The best things in life are **free**

In a capitalist society, is there a place for free software? asks **Chris Bidmead**. Plus, how Emacs can improve your vocabulary, and Linux joins X/Open

Some months ago, I told a story in this column about the day I confronted Bill Gates with the ideas of Richard Stallman, founder of the Free Software Foundation, author of Emacs, and one of my personal heroes. "Shouldn't all software really be free?" I challenged Gates. He thought for a moment and then came back with what struck me as a brilliant response: "You're right," he said. "And all hardware too."

People call Stallman RMS, in part because those are his initials, but also, I suspect, because "Root Mean Square" fits him to a tee. I know he'll object to my saying this (he seems to object to most things) but he's "Root" because he's the father of GNU (which, come to think of it, is most of what you're using when you're using Linux); he's "Mean" because he sits truly in the dead centre of all this, but also

because of the surliness of his pronouncements (see below); and he's "Square" because he's perfectly happy to sound off about "moral values" in a way that falls quaintly on the modern ear. Both despite and because of all this, he remains my hero. Here's what he said when I told him about my exchange with Bill Gates:

"Sorry to disappoint you, but this is a common response. It comes from a common misunderstanding. Free software is a matter of freedom, not price. It refers to the freedom to copy and change software. The actual price of the computer is pretty much a moot point. You are, in fact, free to modify your computer, but few people want to risk any sort of modification beyond swapping components. If you change the wiring, you might break it, and
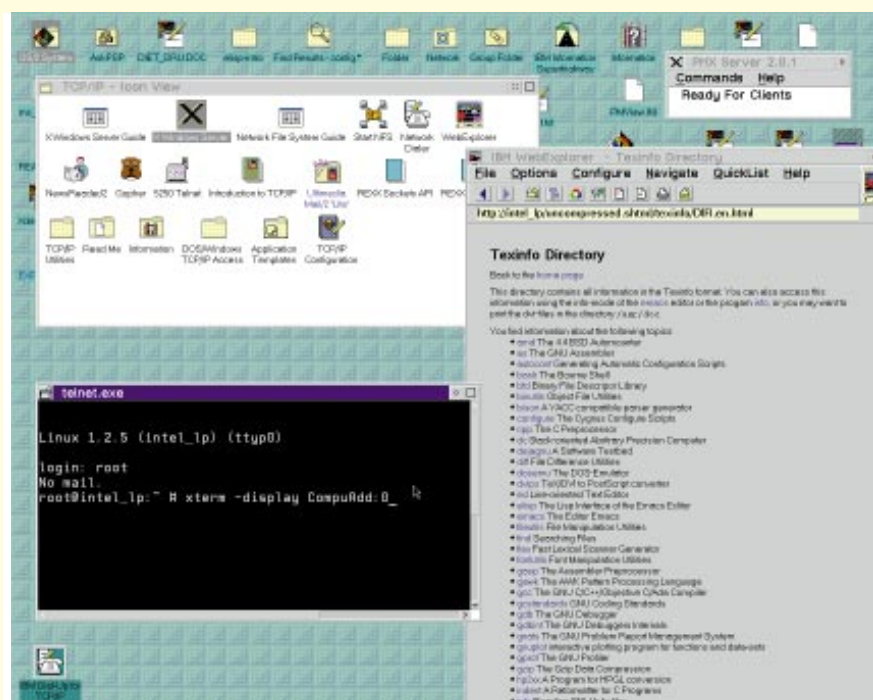
it would be hard to fix. As for copying the computer, until someone invents a copying machine for computers, this is simply not feasible for people like you and me.

"When people think that free software is a matter of price, the idea seems silly to them; "Why not free hardware too?" is an obvious way to express their derision. But they just show they have not understood."

I'm chastened. The importance of "free software" is not that you don't have to pay for it, but that it's "freely adaptable" by the user (because it comes with source) and "freely distributable" (because the licence terms encourage it). Nevertheless, as a side effect, GNU has made software cheap to get hold of, and look what's happening to hardware. Maybe Gates' wish is coming true. When I mentioned in this column early last year that I knew where to get obsolete but workable full height 1Gb drives for £150, there was a tremendous flurry of interest from readers. A year on, this has become the street price of some of the latest low-profile gig drives.

Emacs just gets better

I've already explained some of the reasons why I feel Emacs is the ideal text processor. The reasons are multiplying every time I sit

On the road to that integration of operating systems I hanker after, my Warp Connect system has become a window into my Linux box. We've already talked about using OS/2's Web Explorer to view HTML files on the remote machine (bottom right). *Telnet comes with Warp Connect: it's giving me a text terminal into Linux* (bottom left). *IBM's X Server for OS/2* (top right) *adds another dimension. I'm using the telnet session to evoke xterm on the Linux box, but asking it to use my OS/2 CompuAdd machine to display it via the X Server*

It's nice to be appreciated

David Sexton (D.R.SEXTON@tees.ac.uk) writes:

I have been a reader of your column in PCW for a couple of years (about as long as I've had Linux to play with). Now that I (eventually) have Internet access, can I express my appreciation for the only column which covers the "'less popular" OSs.

I have a few suggestions/questions:

1. *Now that OS/2 has its own column and NT hardly ever gets a mention, why not be honest and rename this the Linux column?*

2. *Could you persuade the CD editor to place a new distribution of Linux on the cover CD reasonably soon? A load of Linux users without (or with an unstable) Internet connection will be eternally grateful.*

3. *Caldera. Where do you get it from? Is it GNU or commercial, and if it's commercial, do they do (seriously huge) student discounts?*

Thanks very much for the kind words about the column, David. It's nice to know people are reading this stuff and getting something out it. I've thought about the predominance of Linux here, but I really do want to keep looking at 32-bit operating systems in general (and general 32-bit-ness). Linux happens to be an excellent and easily accessible example, and I know from the mail I get that a lot of readers are interested in it. But there are things about Windows NT (and about OS/2) that exemplify 32-bit goodness rather better, and I want to keep with them in a general way.

I've been getting a lot of mail asking for cover-mount Linux. Alas, I'm only a humble columnist – these production issues are decided by editorial luminaries. To whom, however, I will pass on the suggestion.

Caldera is proprietary — well, the Caldera proprietary stuff (which includes the NW client) sits on top of a free distribution of "RedHat Commercial Linux". By the way, the Linux usage of the word "commercial" in this sense simply means "industrial strength". At the time of writing, the Caldera Preview is still going cheap because it's still in Beta, but it's due to be released at around $100. You can mail them on info@caldera.com for details on how to get a copy.

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down to use it. Did I mention, for example, the Alt-/ command? I should perhaps call it the "dabbrev-expand" function, as Alt-/ is only the standard binding (the key that evokes the function) — none of these functions really care which key you attach them to.

Type Alt-/ in the middle of writing a longish and/or technical word like "dabbrev-expand" and the function will search backwards through the text (and forwards too if you happen to be editing in the middle) and offer an intelligent expansion of the word. If the expansion is wrong, you just hit Ctl-/ to undo it — a least that's what I've been doing until today. Experimenting with dabbrev-expand this morning, I discovered that repeatedly hitting Alt-/ cycles through the various possible expansions of the root you've used elsewhere in your text. It will even start looking into text in other buffers. So if I've written "par", and Alt-/ offers "party", which is not what I want, a second Alt-/ gives me "parading" and a third try suggests "particularly", which is what I was after. That's a 12-character word typed in six keystrokes, and believe me, it's handy once you get going.

I've also just discovered more depth to Alt-/ (sorry to bore Emacs afficionados, who will know all this already, but this is exciting news to me). Type a complete word, follow it with a space and then hit Alt-/ once or several times, and what you get is a cycle of suggestions for the next word, based again on the sequences you've used elsewhere in the text. Say, for example, that wherever the word "crystallographic" occurs, it tends to be part of the phrase "crystallographic orientation". Once "cry Alt-/ has found "crystallographic", if you type space and hit Alt-/ again, dabbrev-expand will complete the phrase.

Emacs has some neat features you won't find in your costly word processor. It's also free software in the GNU sense of the word. But finally, look at the way these features are implemented, and look at their depth. There's a design philosophy at work here — for example, the recognition that expanding a string that ends in a space should be handled in the same way as a part-word string that doesn't.

Into the Open

As regular readers of this column will know, Lasermoon, together with its German partner, Thinking Objects, has created the excellent Linux-FT distribution. What you may not know is that the partnership has gone into the X/Open Consortium as an Independent Software Vendor (ISV) member. X/Open is a standards body that issues branding for Unix operating

systems when they meet certain closely specified design goals. Ian Nandrha, boss of Lasermoon, tells me he is seeking compliance. This is not just because it's nice and orthogonal to adhere to standards, but because it's the only way to guarantee to support a product (how do you fix something if there's no way to test if it's broken?).

It's a big decision for a small outfit. Just joining X/Open costs a minimum of $22,500 per annum. This is optional: you don't need to be a member to carry out the branding exercises, but Ian wants a voice inside the Consortium. The cost of using the various X/Open brand names varies depending on the size of the ISV. Graham Bird, branding manager at X/Open, tells me that for a small company this could come to "as little as $25,000". And if they want to call the resulting conforming operating system "UNIX"? (note the all-caps spelling — that's the official X/Open brand name, although magazine sub-editors can always be guaranteed to turn this into "Unix". I'm inclined to stick with "Unix" too, when I'm talking about the family of operating systems in general, although I know X/Open hates this). Well, calling your product UNIX once it actually conforms will cost you another annual fee again, which depends on how many units you ship. For Ian, this will probably work out at about another $25,000.

Ian is potentially into the X/Open Consortium for the best part of $75,000. But Graham says this pales into insignificance alongside engineering costs such as rebuilding Linux so that it actually meets the specifications and passes the various tests. "There are a lot of us in X/Open who regard it as a big step forward to get Lasermoon into the community," he says. "But I suspect it's going to give him a few problems among his own people, who will regard him as having gone over to the 'forces of darkness'".

Graham Bird is delightfully frank about the forces driving X/Open. "There are largely three groups," he says, "those who have got religion, those who are there to observe and see what impact if anything it has on their business, and those who are there to slow it all down." One might guess that his last classification refers to certain hyphenated and three-letter acronym companies whose main goal is to push their own brand of Unix, not to improve interoperability.

Ian Nandrha is going to have to pay for all this out of sales, and I'm guessing that he'll end up selling his own version of Linux for something like £200 a shot. A bit steep, you might think. Bear in mind that Linux is distributed with source, able to be copied across a number of customers' workstations without licensing formalities, and with the same X/Open accreditation as operating systems such as AIX that command a four-figure price. For commercial customers it'll be a snip.

From inside X/Open, Graham sees this as "a really interesting debate. It will focus attention on what you're actually buying when you pay company XYZ a large amount of money for an operating system. Are you buying a warm comfortable feeling that they're there if it breaks, so it's OK to run your mission-critical systems on it? All those issues will start to come up. Do you want to supply the support internally, so it's valuable having access to the source? It's about the business model that people want to adopt."

Graham and Ian have been talking for about nine months. Initially Graham was

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sceptical: "I said, Linux? Nobody runs their business on Linux. But when I went and looked at the newsgroups, I saw that there really are companies — some of them quite surprising, like the BBC — who are prepared to do just that. Clearly what Lasermoon wants out of X/Open is the seal of approval, the goodness, that will put them on a level pegging with a $65 billion company like IBM."

Once Ian gets this remarkable effort underway, I believe that businesses are going to start exploring the very real advantage of having the source code. Linux is already becoming a favourite operating system for Internet service providers. With the source code handy, they can do fixes and modifications in days that would take thousands of dollars and possibly months if they were running Unixes from IBM or Hewlett-Packard. These companies are obviously not going to go away, but they are going to have to think hard about what exactly they are giving their customers for their money.

"What this industry needs is a bit of a shake-up," says Graham. "Unix needs to compete aggressively with other proprietary systems, it needs widely available applications, and at prices competitive to

other systems." The dread word Microsoft doesn't pass his lips, but clearly he is talking about Windows and Windows NT. "None of which is happening right now. To have Linux people demonstrating that they are serious about putting out a compliant product — and being prepared to stick with the discipline that inevitably needs — turns this into a serious platform."

Yes, but hang on a minute. Solaris, AIX, Digital Unix and HP/UX are serious platforms already. What's so special about Linux? What has impressed X/Open is the sheer volume. "Linux claims — and I've no reason to doubt it — to be shipping 40,000 units a month in North America alone," says Graham. "That makes everybody else's Unix shipments pale into insignificance."

I've avoided saying "Watch out, Linux is coming" in so many words, because the "serious Unix" people tend to laugh. But this view comes from inside X/Open, owner of the UNIX brand name. The volume is amazing, when you compare it with Sun, which probably ships something like 350,000 units a year worldwide. IBM and HP move around 100 to 200 thousand units apiece. The big volume Unix business has traditionally been associated with SCO, because of all the Intel boxes out there. But Linux is even outshipping SCO. "So these guys are coming in with half a million units a year," says Graham. "They could have a profound impact if they can be perceived in the market place as a serious, viable, dependable supplier."

That may not be quite how you'd characterise Lasermoon today. When Graham Bird met them he found "A typical development shop. They've got machines with no covers on, and yesterday's lunch is still sitting on the bench. A small organisation — two men, and the dog's part time." That was about six months ago. The company has grown since. "Ian says they're now 13 people, and the dog's full time," says Graham.

But even on that first visit, Graham was impressed by the company's "air of seriousness". He believes that Ian Nandrha carries credibility. "And he's got a lot of personal fans inside X/Open. There are a number of us here who are really rooting to get him on board and make it as easy as possible for him. To be frank, this could really wake things up."

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