then, duplicate this shape and select the copy with the selection tool once. While holding down the Ctrl and Shift keys together, click and drag the bottom right arrow to make the shape smaller while scaling from the shape's central anchor point. Change the color of this shape to a light purple. Now duplicate this procedure for the bottom left shape.

Use the ellipse tool to create a circle (hint: Shift key) and change its color to a winter-like purple that matches with the lighter blue (or whatever color you selected) yet stands out. Scale the circle up in size so that it has the appearance similar to the Japanese flag's sun (http://www.en.wikipedia.org/wiki/Flag_of_Japan).

Notice how the lines move from upper left to bottom right, which is how human eyes generally read images. Also, notice how the large purple sun is the dominant image both because of the movement of the eye, the shape's size, color, curvaceousness and its relationship to the other parts in the image.

## UNITY

Unity is possibly the most complex principle because it describes the relationship between the individual parts and the entire composition. Unity is how all the different parts of a design come together to form an entire "thing". The concept of unity is rooted in Gestalt theory, which describes various psychological tendencies the human brain has to understand a complete "thing" through organizing information into categories and groupings.

Of particular importance is how unity and Gestalt theory explain various effects like closure, where the brain tends to fill in what it perceives as missing information. Also, continuance is created when one begins looking in one direction and continues the direction. This is how the illusion of perspective works where an eye follows the lines of a road until it ends, or until it's obstructed or directed to another location. Also, the human brain categorizes and organizes elements of similar size, shape and color, in addition to those that are in close proximity or alignment with one another.

For this demonstration, we look only at closure and continuance. The entire Gestalt concept will be integrated into next month's discussion of composition.

Divide the drawing area in two sections. To create closure, simply create one ellipse, change its color to blue (although color is itself another attribute for drawing comparisons), duplicate the shapes several times and arrange them into a generic shape, such as a rectangle or hexagon, as pictured in Figure 14's first panel.

Next, create small green triangles by using the star/polygon tool to create an initial shape, and then tweak it using its auxiliary toolbar as

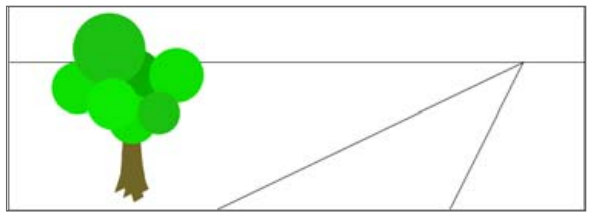


Figure 14. Continuance

shown in Figure 11. The shape should be set to have three sides and the polygon check box should be checked. Set the shape's color to green and duplicate the shape two times. Arrange these shapes so that each one would be at the endpoint of a standard triangle, yet with empty space as the sides. Your brain automatically fills in the sides of the shapes and also helps you determine that the two shapes are different objects altogether, even though one is contained inside the other.

To demonstrate continuance, we create a basic perspective scene. Start by creating a horizontal line across the second pane. Then, use the beziér tool, click the bottom of the pane somewhere and then draw a line up to the horizontal line, called the horizon line in perspective. Do not double-click this line, but rather continue and draw another line back downward to the bottom of the pane. Double-click when you are ready to complete this line, thus making a basic road. Change its color to gray.

For extra credit, use the beziér tool to create a mountain range in the backdrop colored light grayish-brown and make a yellow-dashed line down the center of the road to further drive home the point of continuance, also known as perspective.

## RESOURCES

Inkscape: http://www.inkscape.org

Open Clip Art Library: http://www.openclipart.org

Graphic Design: http://en.wikipedia.org/wiki/Graphic_design

The Elements of Design by Joshua David McClurg-Genevese: http://digital-web.com/articles/elements_of_design

The Principles of Design by Joshua David McClurg-Genevese: http://digital-web.com/articles/principles_of_design

Composition (visual arts): http://en.wikipedia.org/wiki/Composition_%28visual_arts%29

Flag of Japan: http://en.wikipedia.org/wiki/Flag_of_Japan

## CONCLUSION

You have successfully learned the elements and principles of design necessary to make full-featured compositions. Next month we will complete this Inkscape trilogy by creating a composition and submitting it to the Open Clip Art Library.■

Jon Phillips (http://www.rejon.org) is an open-source developer, artist and scholar with more than 12 years of experience building communities and working within computing culture. He is currently developing Inkscape, the Open Source Project, and the Open Clip Art Library (http://www.openclipart.org). He teaches at San Francisco Art Institute (http://www.sfai.edu) and now works for Creative Commons (http://www.creativecommons.org).

# Evermore Integrated Office Kicks Keister

**EIOffice is a better Microsoft Office than Microsoft Office.**

RICKY FREEDLANDER

It is understandable that OpenOffice.org is the hands-down mindshare winner among office suites that run on Linux. It is open source, free, comes with most Linux distributions and is similar enough to Microsoft Office that the transition from Microsoft Office to OpenOffice.org is fairly painless. The KDE office suite KOffice is also open source and comes with most Linux distributions. KOffice is an excellent office suite, but as far as awareness goes, it generally lingers in the distant recesses of the mind, almost as if it doesn't exist.

Enter EIOffice. EIOffice is a Java-based office suite that runs on Windows and Linux. One can wonder just how Java-based it really is, since it refuses to run on just about any version of Java except the version that comes packaged with EIOffice. (EIOffice installs this version if it doesn't find it already installed, but it does not override your default version of Java for other applications.)

It's probably a good bet that most Linux users have never even heard of EIOffice. This borders on criminal. EIOffice is a complete office suite that is not only a near-perfect clone of Microsoft Office 2000 that runs on both Linux and Windows, it is a better Microsoft Office than Microsoft Office itself. The fact that EIOffice is a commercial product (meaning you must pay for EIOffice) is probably the only thing that sets it apart from the better-known competition. But at $149, EIOffice is a steal, because it offers significant advantages over all the competition that runs on Linux or Windows.

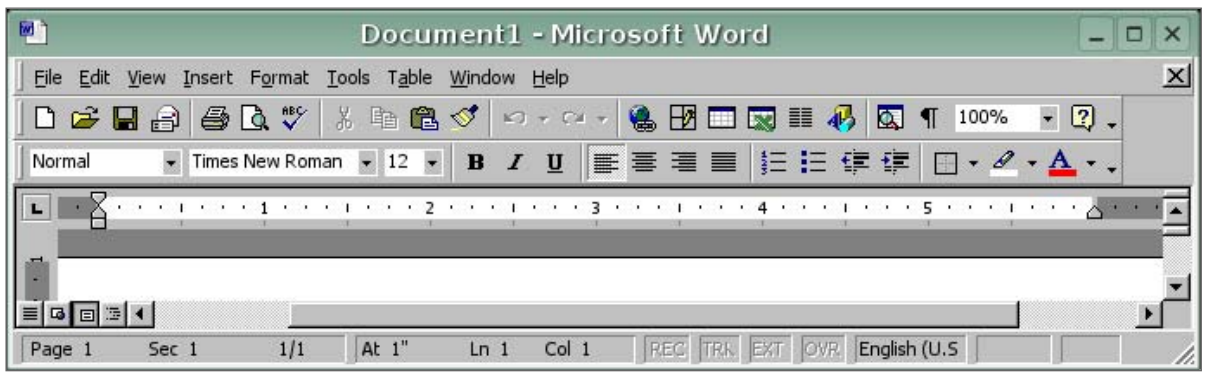



Figure 1. The Microsoft Word Menu, Toolbar and Status Bar

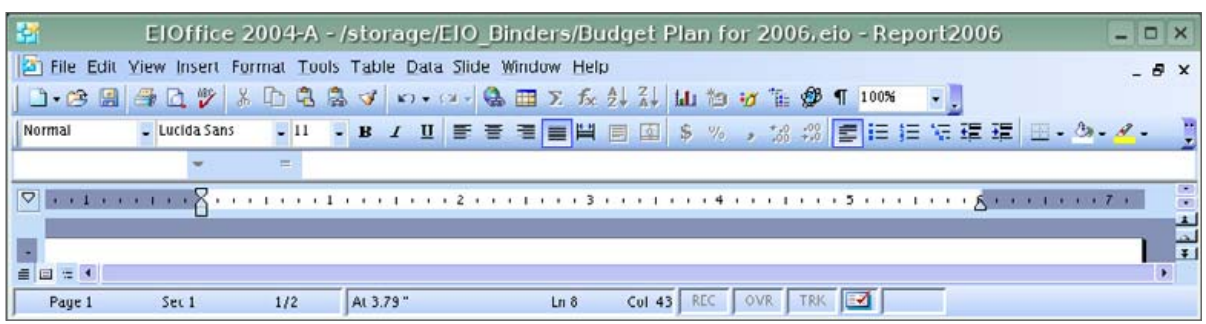



Figure 2. The EIOffice Word Processor Menu, Toolbar and Status Bar

The least of the advantages is that it is a remarkably faithful clone of Microsoft Office 2000. Compare the image of Microsoft Word in Figure 1 with the image of the word processor in EIOffice in Figure 2.

With the exception of the difference in color and widget themes, the two are almost 100% identical. Anyone who is used to Microsoft Word can sit down and start using the EIOffice word processor

without any retraining whatsoever. OpenOffice.org does a good job of mimicking Microsoft Office, particularly the toolbars, but OpenOffice.org doesn't come nearly as close to duplicating Microsoft Office as EIOffice. No matter how easy it might be for Microsoft Office users to adapt to OpenOffice.org, nothing can be easier than switching from Microsoft Office to EIOffice, as the two are practically identical in both function and appearance.

### EIOFFICE LINKING KICKS MS OFFICE KEISTER

The architects of OpenOffice.org and other office applications have done an excellent job of offering functional parity with all of the essential features of Microsoft Office. The problem is that Microsoft Office does some things very poorly. In this case, parity means work-alike suites like OpenOffice.org also do the same things poorly.

The architects of EIOffice seem to have asked the right question in this case, namely, "What can we add, fix or change so that our product provides users with far greater productivity?"

One cannot heap enough praise on the most visible answer they provided. The answer is in the name EIOffice—namely the word *integrated*. EIOffice provides a dazzling level of integration that is missing from every other office suite I've tried.

For example, you can highlight a cell from a spreadsheet, copy it and then paste it as a link in a document. Here is a sample spreadsheet from which we will copy and link information (Figure 3).

Now take a look at the document in Figure 4. All of the text highlighted in gray represents links to spreadsheet cells. The sentence, "In fiscal year 2005, we sold $14 million...", refers to a cell in the spreadsheet that totals sales at $14 million. If you change any of the numbers such that the total in the spreadsheet changes, that change will be reflected in the document immediately.

Why is this so remarkable? First, the process couldn't be more intuitive. You highlight, copy and then paste as a link. Try doing this in Microsoft Office or OpenOffice.org, and what you will end up with is a copy of the spreadsheet cell as a spreadsheet object. Although it's "cool" to be able to edit this object in the document as if it were a spreadsheet, it doesn't really give the results most people want. If you change the data in the original spreadsheet, your document will not reflect the change. It is a painful process to create anything that resembles a live link between an OpenOffice.org/Microsoft Office spreadsheet and a document. You can create a live link in EIOffice,

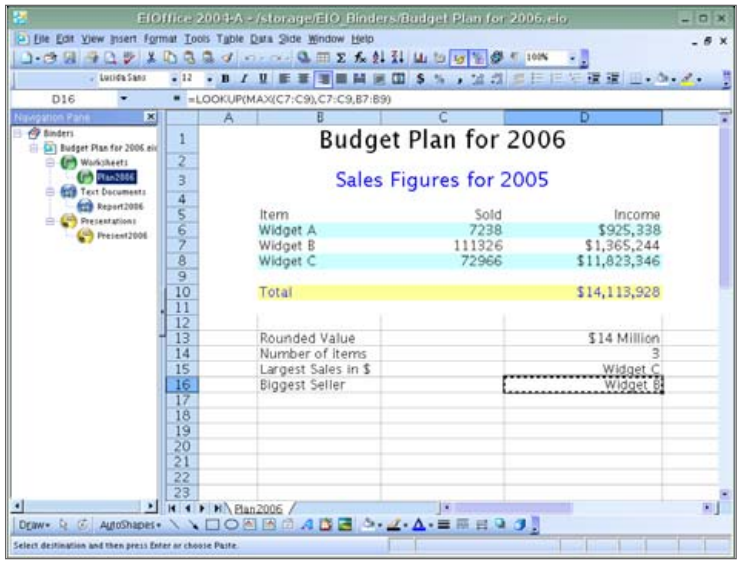



Figure 3. The Spreadsheet Source of Links

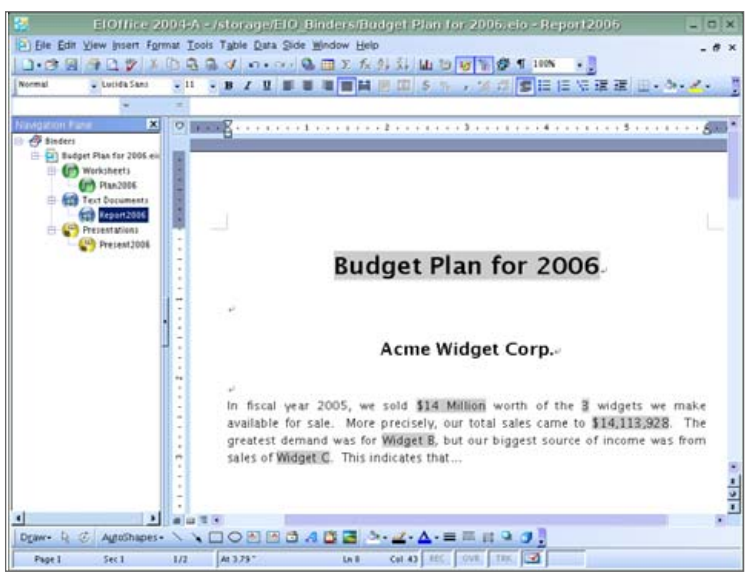



Figure 4. The highlighted text represents links to spreadsheet cells.

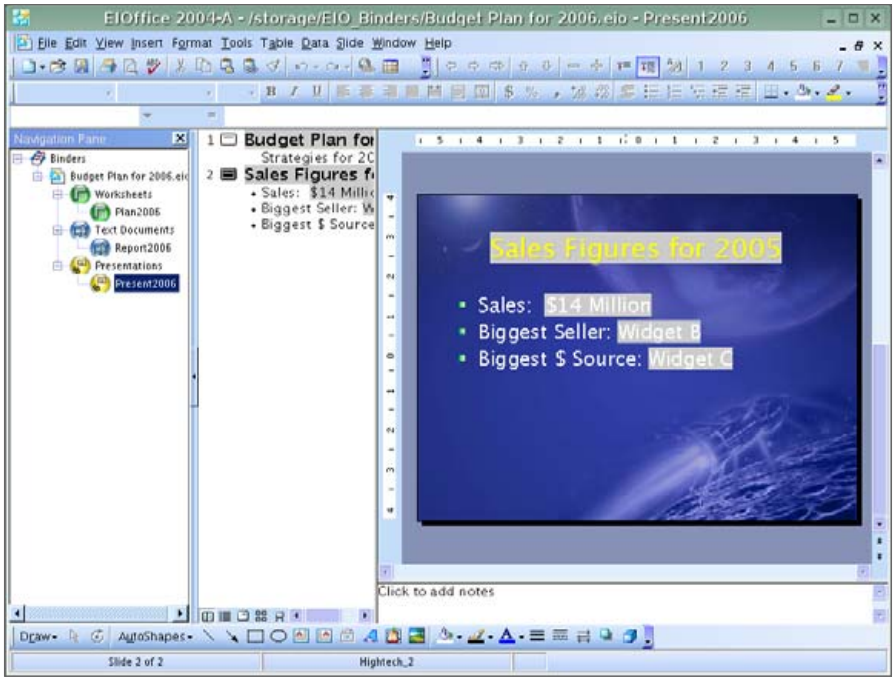



Figure 5. Presentation Based on Linked Information

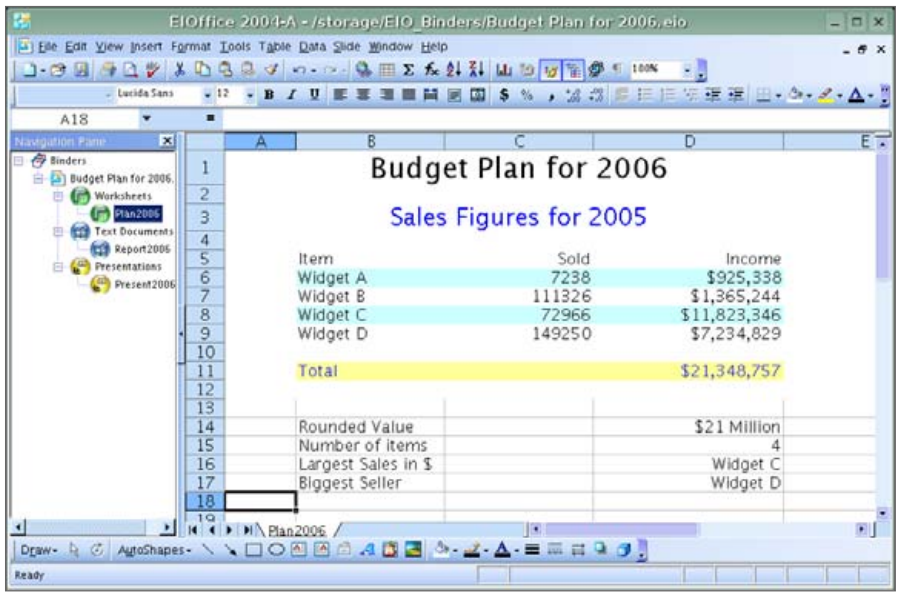



Figure 6. A Modified Spreadsheet

however, with no more than copy and paste.

Now suppose your goal is to create a document you can circulate within the company and also to create a presentation based on the same information. Once again, all you have to do is copy and paste from the spreadsheet to your presentation. See Figure 5 for an example of such a presentation.

This presentation not only makes use of the data in the spreadsheet, it also links to text in the spreadsheet in order to produce matching titles for the slides. Change the text in the spreadsheet, and the titles in the presentation reflect those changes.

## MORE LINK MAGIC

Wait, it gets better. Go back to the spreadsheet and insert a new row that moves the total down one row. The document continues to reference the correct total, even though you moved it. Now cut the cell you linked and paste it into a new location. The document continues to reference the correct total, even though you moved it. It's almost difficult to mangle a link between one document and another.

Wait, it gets even better. Let's look at the example again to illustrate even more magic. Notice that the text says that the company makes three widgets, the greatest demand was for Widget C, and the biggest income came from sales of Widget B. Look at the spreadsheet that provides this information in Figure 1. These results (the number of widgets, which one sold the most and even the format of $14 million) are derived using spreadsheet functions. If you change the information in the spreadsheet, the functions recalculates and reflects the changes.

If you insert a row in order to add another widget to this list, the total number of widgets becomes four, and the document reflects that change. The sales figures for the new widget are added to the total income. If the new widget causes changes to which widget is the biggest seller, or which widget

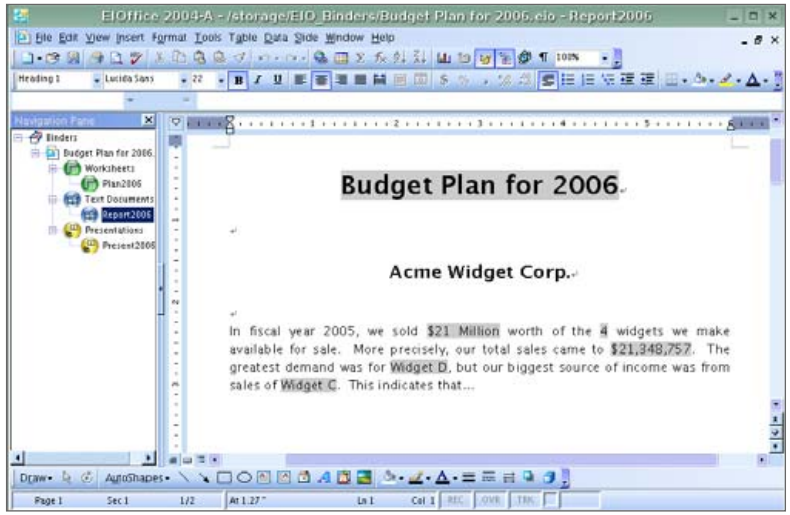



Figure 7. Changes in the Document

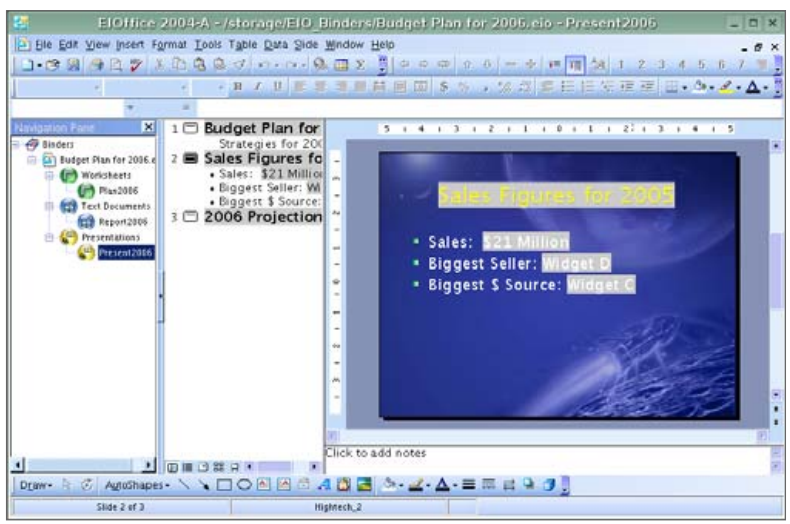



Figure 8. Changes in the Presentation

brought in the most income, all these changes are recalculated in the spreadsheet, and the changes are reflected in the document. See Figures 6, 7 and 8 for examples of these kinds of changes.

## WHAT GOOD IS IT?

If the productivity advantages aren't already obvious to you, allow me to point out at least one possibility opened up by the ease with which you can integrate information. It makes it indescribably easy to create a budget template that includes a spreadsheet with all the figures, a document that references this information (which you can use for a report) and a presentation that summarizes the important information from that spreadsheet.

Each quarter, year or what have you, you can save this template to a new binder file, edit the spreadsheet to add or remove widgets as your company changes its offerings, fill in new figures and make necessary changes to the spreadsheet. The report document and presentation automatically reflect all of the new information. Even if you have to make changes to the document or presentation in order to describe new business strategies based on the changing dynamics of the company, you still have saved an immense amount of time thanks to the integration of EIOffice. Considering how easy it is to create the links that make this possible, EIOffice offers a dramatic increase in productivity the average person can't even begin to squeeze out of OpenOffice.org or Microsoft Office.

## BEFORE YOU ASK

This particular example revolves entirely around information taken from a spreadsheet. No doubt you have also noticed that EIOffice is binder-oriented. That is, it creates documents, spreadsheets and presentations all within a single binder that is saved as a single file.

This does not mean you can link only from a spreadsheet to other types of documents. You can link information from any type of document to any other type of document. For example, you can create a document with headings for each topic and then link those headings to the headings in your presentation. Change a heading in the document, and the presentation reflects that change.

You also are not limited to linking between documents within a single binder. You can create links across different binders (and thus different files). Change the information in one binder, and that change is reflected in the other. If you take that approach, however, the onus is upon you to manage multiple binders properly, so that one binder won't lose sight of the others upon which it depends. It seems like a better approach to organize all related data in a single binder, if only because it is so much easier to manage your information that way. But how you manage your information is your business.

Finally, just because a binder automatically makes space for spreadsheets and presentations doesn't mean you have to use them. You can use EIOffice strictly for word processing, for example. The file

size isn't abnormally inflated because it can contain other types of documents.

### FLAWS AND MISSING PIECES

EIOffice installs fairly cleanly on the most popular commercial versions of Linux, and it installed fine on my copy of Fedora Core 3 and continues to run fine after upgrading to Fedora Core 4. But I also have had problems installing it on less popular distributions, so there is no guarantee it will install easily on yours. This is where the fact that it is a commercial product comes in handy. If you have trouble installing it, you paid for support, so take advantage of it.

EIOffice is a near-perfect clone of Microsoft Office, not a perfect clone. The most visible omission is an equivalent to Microsoft Access. EIOffice does a good job of importing Microsoft Office documents, but not a perfect one. The bigger and more complex a Microsoft Office document may be, the more likely EIOffice will have trouble handling it. In particular, EIOffice usually crashes when I try to load Microsoft Office 2000 documents packed with embedded illustrations and tables. OpenOffice.org 2.0 (beta) did a remarkably good job importing the same documents. KOffice's KWord imported the same documents, but they did not include the embedded images and tables.

On the other hand, when EIOffice imports Microsoft Office documents without problems, it sometimes renders them more faithfully than OpenOffice.org. For example, OpenOffice.org sometimes renders tables too large, so that they extend beyond the margins of the page. I have not seen this happen with EIOffice. When EIOffice has problems with tables, they are generally related to a change in font size that EIOffice makes when the EIOffice style settings aren't the same as the document's original settings. The end result is that the table wraps around upon itself until you change the font size.

With a few exceptions, EIOffice renders notes the same way Microsoft Office renders them. If you highlight a portion of text and write a note about that text in a Microsoft Office document, that same text appears highlighted in EIOffice and the note is attached. OpenOffice.org has a different method for handling notes, so it appears to lose all of the text highlights for notes from the Microsoft Office document. In fact, if the notes exist at all after you import the document, I haven't stumbled on the way to make OpenOffice.org display them.

EIOffice lacks the collaboration features of the latest versions of Microsoft Office. In this case, one must ask oneself whether or not these features are worth having. I have first-hand knowledge of at least two projects where multiple contractors collaborated on documents using Microsoft Office. One project was even commissioned by Microsoft! In spite of the fact that these projects involved a great deal of collaboration, none of the authors used any of the collaboration features of Microsoft Office. If the collaboration features are so compelling, why didn't they use them? Unfortunately, this is a question I cannot answer, but it is worth asking. If you depend upon the collaboration features of Microsoft Office, you'll either miss them in EIOffice, or you'll have to use other collaboration tools (instant messengers and so forth) to make up for the difference.

These flaws in EIOffice will be trivial to some people and show-stoppers to others, depending upon their needs. But EIOffice has so much going for it, you may just find yourself so hooked on the superior way EIOffice handles links that you will overlook the differences you thought would be show-stoppers.

### THE BOTTOM LINE

Even if Microsoft Office didn't exist and EIOffice didn't offer such an amazing level of integration that is so easy to apply to everyday tasks, EIOffice would be worth every cent of its $149 price tag. But Microsoft Office does exist, and users who want to migrate from Windows to Linux can take advantage of the fact that EIOffice makes the transition from Microsoft Office about as painless as one could imagine. As a bonus, it runs on both Windows and Linux, which makes a migration to Linux even smoother. Add to that the fact that EIOffice offers integration that is unmatched by any of the competition, it is arguably the best office suite on the market today. Granted, EIOffice is not flawless, but if you want an office suite, and any of its shortcomings are not show-stoppers for you, EIOffice is not just a superior choice, it is a must-have.■

### PRODUCT INFORMATION

**Current version:** EIOffice 2004-A

**Company:** Evermore Software, based in China

**Price:** $149 US the first year, $99 US per year afterward for continued support and upgrades.

**Web Site:** http://www.evermoresw.com

Ricky Freedlander is a consultant and freelancer and has been using Linux since 1995.

# Gadget Guy: Urgent and key

SEAN CARRUTHERS

If it's time to replace that old keyboard, a lot of great new options are available, both wired and wireless. If there's one thing that the new Linux user should be made aware of right off the bat, it is that not all the buttons on these newfangled fancy-schmancy keyboards are going to work, especially multimedia-centric buttons and application launch buttons—not without some hacking around, anyhow. (Unfortunately, that's another article altogether.)

The good news is that for most of your typing needs, these new keyboards will do the trick just fine; there are no special "Linux" keys required to use a Linux system, after all. If you are dual-booting a machine between Linux and Windows, you can receive all of the multimedia functions while using Windows, and still receive some benefits on the Linux side.

## MICROSOFT NATURAL ERGONOMIC KEYBOARD 4000

http://www.microsoft.com/hardware/mouseandkeyboard/productdetails.aspx?pid=043
$50 US

Yes, I know—boooooooo! But wait! You don't have to like Microsoft's operating system to find something to like about this new ergonomically-designed keyboard. Microsoft was one of the first companies to release a "natural" keyboard, splitting the keyboard in half and angling it slightly outward in an effort to get the hands to fall in a more natural manner, reducing the risk of repetitive stress injuries. The new Natural Ergonomic Keyboard 4000 is the latest such product from Microsoft's hardware team, and it actually has undergone a fairly radical redesign.

Before sitting down to design the Natural Ergonomic Keyboard 4000, a team of experts watched how people were actually using the split-design keyboards and concluded that the design still needed some work. Although angling the keys to the left and right certainly helped, users still were straining to reach the outer keys, often repositioning their wrists completely in the process, including regularly used keys like the Backspace key. In other words, poor typists were also penalized with potential wrist pain from the strain of reaching for that key so often. Ouch.

To address this, the two halves of the split keyboard have been redesigned. First of all, the keys in the center are noticeably higher than the keys on the outer edges, which rolls the wrists slightly outward into a more natural orientation. Second, the keyboard curves outward, so that the keys on the far left- and right-hand side are back in the standard (non-natural) orientation, which is as squared off with the sides of the keyboard as you can get with a keyboard that's shaped like a manta ray. Third, the keys on the outer edge return to a more or less standard vertical orientation, losing the slope found on keys located toward the center of the keyboard. All three of these changes help keep the hands properly positioned most of the time, reducing strain caused by unnatural wrist positioning and unnecessary finger travel.

The downside: just like you did when you learned key positions on a natural keyboard design, you'll have to re-learn exact key positions all over again with this one. (For some reason, I keep missing the B key altogether when using the keyboard. Thankfully, the human ability to adapt to such things is amazing, and practice makes perfect.)

Another nice little bonus with this new design is a special plastic add-on that goes under the keyboard. You know those flip-up clips usually

found on the underside of a keyboard, near the back? Well, this plastic piece clips on under the front end of the keyboard to tilt it in the opposite direction, for users using a desk or stool that's too low for proper typing. The add-on piece spans the whole width of the keyboard, for added stability.

As expected, there are a number of buttons here that do absolutely zilcho on a Linux box without additional hacking. The top row has a series of one-touch application launch buttons, dedicated buttons for Web favourites and volume/play control buttons for use with Windows' Media Player. There's also a "zoom" control tucked between the two halves of the keyboard, and back and forward buttons located just below the keyboard. Thankfully, these keys are grey instead of black, so it's easy to figure out which ones not to press.

Because the Natural Ergonomic Keyboard 4000 connects to your computer via USB, it's less expensive than the new wireless keyboards. Even with the non-functional buttons along the top and bottom of the keyboard, the benefits of the new 3-D key redesign may be well worth the price.

## LOGITECH CORDLESS DESKTOP MX 3000 LASER

http://www.logitech.com
$100 US

If you can't stand dealing with the wires on your desktop, check out this new cordless package from Logitech. Again, the keyboard has a series of buttons along the top that will do nothing for you out of the box, but there are a few special controls that do offer added functionality. And because this one is a bundle, it also comes with one of Logitech's new cordless laser mice as an added bonus.

There's nothing overly special about the layout of the keyboard itself here: it's a pretty standard orientation, with the alphabet on the left and a number pad on the right. There's a huge array of special-use buttons along the very top of the keyboard, however, and none of them work on a Linux system without extra work: there are buttons for accessing your digital library on the left, your communications tools on the right and media control buttons—including a big (but nonetheless useless) volume control—in the center. Off to the left-hand side of the keyboard is a bit of good news: the scroll wheel built into the keyboard actually works, as do the two arrow keys on either side of it. Don't bother with the zoom controls just above it, however.

Likewise, the included mouse offers at least one surprise. The mouse is one of the next-generation laser mice, which replaces the glowing red LED found in optical mice and with a laser sensor for greater resolution and the consequent greater sensitivity. If your version of Linux recognizes mouse scroll wheels, this one is no exception, but my version of the OS (SUSE 9.3) also automatically detected the tilt functionality of the scroll wheel: push the scroll wheel to the left or the right, and your computer will see it as cursor left or cursor right, just as if you pressed the left or right arrows on the keyboard—very handy for navigating through spreadsheets. One bit of oddness: although the other mouse buttons appear to be nonfunctional (left- and right-click excepted of course), the button marked 100% appears to double as a left-click. Of course, you can always find a geek who knows what he/she is doing and get them to play with files like Xmodmap and xorg.conf to map all the buttons on the mouse.

Both the keyboard and the mouse require a pair of standard AA batteries, and both feature a warning light that lets you know when the batteries are about to run out.

Again, the lack of functionality from the extra buttons is a bit of a bummer, but $100 for a wireless keyboard that comes with a mouse worth about $60 all by itself—well, that's not bad. Not bad at all.■

Sean Carruthers is a freelance technology journalist from Toronto. He spent six years at Canada Computer Paper, first as Products Editor at *The Computer* and later at *HUB Digital Living* magazine. As a freelancer, he has written for the *Globe and Mail*, http://globetechnology.com, *HUB Digital Living*, *Computer Dealer News*, *Homefront* and *CE-Biz*. Although a relative newbie with Linux (SUSE, thank you very much), he has extensive experience with tech gadgets of all sorts and is enjoying figuring out which ones are compatible with Linux.

# Evince

Evince is a document viewer application that currently supports PDF and PostScript document formats. It offers the speed of lightweight viewers, such as Xpdf (which sacrificed features for speed), as well as some of the features of more heavyweight viewers, such as the official Adobe PDF Reader (which quite obviously sacrificed speed to provide a boatload of features).

Evince recently has been included into the GNOME platform, and therefore it should ship with most recent Linux distributions.

Performance-wise, Evince was able to open up a 960-page PDF document in just under two seconds, and the October 2005 issue of *TUX* magazine in less than a second. This is quite similar to the performance provided by Xpdf; however, I noticed that once loaded, browsing through the same document with Evince was considerably faster and smoother than it was using Xpdf.

As for the features, one thing I immediately noticed about Evince was the ability to select text in a PDF document. Xpdf does not provide this particular feature, and it does have obvious advantages.

Evince also supports several different view modes for documents, much like the official Acrobat Reader, such as dual-page view or continuous (or any combination of those settings), the standard zoom drop-down, as well as a couple of zoom options tailored to your current resolution and the size of the Evince window (fit page width is such an option).

Additionally, Evince offers a search tool, similar in nature to the one provided by Mozilla Firefox's Type-ahead Find feature or Epiphany's search bar. Pressing the / key on your keyboard triggers this bar to appear, and the document is searched as you type each character.

I was pleasantly surprised by the speed at which Evince was able to match text in very large documents.

Two other interesting features that Evince provides are Indexing, which creates a linked table of content of your document in a way similar to how presentation applications work, and a thumbnailing feature that creates thumbnails of all pages in the vicinity of the one you are currently reading. The thumbnails are rendered as you browse through your documents and once again, Evince creates these thumbnails very fast.

—Xavier Spriet

## About Evince:

- **License:** General Public License (GPL)
- **Price:** Free
- **Web site:** http://www.gnome.org/projects/evince


Selecting Text


*TUX* Magazine in Full-Screen Mode


Dual-Page Mode, Continuous and Search-Bar

# NVU

NVU (pronounced N-view) is a WYSIWYG (what you see is what you get) HTML editor. It is basically a tool that allows you to create individual Web pages or entire Web sites graphically, without having to learn HTML, CSS and all the other technologies involved in these tasks.

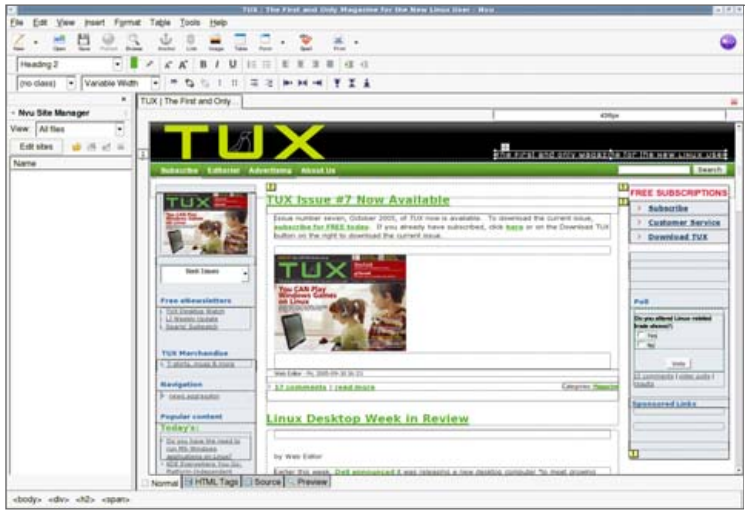
NVU is based on the Mozilla Composer component, a basic HTML editor that can be used to put together simple Web documents.

The tools and interface provided by NVU are what differentiates it from Composer, as it intends on becoming the editor of choice for professionals.

Those features are numerous, and include a site manager that lets you maintain a repository of all your Web projects, including publication information, site name and URL, which NVU uses to publish all documents belonging to the entire Web site automatically.

Another interesting feature is the ability to open remote locations directly in the editor and start using an existing Web document as a template, simply by specifying the URL.

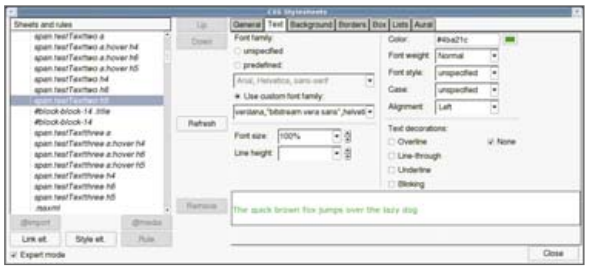
NVU also provides a complete CSS editor dialog so you can create and manage complete CSS stylesheets. This is particularly useful for people who need to maintain larger sites or use one stylesheet as a template for future work.



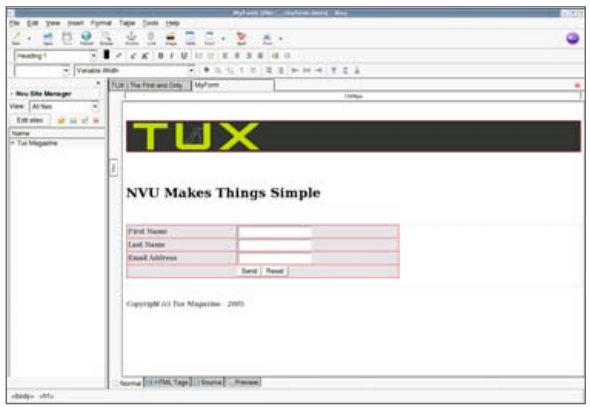

Editing the *TUX* Magazine Web Site

The CSS editor is intuitive (although you need to know what CSS is and how it works to understand what you are doing with the editor) and fairly complete. It supports remote sheets and rules, CSS rules against standard HTML elements, custom rules and so forth.

I've taken NVU out for a spin and decided to create a simple branded HTML contact form to see how painful NVU would make this task. Overall, I found the process to be pretty straightforward; the HTML and CSS code generated by NVU was relatively clean, the layout made sense, the keyboard shortcuts were intuitive and the end result was precisely what I had in my editor window.



NVU's CSS Editor




Creating a Simple Form with NVU

I did notice a couple of oddities while using the application, such as an empty menu item, a rather counter-intuitive way to add submit buttons to a form (the Insert→Form→Button→Submit button option creates an empty and blank button that does nothing). But, overall the progress is encouraging, considering that NVU is still at an early stage of development (version 1.0 was recently released).

—Xavier Spriet

## About NVU:

- **License:** Mozilla Public License (MZL), General Public License (GPL), Lesser General Public License (LGPL)
- **Price:** Free
- **Web site:** http://www.nvu.com

# Novell Evolution

Evolution is a personal information management system that handles the management of e-mail, calendar, tasks and contacts. It originally was developed by Ximian, Inc., formerly Helix Code, which was acquired by Novell, Inc., in 2003.

Since 2004, Evolution also has been the official personal information management system of the GNOME desktop platform.

Evolution is based on the combination of four core components. Each component pertains to certain types of information and manages data in a different way.

## Mail Component

Perhaps the most mature component of the entire application is Evolution's formidable mail-client. This mail client is similar to other tools, such as Microsoft Outlook, KMail or Thunderbird, but has a combination of several very interesting features:

- Filters all incoming mail through the SpamAssassin application. SpamAssassin is one of the most sophisticated and mature junk-mail protection systems available.
- Views messages by threads.
- Powerful rule-based filtering system—the filter dialog is a powerful tool that lets you create custom combinations of rules and actions that should be triggered.
- Can retrieve mail from a Microsoft Exchange mail server.
- Contains virtual folders.
- Provides HTML composing.


Evolution Components Bar

## Calendar Component

A particularly interesting element of Evolution is an incredibly useful calendar. I have been using that component of Evolution since the 1.2 days, and it gets even more exciting with every release.

The Evolution calendar (just like every other component of Evolution) can communicate with the Microsoft Exchange server as well as Novell's competing Groupwise system. It supports the management of multiple calendars at once, and it displays multiple calendars in a much more intelligent way than Microsoft Outlook.

The Calendar component allows you to create recurrent events, send notifications to meeting participants and gather their responses and display on-screen alerts to notify you of events. It integrates itself to the GNOME clock applet to show today's events, and it even displays the weather forecast for the days in the current view.

## Tasks Component

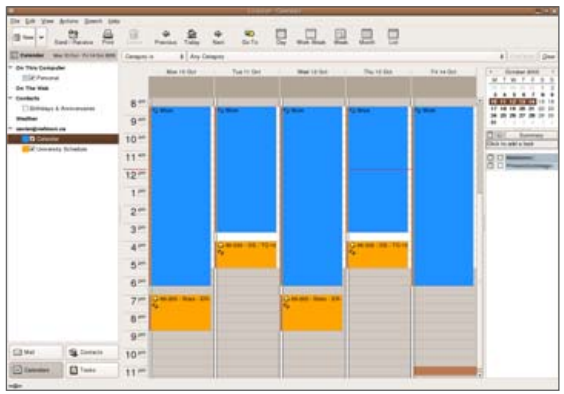
This component is a bit more simple to use. It is basically a to-do list on steroids. Important tasks are integrated in your GNOME clock applet as well, and several lists can be kept at once.

You also can specify values for important aspects of each task such as the start/due dates, priority, summary and so on.

## Contacts Component

This particular component lets you track your personal and business contacts and is meant to make communications with these contacts easier.

A powerful sorting system allows you to create intuitive lists of contacts, and the component also integrates with the Gaim Instant Messenger client to track the on-line/off-line status of your contacts directly from the mail client.



Multiple Calendars


Company View for Contact List

### About Evolution:

- **License:** General Public License (GPL)
- **Price:** Free
- **Web site:** http://www.gnome.org/projects/evolution

—Xavier Spriet