Linux On The Desktop?

Could you really use Linux as a desktop OS instead of Windows? What would it look and feel like? And are Linux office suites good enough to compete with Microsoft Office?

By Julian Moss

Does Microsoft have a stranglehold on your IT strategy? Does part of your budgeting and planning effort involve trying to second-guess the software giant and its plans? Software licenses account for an increasing part of most corporate IT budgets and this situation isn't likely to change - at least, not while you use Microsoft products.

Falling growth in PC sales and a reluctance by users to upgrade their software has meant that cash isn't flowing into Microsoft HQ the way it used to. In response, the company is tightening its grip on users. There's increasing pressure to upgrade as support is withdrawn for older versions of products. Corporate customers are encouraged to enter into Enterprise Agreements, under which they pay an annual fee for the right to use the latest versions of all licensed products. This may look good at first sight, but it's designed to ensure a steady income for Microsoft, unaffected by upgrade cycles. By signing up to it you'll lose the chance to save money in the future by skipping an upgrade to a product.

If you don't wish to go down the enterprise licensing route you're likely to face tighter controls on product licenses, such as the product activation technology being used for Windows XP and Office XP. Microsoft claims that product activation will have little practical impact on corporate customers but the truth remains to be seen. And although copy protection should allow Microsoft to cut prices of its products as revenue rises, there's little evidence that it is willing to do so. Whether it involves you in extra time and trouble or not, there's little you can do if you don't like it. Microsoft has you where it wants you, and it knows it.

Want To Break Free?

The implications of all this have made some people start to wonder if there is a way to break free of Microsoft's grip. There is, but it's a step that will take courage. According to a recent IDC report, Microsoft now owns 96% of the desktop market. Switching away will make you part of a tiny minority. If saving money is the aim, the only real alternative is Linux, which is on just 1.5% of desktops, IDC claims. The Linux operating system and many of the applications that run under it offer zero licensing costs and a license agreement that puts the user back in control. This certainly looks attractive. But the primary function of IT systems is to enable people to do work. Is Linux really a practical choice for the real-world office desktop? Can your users really use a freeware Linux desktop to do what they currently do under Windows and Office?

Linux

Two to three years ago, Linux was on a roll. It was big in the server market, and still is, but many pundits were predicting that it would soon be ready for the desktop too. Investors flocked to buy shares in newly floated Linux companies. Today it's a different picture. The failure of desktop tools company Eazel and troubles at Loki (a developer of Linux games) suggest that the vision of Linux as a future desktop OS for the masses may have been just a mirage. Attendance at LinuxWorld in September 2001 was down on last year, and the atmosphere of excitement and optimism of previous years was also missing.

No-one could pretend that these are good signs. But reports of the death of Linux have been greatly exaggerated. The operating system itself has never been in better health. It's getting easier to install and configure, and its graphical desktop environments are more stable and user-friendly than ever. And there is a good choice of office applications for the platform. Technically, Linux has never been so well placed to take the place of Windows on the end-user desktop.

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In practice, however, strategic software decisions are made based on more than just technical issues. Proposing a solution used by just 1½% of people could be considered foolhardy. But there's a lot at stake. If you refuse to countenance other solutions you'll be handing control of the desktop - and your IT budget - to Microsoft for the foreseeable future.

Not Unix?

Linux is part of the GNU Project, set up during the 1980s to create a free clone of the Unix operating system. It is released under a software licence - the GNU General Public License (GPL) - that ensures you can install as many copies as you like without paying a fee for each one. You also get free access to the source code, which is more useful than you might think if you ever come up against what seems to be a bug in the OS.

Linux is a multi-user, multi-tasking operating system that runs on a wide variety of hardware. As a desktop OS it has broadly comparable capabilities to Windows NT and 2000. Security is good. Ordinary users can only write to private work areas (stored under the directory /home), which are normally kept on a separate partition or drive. This makes it easy to organise backups, as well as facilitating access via a network.

Every aspect of a Linux system can be controlled using text-based configuration files and command line utilities. These can be automated using a wide range of scripting tools, from industry-standard Unix shells to script languages like Perl and Python. It isn't hard, once you've mastered the principles, to develop your own scripts to automate system management. The major Linux distributions such as Red Hat and SuSE include tools for automated deployment, much as you may be used to using to roll out installations of Windows. Linux hasn't been just a hackers' plaything for years.

Desktops

Linux offers a range of graphical environments for desktop users. The most suitable for ordinary office use are KDE or GNOME. GNOME (GNU Object Model Environment) looks attractive and has some elegant design concepts, but KDE (K Desktop Environment) is more mature, more stable and looks more functional. Each has been created using a different set of programming libraries, and has "native" applications and accessories that use these same libraries. The choice of environment doesn't

Figure 1 - The KDE desktop isn't all that different to the one seen by Windows users.

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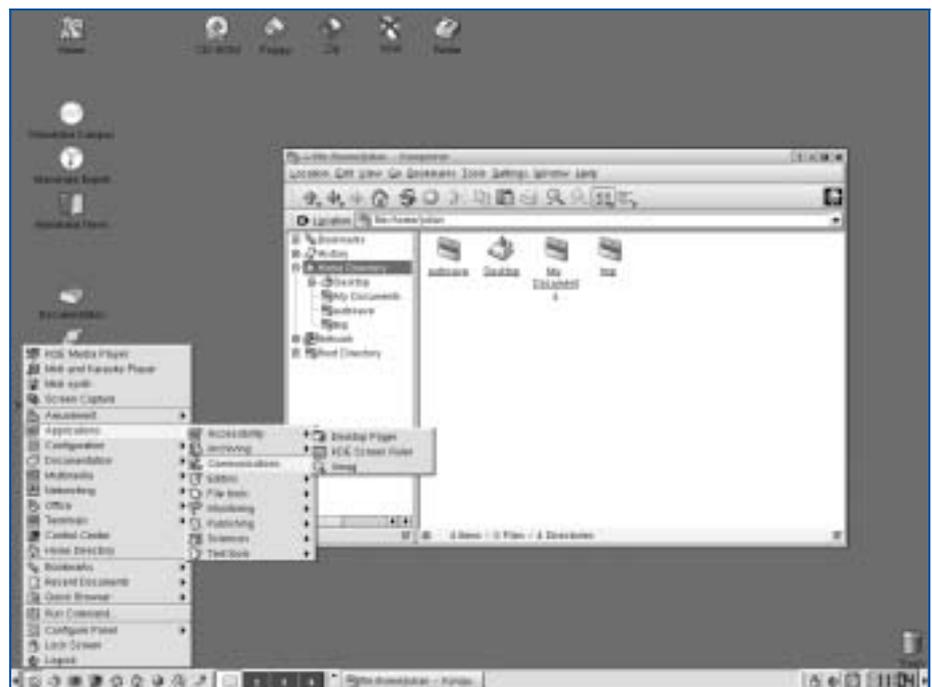
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restrict your choice of applications, for as long as the required libraries are installed any Linux application will run under any graphical environment. However, there are differences in look and behaviour that make it preferable to run both desktop and applications created using the same graphical libraries. All things considered, this probably makes KDE the best choice for a Linux office desktop.

KDE provides a graphical desktop with features like a pop-up application launch menu, task bar, quick launch buttons, an integrated file manager/Web browser and a control panel for customising the look and feel. Sounds familiar? You'll pick it up very easily, and any end user training materials you may have can quickly be adapted to make them relevant to the Linux environment. Some things are different from Windows, such as in the default drag-and-drop behaviour, context menus or the way applications are associated with file types. This is only to be expected, since KDE isn't meant to be a Windows clone.

Office Applications

There's no doubt that Linux and KDE can provide a stable and functional platform for your end users' computing needs. But their viability in the real world depends on the availability of suitable applications. At first glance there are plenty of choices, but some have disadvantages if you look closer.

Anyware Desktop (formerly ApplixWare Office) lacks a few of the bells and whistles boasted by some of its rivals, but it does have corporate users (running on Unix) and will be good enough for many people. To ease conversion for Windows users, you can choose at installation time to have a look that resembles Microsoft Office. There's a control bar similar to the Microsoft Office toolbar, and good online help. Anyware contains the basic components of word processor, spreadsheet, database and presentation manager, plus a graphics editor and an email client. The functionality of some of these components is quite limited, though.

Interoperability with the Windows world is another weakness, though one shared with some of its Linux rivals. Import filters for Microsoft Office are included with the package, but they either fail to import more complex documents correctly or crash during the attempt. Another point worth noting is that the current version of Anyware uses the GTK (GNOME Toolkit) graphics library, so it sits more comfortably on GNOME than on KDE.

Corel

Corel's WordPerfect Office suite should need little introduction, as the suite has been available on the Windows platform for years. The Linux version is essentially the same as the Office 2000 suite for Windows, less a few of the bought-in and bundled extras. It includes a word processor (WordPerfect) that can give Word a run for its money, a once world-beating spreadsheet (Quattro Pro), a database still beloved of many professional developers (Paradox), a good presentation manager and a functional personal organiser, and has the best online help of any Linux office package.

Sweeter Than Wine

"WordPerfect Office for Linux doesn't actually contain native Linux binaries. Instead, you get Windows executables that run under Linux using WINE."

Unlike other Linux offerings, WordPerfect Office for Linux doesn't actually contain native Linux binaries. Instead, you get Windows executables that run under Linux using WINE. WINE is an implementation of the Windows API that runs under Linux, written by another group of volunteer developers. It's an important technology for anyone considering migrating to Linux, since it may provide a way to run other Windows programs on the platform. However, like so many things in the Linux world, WINE is a work in progress. It had to be helped along by Corel developers until it reached the stage where it would run the office applications satisfactorily. And it still isn't perfect. It isn't unknown for an application to suddenly disappear from the screen, taking your work with it.

On Corel's current tack, it isn't certain whether the company will continue to bring out new versions of its suite for the Linux platform. WordPerfect Office also suffers from the problem of weak import filters, possibly the same ones that ApplixWare uses. For example, I have seen Quattro Pro hang when trying to open a fairly simple Excel worksheet. This will be a key consideration if you need to exchange .DOC and .XLS files with Microsoft Office users. All things considered, Corel's office suite for

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Linux, while coming closest to the kind of power and functionality of the Microsoft suite, is far from being the best bet.

Another Windows office suite making its way to Linux is Ability Office. This is a low-end suite pitched mainly at home users, so it's unlikely to be of much interest. It is being ported to the Linux platform using WINE.

Hancom

Hancom is a Korean distributor of Linux which has developed HancomOffice. The product is rapidly evolving. An English language edition of version 1.5 was released in August 2001, and version 2.0 should be available by the time you read this. It will include a word processor, spreadsheet, database manager, presentation tool, graphics editor, diagramming and flowcharting tool, Web page editor and personal information manager. The applications have a Microsoft Office look and feel, and are designed to work with KDE and other K applications. This product may be too new and unknown for anyone to consider basing a Linux office strategy on it just yet, but it's one to watch.

Two office suites for Linux are being developed under the GPL. However, they currently lack the maturity to make them worth considering for corporate use. KOffice, KDE's native suite, recently reached version 1.1. Besides the usual office applications it boasts a diagramming program similar to Microsoft Visio plus drawing and graphics programs. GNOME's office suite is more of a collection of programs, including AbiWord (word processor) and Gnumeric (spreadsheet.) Both programs are impressive mainly for their speed, compared to today's bloatware. But although Gnumeric could prove enough for occasional spreadsheet users, the suite as a whole doesn't yet merit serious consideration.

StarOffice

Last, but not least, is Sun's StarOffice, which stands out from its Linux rivals for a number of reasons. For one, it's completely free. For another, it's available in versions for Windows and Solaris as well as Linux. This is also useful for home users, who are more likely to be running Windows than Linux, but more than that, it allows you to start moving away from Microsoft Office without having to migrate your desktop systems to the Linux OS as well. Most important of all, it has by far the most functional Microsoft Office file filters of any non-Microsoft product, so the ability to exchange files with Microsoft Office users is, if not flawless, at least possible.

Another major difference, shared only with the user-developed GNOME and KOffice suites, is that StarOffice is open source. Sun retains the copyright, and continues to sell and support a branded version of the product under the StarOffice name. However, the source code is available for all to see, and anyone who wishes to do so can even participate in the development of the product as part of the OpenOffice project. There are therefore two flavours of the software: Sun's version, which is supported by Sun through a variety of plans, and the completely free, evolving OpenOffice, which is supported by volunteers.

OpenOffice is the most advanced version, and you can download the latest snapshot to try for yourself. Sun will roll new features into its version as and when they become tested and stable.

An unusual feature of StarOffice is that it has its own integrated desktop, with its own Start button and task bar. Users can, if they wish, work entirely within StarOffice. The desktop can be switched between the StarOffice desktop - showing the templates and folders specific to the office package - and the KDE or Windows desktop. The integrated desktop is potentially useful in a mixed platform environment as all users, on whatever platform, will see the same thing. But on the whole it is more disliked than liked. The feature is going to be removed from StarOffice 6, expected in early 2002, allowing individual components of the suite to be run separately. This should have the additional benefit of speeding up the package a bit: a worthwhile improvement, since the current version is even slower to load than its Microsoft counterpart.

The main components of StarOffice are Writer (the word processor), Calc (the spreadsheet), Impress (presentation manager), Draw (a vector drawing program), Schedule (a diary application), Base (a database), Mail (an email client) and Discus-

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sion, an Internet newsreader. Accessories include a graphing tool, a bitmap editor and a formula editor. StarOffice also has its own Basic macro language, which looks pretty similar to Visual Basic for Applications (VBA) although the package has a different object architecture and imported VBA macros won't work without modification. Macro code is automatically converted to comments during import to prevent endless error messages from occurring.

Star Writer is an impressive word processor that has many of the features users of Microsoft Word have come to expect like automatic spell checking, AutoCorrect and AutoComplete. There's a good range of field types, an outlining feature, and the creation of indexes and tables of contents is supported. Documents can contain tables, and table cells may contain formulas, giving a limited spreadsheet capability. Some features of Writer seem to be quite well hidden, though, and usability isn't up to Word's finely honed standards.

Good though the Word import filters are, some documents with complex formatting, such as manuals with icons and notes in the margins, don't convert perfectly. Formulas in tables are also lost during conversion. Star Writer doesn't handle very large documents as well as Word, either, especially on systems with limited memory.

Fonts are another compatibility issue on the Linux platform. Most Word documents are formatted using the TrueType fonts that come with Windows or Microsoft Office. Although TrueType font servers are available for Linux, the real problem will be obtaining legal copies of the Microsoft-supplied fonts that you can use under Linux so that documents created using Word look the same as they would under Windows.

HTML Editor

Star Writer is a pretty impressive WYSIWYG HTML editor. Like many editors of this type, it makes it rather too easy for users to do things that are bad HTML practice, and indecision over a document's format can leave the source code riddled with redundant tags. But at least Star Writer doesn't produce code that depends on Internet Explorer-specific extensions in order to be displayed correctly.

Star Calc, the spreadsheet, is the other important component of this suite. It's well up to the tasks most office users will throw at it. As in Excel, files can have multiple sheets, and formulas can access cells in other sheets and even other documents. Cells, sheets and documents can be protected, formulas hidden and cells made non-printing. There's a goal seeking function and a data analysis tool called Data Pilot, which is similar to Excel's pivot tables. Database files can be accessed in conjunction with Star Base, though on the whole Excel has better integrated data access facilities.

Star Calc's Excel import filters work quite well, but interchange between the Sun and Microsoft packages isn't faultless. Formatting is often lost, sometimes things don't convert correctly, and chart types change when a worksheet created by Excel is imported into Star Calc (and vice versa).

Star Base, the package's database, is no Microsoft Access, but it should suffice for the simple database needs of most users. Star Impress lives up to its name, however, as it is capable of producing some impressive presentations. Output options include "Webcast", in which the presentation can be shown to remote users across a network. A free player program is available to enable presentations to be viewed by people who don't have StarOffice on their computer. This is vital. How often have you been to a seminar and found the presentation machine running anything other than PowerPoint?

StarOffice includes an excellent Web browser. On Linux, in particular, this is especially useful as it avoids the need to use the awful and crash-prone NetScape Navigator. It displays pages that were designed with Internet Explorer in mind almost exactly as they would appear in the Microsoft browser. The StarOffice browser supports Java, though you need to install it separately.

Star Mail is a simple Internet mail client that does an excellent job of displaying HTML mail such as that created from "stationery" templates using the ubiquitous Outlook Express. However, its tools for filtering and managing mail are fairly

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limited, which could be a serious disadvantage to the heavy email user. The calendar application Schedule, while lacking some of the features of Microsoft Outlook, will prove sufficient for the needs of many offices. It has full network support, including the ability to maintain users' calendars on a network server. There's also a tool for synchronising appointments, tasks and address books with a PalmPilot.

Conclusion

Linux is certainly capable of providing a functional and stable platform for end user office computing in your organisation. However, none of the office suites available for Linux offers the full breadth of facilities provided by Microsoft Office, so it is only practical to contemplate migration if your users' needs are fairly simple, and don't depend on specific features of Microsoft Word.

Most of the Linux office packages suffer from poor import/export filters. This will be a serious handicap if there is a need to view files created by users of Microsoft Office. If there is a need to work collaboratively with Microsoft Office users and send files in both directions on a frequent basis, the minor changes that occur whenever a file is converted may prove too much of a frustration.

StarOffice is certainly the best of the office packages available for Linux. It isn't as intuitive as the Microsoft product, so some retraining will be required, and you should expect to receive many more calls for help in the early days of implementation. If you're prepared to consider taking this route, consider the implications of the changes forthcoming in StarOffice 6, which include the removal of facilities like the integrated desktop, and a change from proprietary native file formats to open XML-based formats. To minimise disruption to your users' work, it might be better to delay implementation until after StarOffice 6 has been released.

There's no doubt about it: moving to Linux and StarOffice will be a big, brave step. If you're bold enough to do it, though, there are substantial savings to be made. In the UK the Central Scotland Police claims to have saved almost US$400,000 by moving over 1,000 users over to StarOffice (though on Windows, not Linux) and a local authority has saved over US$200,000. Public sector bodies often have their budgets set in stone a long time in advance, so this solution, even if not ideal, may sometimes be the only way out of an apparently insoluble problem.

Even if migration to StarOffice and Linux seems too risky and time-consuming to contemplate, it's still something to keep at the back of your mind. The costs of licensing Microsoft products are unlikely to diminish as long as the company enjoys a near monopoly of the desktop market. The existence of a viable alternative to its products is the only thing that will put pressure on Microsoft to keep licensing costs down. And Linux and StarOffice will only be a viable alternative if enough companies are prepared to use them. It's up to you.

Further Information

Ability Office
www.ability.com

Anyware Desktop
www.vistasource.com/products/axware

Corel Linux
linux.corel.com

HancomOffice 2.0
www.hancom.com/en/product_service/office.html

The OpenOffice Project
www.openoffice.org

Red Hat
www.redhat.com

StarOffice
www.sun.com/products/staroffice

SuSE Linux
www.suse.de/en

The Wine Project
www.winehq.org

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