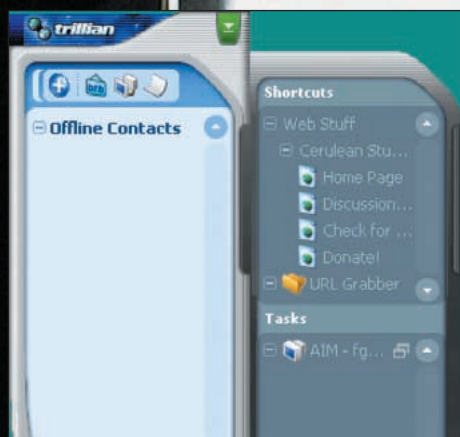


WINE

The subtle flavours of WINE

A trio of tasters, messrs **Veitch, Channelle and Hudson**, explore the many varieties of **WINE** and how it can help you run Windows applications on Linux.

CodeWeavers' *Crossover Plugin* allows the use of common Windows web plugins like *Trillian* (left) and even Microsoft's own *Windows Media Player* (far left).



By and large (and it's a fair bet someone will write in to criticise this generalisation), software is not a commodity. What is meant here is that all software is not created equal. Adobe's *Photoshop*, *The GIMP*, *Corel Photopaint* and *Kpaint* are all graphics packages, but they are by no means interchangeable. *Photoshop*, for example, has a rather dodgy PNG loader, some LXF staff hate the user-interface of *The GIMP*, and feature-wise, *Kpaint* is only suitable for the most simple tasks.

As the Linux software base has grown and matured, there are often several examples of virtually any common applications available, but some of the more niche markets aren't as comprehensively explored. Where would you turn to for a Linux equivalent of Curious Labs' *Poser* for example? Added to that, with often years of experience of non-Linux software behind them, many converts to the way of the penguin are reticent to forget everything they knew and learn a different application instead. These are two of the main reasons a lot of Linux users keep a version of Windows knocking around on a spare partition. It isn't an ideal solution – what if you want to create something in *Poser* to use in *The GIMP* for example – reboots galore.

Wouldn't it be great if there was some way to continue using Windows applications while running Linux? Machine emulators exist that enable Linux users to install Windows on a

piece of virtual hardware, but while that removes the need for rebooting, it's hardly akin to running the software on the same OS. The answer to this conundrum is WINE. We have covered WINE several times in *Linux Format*, but this time we'll also be looking at what is actually going on, and examine some of the commercial variants that guarantee you will be able to run specific applications.

Introducing Wine

First things first. As is customary at this juncture, we should explain that WINE is not an Emulator. Indeed, in a typical GNU recursive fashion, that's what the name stands for. So if it isn't an emulator, what exactly is it?

There are two parts to WINE and most of its relations. The first part is a loader, which enables the Linux system to decipher and understand a binary executable that was compiled to run on a native Windows system. Without the loader, Linux just wouldn't be able to make sense of a Windows application binary.

The second, and by far the hardest part to create, is a library which reproduces the standard API calls used in Windows. Think of it like this: if you were to compile a KDE application and try to run it on Windows, even assuming it understood the file, it wouldn't work. The binary will make all sorts of references to libraries (such as *Qt* and *glibc*) and systems (other KDE apps it expects to be running) and possibly filesystems (user directories) that simply don't exist on Windows. The reverse is also true. Windows provides its own standard libraries and systems (like the registry) to create an environment for applications to run

A brief history of WINE

A decade of development

The WINE project originally began back in 1993. In those days the aim was merely(!) to support the API for Windows 3.1 and allow the emerging graphical software to run on Linux.

Bob Amstadt was the original coordinator, but Alexandre Julliard took over fairly early on, and has continued to oversee the project ever since. As the years progressed, WINE expanded both in terms of the platforms it ran on (with ports to many popular flavours of Unix and BSD) and the scope of its mission (most notably to support other versions of Windows too). Although WINE did run happily on many flavours of Unix, later versions use kernel-level threading, not currently implemented in

the code for non-Linux platforms, but it is likely that this will be addressed at some stage.

Corel took a big interest in WINE in 2000, when they used it to help release Corel software, such as *Corel Draw* and *Photopaint*, for Linux. Corel also provided a fair amount of resources to the WINE team.

WINE is still very much in development, and ten years on from its inception, is still not regarded by the development team as being ready for general use. However, that notwithstanding many 'ordinary' people do use it every day, running all manner of software not originally intended to work under Linux.

on. They expect these services to be there. The task of the WINE library is by and large to reproduce this environment, contained in a Linux library, so that the binaries don't notice the difference. The important distinction here is that because WINE is not an emulator, you don't need a version of Windows to actually run Windows applications.

Get WINE

Most distros will have a version of WINE supplied, and for most cases, it will be best to use this version. Red Hat, SuSE, Debian, Mandrake and others produce their own WINE packages for use on these distributions. If you can't find one applicable to you, you could try www.rpmfind.net. Source is available from the main WINE website and its mirrors, www.winehq.org. You can download the latest stable release or one of the nightly snapshots. Bear in mind that WINE is very big these days. The source is around 8MB and it can easily take half an hour to compile.

Other vintages

While WINE is and will remain a project licensed under the LGPL, that will certainly continue in development for the indefinite future, there are also different projects built around WINE. Two of these are detailed in the coming pages – both are specifically targeted releases that tackle two of the common areas of interest for those wishing to run Windows applications – office software and games...

“Many ‘ordinary’ people use WINE every day to run all manner of software not originally intended to work under Linux.”



Sometimes WINE and its cousins are the only way to view proprietary document formats under Linux.

WINE resources

WineHQ

www.winehq.org

The main WINE website with FAQs, forums and tons more info

Frank's Corner

frankscorner.org

Amazing site with lists of apps that run on various shades of WINE, plus tips on how to get them working.

Transgaming

www.transgaming.com

Home of WineX, a commercial version aimed at gamers (see overleaf).

CodeWeavers

www.codeweavers.com

As well as producing *Crossover Office* and the *Crossover Plugin*, CodeWeavers also produces an easy to install and configure version of Wine, available for free download.





WINEX3: GET YOUR GAME ON

As we're all serious coders, there's no way that fripperies like computer games hold any interest whatsoever for Linux users, right?

Native Linux games are few and far between, particularly now that Loki is no longer with us. While the odd title does come out, such as *Unreal Tournament 2003*, many companies still do not wish to invest the time and effort in producing a port for Linux users. However, all is not lost thanks to the

"WineX has superior support for Windows technologies — programs failing to work in WINE will often work flawlessly in WineX."

efforts of Transgaming, which is developing its own port of WINE that allow many games developed for Windows to work almost flawlessly with Linux. The third release of their software, WineX, has added support for some top of Windows' top games, such as *Medal of Honor*, *Battlefield 1942*, *SimCity 4*, and *Everquest*. Add to that its already extensive list of supported titles and most people should have enough games to keep them going for some time!

WineX is made available in two forms: a wodge of source code direct from the developers, or as pre-packaged files available for popular Linux distributions. The former is made available for free, but naturally many want the latter as it makes life much easier. Transgaming charges a fee of \$5 a month for access to their prepackaged files, however there are other benefits to being a subscriber.



Battlefield 1942 is just one of the many popular games that can be made to run under WineX3. Now, where did the enemy get to?

For example, all subscribers are able to vote for what they'd like the Transgaming developers to work on next, whether that be faster 3D action, a smoother installation process, or support for a particular game. Also available are special support options for subscribers – if you're experiencing problems getting WineX to work on your machine, you can get in touch with Transgaming support staff who will do their best to help you out. One advantage that should not be underestimated is that by subscribing you're supporting a company who are driving forward WINE's development greatly – Transgaming gives large amounts of its source code directly back to the WINE project, which benefits everyone who wants to use MS Windows on Linux.

800MHz PIII and it ran very smoothly indeed. While there were a few hitches with textures on walls failing to appear on screenshots, the game ran consistently quickly – even when there were complicated events on screen. Installation of the game looks and feels just like Microsoft Windows, which should make many migrants feel at ease – WineX even smoothly maps drives to Windows-like letters, and places a friendly WineX shortcut on the desktop to launch each game as it's installed.

Superior support

Because making games work perfectly has required Transgaming to work on more than just DirectX/ OpenGL support, WineX has superior support for various other Windows technologies. As such, very often programs that fail to work in WINE will work flawlessly in WineX. Many of these technologies are in the process of being incorporated into the main WINE tree, thanks to donations from Transgaming, and so WINE should catch up sooner or later.

WineX 3 brings more to the table than just a new list of supported games. For example, there's a new ALSA sound card driver available, early support for force-feedback



Games you can play

At the time of writing, WineX supports just shy of three hundred games and the list is growing daily. These include (and this list is by no means exhaustive – just some of LXF's favourites): *Battlefield1942*, *Civilization 3*, *Command & Conquer: Red Alert 2*, *Curse of Monkey Island*, *Deus Ex*, *Diablo II*, *Everquest*, *Grand Theft Auto 3*, *Imperium Galactica 2*, *Jedi Knight 2*, *Master of Orion 3*, *Max*

Payne, *Medal of Honor*, *Nascar Racing 3*, *Nox*, *Return to Castle Wolfenstein*, *Soldier of Fortune 1 and 2*, *SimCity 3000* and *SimCity 4*, *Sudden Strike 2*, *SWAT 3*, *The Sims*, and *Warcraft 2* and 3.

Once you subscribe, you can vote for the new games that the development team should work on – if you don't see it in the list on the Transgaming website, your vote will likely count!

How good is it?

We downloaded the prepacked files for Debian, and they installed smoothly with dpkg. WineX is run simply by typing **wineX3** before the name of the Windows executable you want to run, so we installed *Medal Of Honor: Allied Assault* – see the box, *How to get your games working* on the right to see how "hard" it was.

The speed of WineX is incredible – we tested *Medal Of Honor* on an

joysticks in games that take advantage of the hardware, and a new graphical game installer called *Point2Play*. *Point2Play* also handles automatic updating to new versions of WineX as they become available.

The bad bits

It's not all perfect in WineX, sadly. Firstly, it does require some "pollution" of your Linux box – WineX isn't Free Software with a capital F, and neither are the Nvidia drivers. In fact, while installing the Nvidia kernel module, you'll even be given a warning that it will taint the kernel with non-free code. If you're not a GPL purist, then naturally this isn't a problem.

Another problem is that Linux distributions are so wildly different today that WineX isn't guaranteed to work on them all. For example, Red

Hat 9 is quite different to Red Hat 8 when it comes to threading libraries, so WineX has a lot of extra code in there to try to sort these problems out. While we didn't experience any problems ourselves, there are quite a few messages on the Transgaming support messageboards from subscribers experiencing problems here and there.

One final problem is in the availability of drivers for your system. WineX is very much Nvidia-specific, although it can work to a degree with other graphics cards. As Nvidia's card drivers are proprietary, you're pretty much at their whim if you find a game not working quite correctly on your machine. This is negated somewhat by the fact that Transgaming do a great deal of work to make sure games are as compatible as possible – very often

you'll find recently released games "just work" in WineX, particularly if they re-use code from prior games such as the *Quake 3* engine.

Summing up WineX

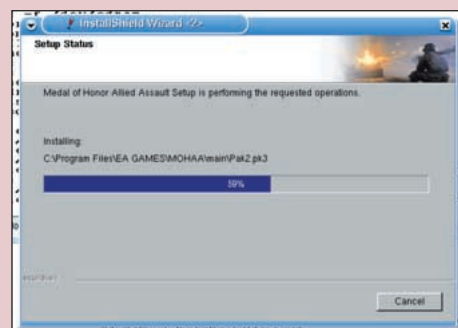
While it would obviously be ideal if popular games all had native Linux ports, it's sadly not likely to happen in the near future. In the meantime, though, we have WineX, and it does a remarkably good job of making Windows games run unaltered on Linux. Yes, there are flaws here and there – its pickiness regarding graphics cards might bite quite a few users, for example – but that's not enough to drag it down too much. The reality is that Transgaming have successfully made Windows games available to Linux users, and it's as hassle-free as anyone could want.



How to get your games working

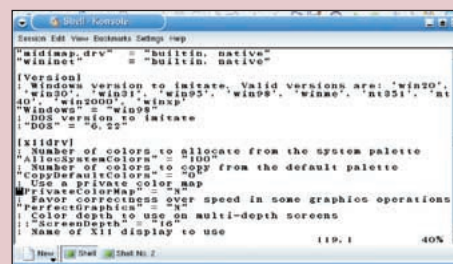
Dropping dual boot becomes a reality!

Here's a step-by-step guide to getting *Medal Of Honor* working on your machine. The process is pretty much the same for other WineX-supported games, and really isn't tricky at all as you'll see...



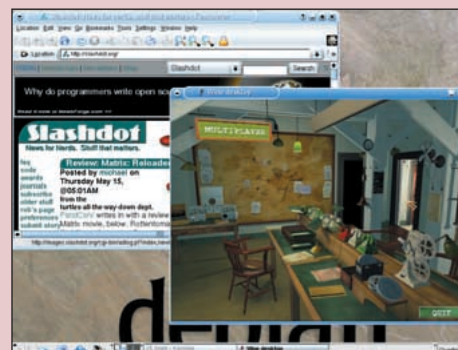
STEP 1: INSTALLATION

To kick off the installation process, mount your CD ROM, then run `wineX3 /path/to/cdrom/Setup.exe`. Note that you should *not* do this from inside the /cdrom directory, as this will keep the drive mounted even when WineX prompts you to insert the second install CD. You may find it helpful to tick 'Create shortcut on my desktop' at the end of installation, as WineX re-writes this so that it calls the `wineX3` executable. Transgaming recommends you always patch your games to the latest release, so we installed the *MoH* 1.11 patch.



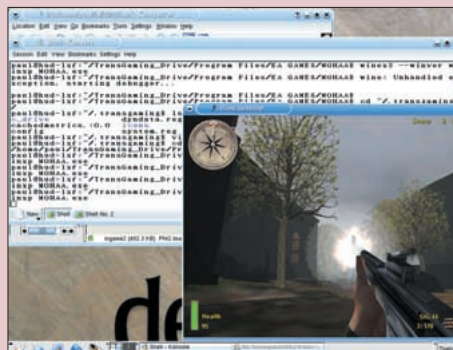
STEP 2: CONFIGURATION

WineX Medal of Honor works just fine with default settings, but WineX's configuration file is very easy to read and toy with if you want to enable specific settings. For our screenshots, we edited the file to force WineX to run games inside a window, rather than in the default full screen fashion.



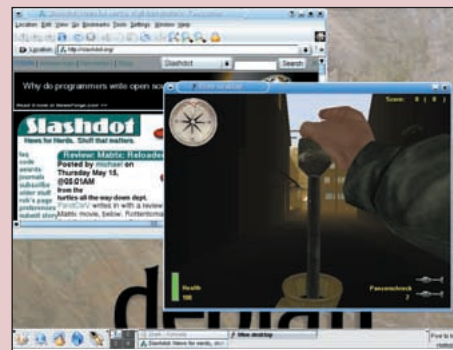
STEP 3: START THE GAME UP

cd to the directory of the game executable, then type `wineX3 <game.exe>`. Once you're into the game, you should make sure it has detected your hardware correctly and that you don't try and push your computer too hard – remember, WineX does its best but isn't perfect! We tweaked our *Medal Of Honor* settings to get maximum performance.



STEP 4: GET PLAYING!

Dakka dakka dakka dakka squawk! Our Reviews Editor takes time out to enjoy his favourite sport of Pigeon Machinegunning.



STEP 5: CALL IN THE HEAVY METAL

The rocket launcher in the *Medal Of Honor* is the bee's knees, however as you can see in the picture, it takes some time to reload!



CROSSOVER OFFICE 2.0

It is often said that one of the 'barriers to entry' for Linux in the corporate world is the lack of support for the *de facto* standard productivity applications. **Andy Channelle** tests one solution to the Linux users' perennial 'just one app missing' syndrome.

For many users in offices and homes across the world, Linux is simply not worth considering, often due to the fact that there is one or two applications deemed irreplaceable. These may be obvious candidates such as *Microsoft Office* or *Adobe Photoshop* for professional buyers and *Quicken* for home users, or more peripheral applications. And while Linux has its fair share of competitors in the form of *OpenOffice.org*, *The GIMP*, *Gnucash* etc. the lack of 'industry standard' applications is a major stumbling block.

To combat this situation, the Open Source WINE Project was initiated which would add a new application layer to Linux, translating Windows API calls instantaneously and allowing the installation of many Win32 applications. As the project matured more installation successes were reported, but whether or not an application would work on a given system was still a little hit and miss, often requiring some fiddly work.

Enter CodeWeavers and its groundbreaking suite of products that allowed Linux users to access web content previously limited to Windows

and Mac PCs (*CrossOver Plugin*) and install a range of Windows productivity applications through a simple to use interface (*CrossOver Office*). *CrossOver Office* (COO) was well received in its first incarnation but there were limitations and the range of supported applications was quite narrow. Also, as most people have come to realise, Microsoft stands still for no man and the latest release of COO not only improves support for *MS Office 97* and *2000* it also brings, with a few caveats, *Office XP* to your Linux desktop. Furthermore there is also full support for *Adobe Photoshop 7*, which should gladden the hearts of professional users – especially in the SFX/film industry – currently struggling with *Photoshop* on *VMWare* or other virtualisation software.

Installation No.1

After downloading and burning COO to a CD (the latter is not essential) I ran the single script that installed and configured the system. As well as installing the main set-up application and a couple of subordinate programmes, the script creates a 'fake Windows' directory containing the full Windows file structure including the likes of 'Program Files' and 'System' and which is seen by Windows apps as the C drive. You can also select a directory from any partition to act as 'My Documents' and this defaults, handily, to /home.

The two accessory applications allow you to either reset COO in case of a crash, or simulate a Windows reboot, which may be needed during the installation of some applications. Under the COO menu heading – the script adds entries to both GNOME and KDE – you can also access the online documentation or uninstall everything. Finally, you will also notice a new 'Windows Applications' entry on the K/GNOME panel, which is where you can launch applications if you don't want to go through the set up user interface.

The installer worked flawlessly on both Red Hat and SuSE systems, and didn't interfere with the already present WINE installation on the latter. Office Setup is where most of the work takes place; here you can install, remove and repair applications, configure menu entries, set up file associations and update the supported applications list. It's all so simply put together, thanks to the limited remit of the application, that the newest of new users should be able to find their way around with no difficulty.

Installation No.2

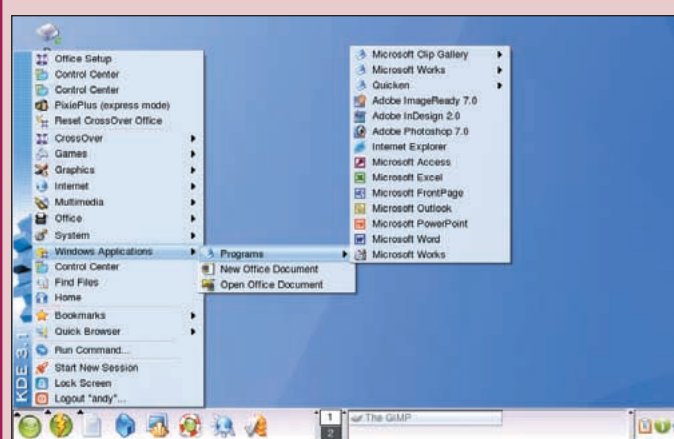
To install a new Windows application you simply start up Office Setup and, from the opening screen, click on the 'install...' button. This will take you to the installation dialog, which lists the supported applications. Choose one of these, insert the relevant CD-ROM or select a location on your hard disk and you're away; from here on in it is the same as installing on a basic Windows machine, without the need to reboot halfway through. On the installation screen there is also an option for using 'unsupported' applications but here, as with a vanilla WINE setup, your mileage will vary.

The list of supported applications is quite good, comprising *Microsoft Office* (97, 2000, XP), *Lotus Notes*, *Quicken*, *Microsoft Visio*, *Adobe Photoshop 7* and *Internet Explorer* (which, when selected, is installed directly from the Microsoft site unless you specify otherwise).

It is likely that most users will be evaluating or buying COO specifically to run *Office*, so this is where we started, bypassing the 97 version and going straight for *Office 2000* instead.

Purists will no doubt cry out in shame at the sight of the Microsoft install dialogs cluttering up a clean KDE desktop, but those who need this software but have no desire to run Windows will find satisfaction in its familiarity. Ironically, thanks to the simulated reboot, putting *Office* onto

The menu structure



Crossover Office is a software tool that brings *Photoshop*, *MS Office*, *Quicken* and other Windows applications to Linux. The menu structure mirrors Windows completely, making it seem closer to more traditional virtualisation software such as *VMWare* or *Win4Lin*.

Linux takes about half the time of a native install. Any online components (such as DCOM95, which was needed for *Internet Explorer*) are automatically downloaded and installed, file associations are configured and, within a few minutes, the full suite is available through the Windows Applications menu.

The most significant addition for many people in COO 2.0 will be support for Access; indeed, CodeWeavers regards this as one of the major selling points. While Linux has some incredibly powerful database systems, they say, it hasn't yet been blessed with a fully featured, intuitive front end. I tested first by building a simple address book to house a small amount of personal data then installed and played with the sample database included with the suite. There is an inevitable performance hit when using an emulator (yes, we know WINE Is Not an Emulator), but on a fairly powerful machine it makes little difference. Occasionally an application would stop and ponder for a few seconds, but whether this is a problem of COO or the actual application is difficult to pin down. One thing I did note – and this appears to be common across the core Office 2000 applications – is COO's displeasure with the Office Assistant. More often than not, trying to query 'Clippy' caused the application to hang, requiring the use of **xkill** and **xrefresh** to sort it out. While Clippy is the cause of much teeth-grinding among Office users, he is the only conduit to the help system, so pretty vital if you don't have the manuals to hand (and who in an office does?).

While Office 97 and 2000 are both fully implemented, XP only has partial support, you won't be able to use either *Outlook* or *Access*, but everything else works as expected.

The next big thing is *Photoshop*. CodeWeavers claim the application can manage everything up to the latest release, version 7. To test this, I successfully installed *Photoshop 6* and then upgraded to 7. All went fine, but to double check I took it all off and did a straight installation of *Photoshop 7*. Again, I encountered no problems. Every tool, filter and option worked as expected, though with a tiny degradation in raw performance. Running the 'Sepia' action on a

1024x768, RGB image, for instance, the difference between the Linux and Windows 'version' was negligible. The situation was similar with *Quicken* and *Internet Explorer*; both installed and ran exactly as expected.

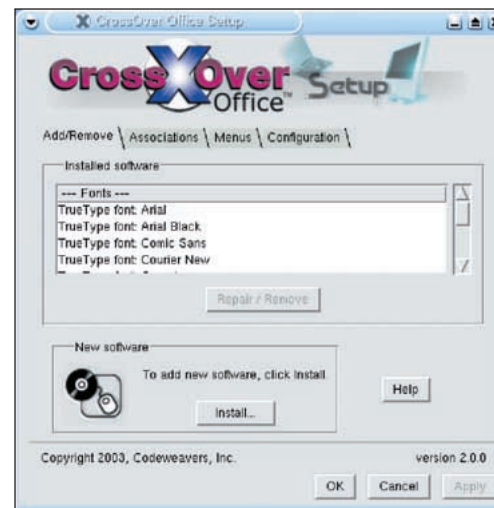
Finally I tried a few unsupported applications with varying success. Adobe's DTP package *InDesign* works great, but *Dreamweaver* is a non-starter; *Kazaa* works, *Bryce* doesn't; and I couldn't get any of my daughter's CD-ROMs installed, which is a shame as she's the only one left using Windows!

Conclusion

A complex task like emulating every aspect of a closed system is obviously going to be tricky, but COO does an admirable job of it. It's not a flawless application: WINE is notorious for its screen redraw problems and COO, though improved, still suffers from the occasional glitch. For instance, the menu items in *Adobe ImageReady* (part of the *Photoshop* suite) appeared inconsistent and sometimes failed to materialise at all.

The applications 'supported' by CodeWeavers work well, slight Help hiccup in Office notwithstanding, and it was gratifying to get a few apps that have consistently failed to work with WINE up and running here. Complete support for Office XP is promised for the next edition, so if you have upgraded beyond Office 2000, you'll be waiting around to use *Outlook* and *Access*. The ability to run *Photoshop 7*, and run it so well, is the real kicker for me. *The GIMP* is great, but it lacks CMYK support, essential for the print industry, and the esteem that Adobe's application is accorded by employers. Similarly *Scribus* comes nowhere near the features of *InDesign*, so it's nice to finally have those resources available without having to reboot. Similarly, banks don't appear, on the whole, to acknowledge the existence of anything outside of the Windows sphere, so being able to access you details through *IE* on Linux – though a compromise – is sometimes your only option. But it is an option.

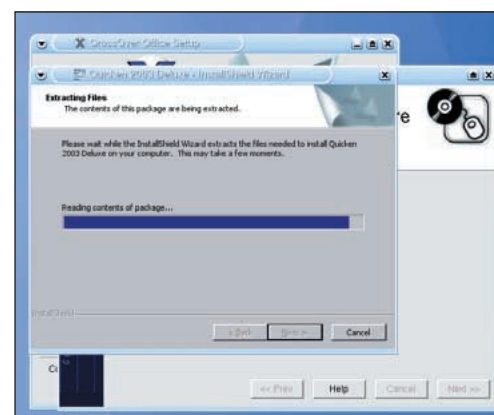
And that's what it comes down to. If there is one or two applications that leave you tied to Windows, and they're supported here, you can forego the need to dual-boot or, more significantly, forgo buying a bundled OS with your next hardware purchase. **LXF**



Installation is a very simple procedure.



Photoshop support is a major selling point.



The installation routine puts Quicken 2003 into KDE.



Photoshop and InDesign pose no problems for CrossOver Office 2.0.