

Free Range Bulletin 03/01:

Broken Windows with Stronger Fences

Free Range Bulletin 03/01, by Paul Mobbs and the Free Range Network^[1], August 2003

Many people do not like the practices of large multinational corporations. Some work actively to campaign against such organisations, and change the system for something better. Why then do the majority of these people hand over control of their computers to a monopoly corporation, Microsoft, and pay large sums of money for the privilege of using insecure software?



There is a curious contradiction at the heart of the use of information and communications technology by activists – they seek to remove or reform the adverse impacts of corporate globalisation, but at the same time, most of them use the tools of this system to work and communicate. In particular, activist protest against the excesses of aggressive corporations, but most of them use Microsoft software on their computers. Why?

As I write, another virus is rampaging on the 'Net affecting ordinary computer users. I say 'ordinary', because most of the security problems inherent in the use of *Windows* hit the ordinary user the hardest. They don't have the money and expert support of corporate users. In addition to the security problems, there's the problem with the stability and reliability of *Windows* – the dreaded 'blue screen of death'. What adds insult to these problems is the prices people are asked to pay for these programs.

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Traditionally, non-corporate users of Microsoft software and other proprietary computer programs have relied heavily on piracy. Without the piracy of expensive computer software many activists and community groups would not have access to computer facilities. It didn't matter that extortionate demands were made for software because it could be installed, unlicensed, or using the key from someone else's license. But no longer. We are now moving into the age of 'digital rights management' – the control of the installation and use of computer software to provide technical enforcement of intellectual property rights.

What Microsoft and others^[2] are developing is the 'trusted computing platform' (TCP). Some may be aware that Microsoft's current *Windows XP* operating system must be 'activated' via the Internet or telephone. Activation allows the tracking of users, and prevents multiple installation using the same license. TCP goes further. It monitors running

programs and ensures that they are properly licensed by their users. If you run a non-TCP compliant program, all the other TCP-compliant programs shut down. Getting TCP compliance will cost thousands of pounds, so restricting the role of minor/independent software developers. It also monitors the files that your system uses, and prevents editing or copying if you do not have the 'rights' to do so.

What this means is that the Trusted Computing Platform Association – the association of software and hardware developers committed to enforcing the protection of intellectual property rights – will effectively 'fence off' control of your computer system. The system will decide what you can access, not the user. Everyone will have to pay for their software. It is also likely that the TCP platform, integrating with online systems like Microsoft's 'dot-Net' protocols, will enable not only 'pay-per-view' access of information online, but will control what people do with that information once they've downloaded it.

So, it's likely that not only will *Windows* still be pretty poor in terms of security, but the 'fences' erected by TCP will prevent you doing much about it. In fact, changes to the global system of law on intellectual property mean that if you

The costs of proprietary software

Buying a 'computer' is less than half the total cost involved. You have to buy the software too. So how much to get a good range of office software?

product	price
Microsoft Windows XP Home	£ 170
Microsoft Office XP Standard	£ 340
Microsoft Frontpage 2002	£ 130
Microsoft Publisher 2002	£ 100
Norton Anti-Virus	£ 35
Adobe Acrobat 6.0 Standard	£ 225
Adobe Photoshop 7.0	£ 500
Total	£ 1,500

even try to get around these systems, you can be sued for damages, or prosecuted, and even imprisoned.

In future, you'll have to buy all the software you use because your pirate copy won't work. Also, as the software developers may regularly authenticate the software online, they have the potential to disable it by refusing authentication. This also raises the possibility of them forcing users to upgrade old software.

Why do socially-conscious people support Microsoft by buying their products. Microsoft not only commits a form social larceny by demanding money from people so that they can create and communicate. They then use some of that money supporting political cause like George W. Bush and the corporate think-tanks that preserve the status quo that is damaging the planet and its peoples.

But, like many, you may say "what's the alternative?..."

The alternative has arrived!

We now have a *real* alternative to *Windows* (unlike the Apple Mac., which has always been as expensive, and has the same proprietary restrictions). You don't need a new computer, it runs on the old one. It's more secure. It also works in a similar way to *Windows* systems. It's called *Gnu/Linux*, and better still, it's free.

We should begin by qualifying the word 'free'. As one of the originators of the concept, Richard Stallman, states, 'free' does not mean 'free beer' – it means freedom of use. What Richard Stallman pioneered, through his 'Gnu Project' and later the 'Free Software Foundation', was a system of software licensing. He called this 'copyleft', on the grounds that it was the opposite of 'copyright'. It still uses the law of

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copyright to function. What differs is that the license allows the program to be copied and distributed for free, provided that certain conditions are met.

Through the Gnu Project, this new free software evolved to fill the space occupied by proprietary programs. But it lacked a 'system' – a free operating system on which to run free programs. This gap was filled in the early 90s by a Finnish student, Linus Torvalds. He developed a 'kernel', the core of an operating system, by working with other program writers over the Internet. So, we have both parts of the viable alternative to *Windows*. Linux, the kernel, and the licensing system provided by the Gnu Project that enables the release of applications – hence *Gnu/Linux*.

After ten years of evolution, the 'Linux' kernel now provides the platform for a whole range of free and 'open' programs that run the major part of the Internet and networks. The Gnu/Linux system is also beginning to challenge the dominance of *Windows* on the desktop too.

Linux was pretty much ignored by the mainstream until the late 1990s, when it was widely used to run Internet services. The significant change in the last two years is that Gnu/Linux now supports more desktop applications – Microsoft's major profits centre. So, for the first time, there is a realistic challenge to the supremacy of *Windows*.

The rise of the Linux desktop has created an ever more hostile reception from Microsoft. The wider intellectual property rights community also sees the success of Gnu/Linux and the GPL license as a threat because it flies in

Gnu/Linux Terminology

Kernel – The kernel is the heart of the computer operating system that works with the processor and hardware to make the system work.

The source – The code of a program.

Applications – Programs that run using the functions of the kernel.

Console or command line – programs that just use a text display and the keyboard to operate.

Desktop – Programs that provide the user with a graphical 'desktop', controlled using a mouse, like the Windows or Mac operating systems.

X-Server – A program, working with the kernel, that allows the Gnu/Linux desktop to function.

Distributions – A set of CDs that you buy containing the kernel, some desktop systems, a large number of applications, and an installer program that makes everything work on your computer. The popular distributions are *Red Hat*, *SuSE*, *Mandrake*, *Debian* and *Slackware*, although there are many more out there.

Unix – The proprietary system for large computers, developed in the late 1960s, that the structure of the Linux kernel is based upon.

GPL – The Gnu 'General Public License', the license agreement developed by Richard Stallman that forms the basis of 'free software'.

Open source – In contrast to 'free' software, 'open' software licensed allow access to the source code of the programs, but does not necessarily allow the reuse of the code, or the copying or redistribution of it.

GFDL – The Gnu 'Free Documentation License, like GPL, but for written, audiovisual or graphical media rather than computer software.

Copyleft – synonymous with the Gnu GPL or GFDL.

the face of their monopoly control over intellectual property. For example, Microsoft, along with others, has donated money to think tanks that oppose the GPL model.

One of the requirements of the GPL license is that when code from a GPL licensed computer program is used in other programs, those programs must also be issued under

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the GPL. This protects the investment of effort by the Gnu/Linux community in developing new applications. It ensures that no one can annex the community's 'common' assets for their private use. But Microsoft's management describe this feature of GPL as a 'cancer', infecting and replicating in programs. Mainly, it prevents proprietary interests from stealing the code and using it.

In fact, the GPL model of software development is more efficient. Programs can be incrementally developed, problems can be incrementally fixed, and code improved rather than 'relaunched'. This is in contrast to the methods used by Microsoft. Here code is regularly re-written to provide a 'new' system – in the process creating bugs and security holes. As part of this process, code is often brought in from sub-contractors, or from companies that are bought-out whole by Microsoft, meaning that there is no continuity of development – the 'not invented here' syndrome. This is also one of the reasons why, along with the general design of the system, *Windows* has security and reliability problems.

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OK, so what can it do?

It is difficult to describe what you can do with Gnu/Linux because, generally, it does pretty much everything. What matters is the precise detail of what you want to do, because sometimes you may find conflicts with the files produced by proprietary applications.

Using Gnu/Linux, with a desktop such as *KDE* or *Gnome*, everything looks and feels fairly similar to using *Windows*. Many of the bread-n-butter applications – word processors, spreadsheets, etc. – are supported by Gnu/Linux. They are also compatible with the files produced by many of the leading proprietary programs, such as Microsoft Office.

For example, what you are reading now was produced using the *Open Office* word processor, similar to *Microsoft Word*.

Major applications

There are a number of applications that are significant for those wishing to use Gnu/Linux for desktop applications:

KDE – A desktop with many applications written for it, and containing many features within the desktop. However, this makes it one of the 'heaviest' of all the desktops to use. One of the more widely used desktops.

Gnome – A feature rich desktop, like KDE, but with a few less features integrated into it making it a little less resource hungry. After KDE, one of the more widely used desktops.

Open Office – An office package similar to Microsoft Office, and is compatible with the files produced by Microsoft Office. It contains a word processor, spreadsheet, presentation graphics, and vector drawing applications.

KOffice – Another office-like suite, developed for the KDE desktop.

GIMP – The 'Gnu Image Manipulation Program'. A graphical edition application similar to Adobe Photo Shop.

Evolution – An email program that includes scheduling and calendar features, similar to Microsoft Outlook.

In addition to these applications, there are many other common applications that run on Linux such as Netscape, Opera, Adobe Acrobat viewer, Real Player, as well as players for MPEG and Quicktime movies and MP3 files.

Graphics were produced with *Open Office* and the *GIMP*. The Adobe-Acrobat-like portable document file was exported with a filter program integrated into *Open Office*, in a similar way to how *Adobe Acrobat* produces its files. Finally, the web version was written using a text editor, and the designed mastered on a web server, working simultaneously on the same computer, in order to test all the additional features such as server-side includes. The difference is that rather than costing in excess of £2,000 (including the web server software), bought as part of the *SuSE 8.2 Pro* Linux distribution it cost just £70.

Gnu/Linux was developed on the same model as the Unix operating system. This heritage means that there are a large number of programs available to perform an indescribable range of operations. More importantly, the system design means that it is far, far harder to spread viruses because of the controls that prevent the alteration of system files, or the execution of programs. Even if you were to run a virus program, which would require a number of conscious steps by the user, it could only affect the data owned by a single user on that computer.

Graphical applications are a relatively recent development.

But the model of development built around the GPL license means that people do not have to waste effort to 'compete'. Instead, they are compatible with one another. The result, people work for the benefit of the community as a whole, not one small part of it.

For example, the graphical display for Gnu/Linux is provided by a set of programs called the 'X Server'. These make the graphical desktops, such as KDE or Gnome, work. The commonality between these different systems means that Gnome programs are compatible with KDE programs, and vice versa. Alternately, programmers can forget the graphical desktop and work directly with the X Server to produce their own graphical applications.

The bigger picture

Gnu/Linux has developed because of the way that the software is licensed. This has in turn spun-off the Gnu 'Free Documentation License' (GFDL). This has allowed people to develop online training manuals, and even published books, under a license that allows copying and free re-distribution. This may seem nonsense from the traditional standpoint of 'ownership'. But what free licensing allows is for one object to be simply owned by many people, so multiplying the resources available to develop and maintain it.

The other aspect of such 'common property' is that it assists the development of a 'community' of interested people. Using free systems they can set up their own systems for a fraction of the usual costs. For example, the Free Range 'Community-Linux Training Centre'^[3], a mobile computer lab set up to teach community groups how to use computers, cost £2,400 to set up. Developing a similar system using Microsoft software would over £12,000.

The other aspect of this free and associative form of development is that once something is set up, using information and communications technology as the glue to hold it together, information can be developed collaboratively. But, on the larger scale, others with similar interests, but perhaps not part of the initial group, can pick up the information and improve it. So, whether its computer programs, written works or clip art, this new model of working develops a powerful, grassroots-based method of sharing resources – wholly in opposition to the model being promoted via economic globalisation. Isn't this nearer to

what grassroots activists are working towards... so why use *Windows*?

Where do I go to get Gnu/Linux?

To support or work around Gnu/Linux, the Free Range Network are providing information and links via their web site^[4]. We suggest you try this for more details.

There is lots of information online, perhaps too much for the beginner! A good starting point is either:

- Linux Online – <http://www.linux.org/>
- Linux Newbie – <http://www.linuxnewbie.org/>

Many large bookshops sell Gnu/Linux distributions in the 'computer' section – which is often the easiest method of getting a copy, although not the cheapest. There are also three magazines on sale – *Linux Magazine*, *Linux Format* and *Linux User* – at larger newsagents.

However, there's no need to absolutely commit to Gnu/Linux today. Most distributions allow you to 'dual boot' your computer. When you start the machine, you get to choose whether you boot into *Windows* or Linux. It is also possible to buy Linux distributions that fit onto one CD, or that install into the *Windows* file system. So you just boot from the CD, or run the program from Windows, to start Linux. Dual booting allows you to learn how to use Linux before migrating fully. It also means that if there are certain things that don't work under Gnu/Linux, such as scanners or digital cameras, or your favourite game, then you can still boot into *Windows* to use them.

So, why do you need to keep using Microsoft products? Dump them, and get the socially-conscious alternative.

References:

- [1] Paul Mobbs is a consultant and 'cyber activist' working with the Free Range Network, a loose association of grassroots activists and community consultants. For more information see the Free Range Activism Website – <http://www.fraw.org.uk/>
- [2] See the web site of the 'Trusted Computing Platform Association', – <http://www.trustedcomputing.org/>
- [3] <http://www.fraw.org.uk/cltc/>
- [4] <http://www.fraw.org.uk/rangers/>

The Free Range Network is a 'disorganisation' of activists and specialists that organises workshops and develops information resources for community and grass roots campaigning organisations. Free Range Bulletins are produced on an occasional basis, and are intended to promote debate and learning on current campaign issues.

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