

WHAT'S ALL THIS ABOUT LINUX?

BY TERRY J. ERICKSON

In 1991 Linus Torvalds, a nice 21 year old Swedish-speaking Finn was a computer programming student at Helsinki University. He learned programming by working on a big main-frame machine at the institution. Huge computers like that ran Unix, a powerful standard operating system software created in the 1960's and which is still very much in use today on Internet servers, and for other purposes.

Linus enjoyed creating programs to run on these Unix machines. He loved the simplicity, efficiency and power of the multi-user Unix OS (operating system). However, one aspect of working in this field was a real bummer. At home, on his little 386 PC, Linus had only a couple of lame choices of software to run. MS-DOS was okay for a home user, but never could hold a candle to the beauty and power of Unix. Minix was sort of a commercial version of Unix that was made to run on personal computers (PC's) but Minix had programming limitations and was not free.

So Linus Torvalds decided to use his programming skills to create an all-new, free, Unix-type OS for his 386 PC. Actually at first he meant it only to test some aspects of the 386 chip. It was part of his schoolwork. It was to improve his programming skills. When he posted the following article to an Internet bulletin board in 1991 heads turned:

From: torvalds@klaava.Helsinki.FI (Linus Benedict Torvalds)
 Newsgroups: comp.os.Minix
 Subject: What would you like to see most in Minix?
 Summary: small poll for my new operating system
 Message-ID: <1991Aug25.205708.9541@klaava.Helsinki.FI>
 Date: 25 Aug 91 20:57:08 GMT
 Organization: University of Helsinki

Hello everybody out there using Minix —
 I'm doing a (free) operating system (just a hobby, won't be big and professional like GNU) for 386(486)AT clones. This has been brewing since April, and is starting to get ready. I'd like any feedback on things people like/dislike in Minix, as my OS resembles it somewhat (same physical layout of the file-system due to practical reasons among other things). I've currently ported bash(1.08) and gcc(1.40), and things seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them.

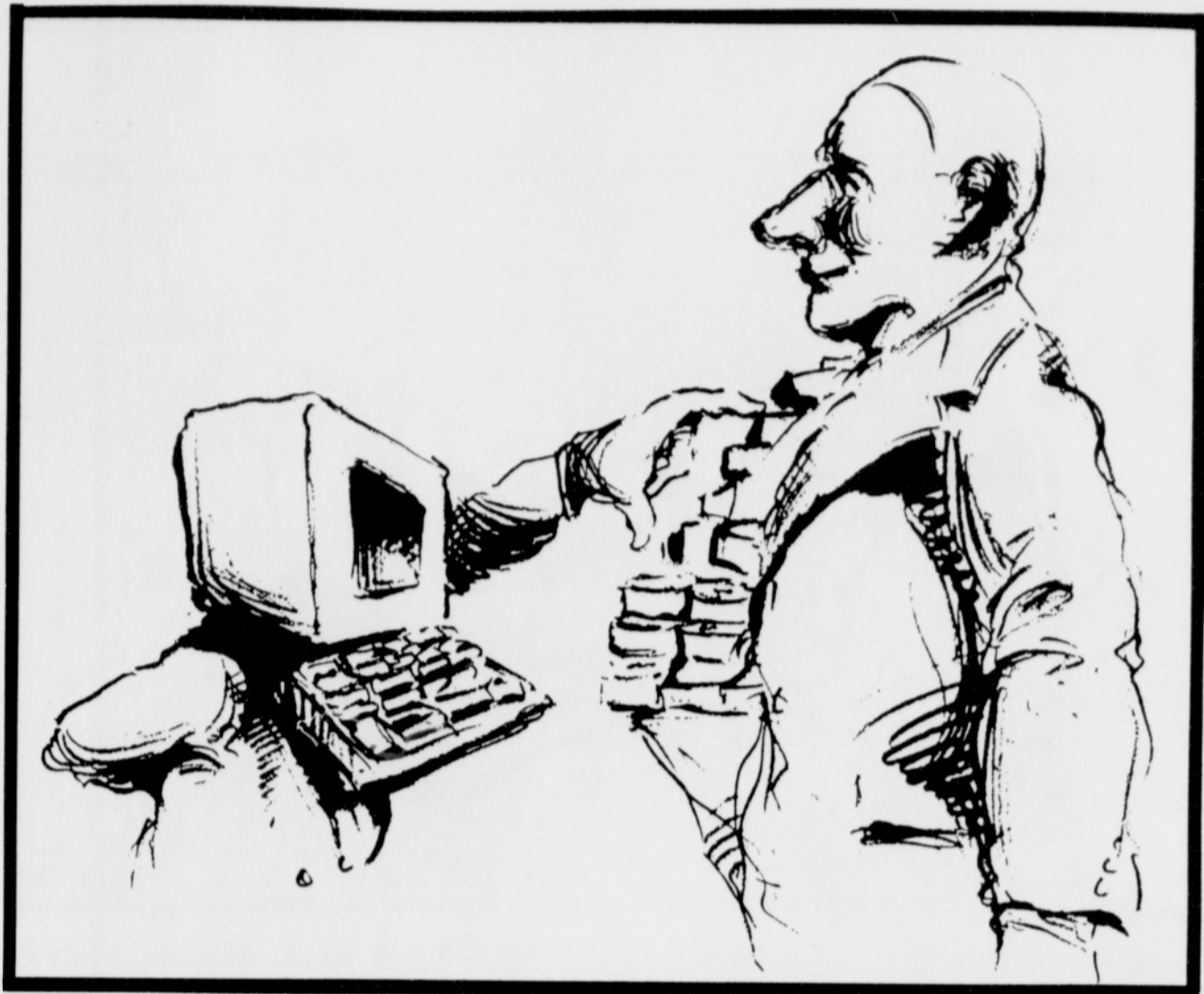
Linus (torvalds@kruuna.helsinki.fi)

PS. Yes — it's free of any Minix code, and it has a multi-threaded fs. It is NOT portable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have...

A few people expressed real interest, and some contributed useful code. This was a point when it actually worked on Linus's machine, but imagine the problems he would have faced at first, such as not being able to see the output until making the display work! How can you type instructions to your new OS without a keyboard driver? Seems tricky to me. During the next year, however, with the help of collaborators all over the Internet Linus was able to create a new kernel. The Linux kernel allowed folks to use — at home, on their PC's — a great body of free software that had been created by open-source developers during the last couple of decades for use on UNIX, and in anticipation of a viable, free kernel being released (google Richard Stallman, GNU license.)

Linux is free software. This means more than simply that its price is \$0. It means you can take it and do anything you want to it. Hack it, modify it, make it do anything. But you must extend these rights to anyone to whom you provide the software! And you can charge money to distribute the software and/or to provide support — as long as the Source Code remains freely available to view and modify. The GNU Public License takes care of that.

This is the hugest difference between Linux on the one hand and proprietary OS's like Windows, Mac, and Unix on the other. Joe Blow programmer isn't allowed to (and can't) see the Source Code of the operating system. Source Code means the OS itself, in the form of programming language. When a person buys a CD or downloads a program from the Internet, that program is most likely already compiled. This means it has been reduced to its lowest common denominator of ones and zeros and can no longer feasibly be read by the human eye. Reverse-engineering compiled software like Windows is next to impossible as far as I know. Only company programmers are allowed to see the code Windows is made of. Likewise for Mac and SCO Unix, to name a few examples.



GERALD MOSS

Unix is a powerful train that is owned by big corporations and conglomerates. Anyone can get on for a fee, and it'll take you to a lot of great places, but you can't drive it home.

DOS is a cheap bike that you could probably fix yourself, if it broke.

A Mac is a turbine-driven Volkswagen or a sort of space ship. It'll take you anywhere a civilized human would want to go, but the engine compartment is hermetically sealed. Take it to the Mac Store if anything goes wrong. And it costs money to own these. They're for folks who want the very best and will pay for it. And since only 5% of people have Macs, it's sort of become a club.

Challenged by the upstart Apple Macintosh in the 1980s and early 1990s, DOS was transformed by a great surge of business-like creativity at its home company, Microsoft. Windows became a fancy Cadillac with power steering and power brakes — and an (after-market?) radio that just might also be a spy listening device — or might not be. We can't tell for sure because its engine and the radio are hermetically sealed. And the price of Windows is still around a hundred bucks (unless you live in some countries in Asia, in which case it's a fraction of that.)

Linux is a free, freely moddable sport-utility vehicle that goes anywhere, emits no pollution, carries as many as you like, goes a million miles an hour, and costs nothing to operate. True, you will need some basic skills to set it up. It may not be for everyone, but the engine and transmission are easily accessible to those who have the inclination to tinker.

It's easy to install and use. I've installed several versions of Linux operating systems on hundreds of machines. It's usually just as easy or easier to install than Microsoft Windows. If you're choosing a Distro (flavor?) these days, I recommend Ubuntu. It's super easy. During the installation, you choose or create the hard disk partitions to be used. Ubuntu will not overwrite your Windows partition if you choose not to. It's a pretty hairy proposition installing another OS alongside your Windows, but Ubuntu has always performed admirably, creating a dual-boot situation perfectly every time. You see, the Ubuntu developers know that the average user will not give up his Windows or other OS before trying Linux. Ubuntu is just as easy to use as Mac OS X or Windows XP, and it has some enhancements I like a lot.

Security? Linux is created by expert programmers for their own use. It's put to use by all types of computer users worldwide, including corporations like IBM (which also sells Linux Servers). It's well known to be much more secure than Windows. Your Linux box can't catch the same worms and viruses users of Windows get.

Aside from a little difficulty finding the 'History' button in Mozilla (there is none: hit "Go" and then "History"), most people, including Pierce Christie at the Maltalternative Music Exchange in Astoria, find Linux to be a feasible alternative to Windows. E-mail and the web work fine. Writing a letter, creating a database, burning a CD, opening a Microsoft Office Document, all can be done with ease on a machine equipped with a recent version of Linux. Many of today's most awesome 3D games have a version for Linux, 'Unreal Tournament' and 'America's Army' to name two. I find that the Linux versions of these games is generally more robust (don't crash) than the Windows version. I think this results from the OS's native stability. There's a growing community of Linux-only games, too.

I watch movies, play high-quality music, create web pages, type documents (e.g. this one). Although GNU/Linux has its own native programs that can fulfill the average user's needs, some may yearn for more Windows-compatibility. How about using Wine and running 90% of Windows programs under straight Linux? Or how about using a "virtual machine" program to actually run Windows itself in Linux. (Too cool, huh?)

Linux, along with Apache Server, has been commonly used for many years for practical Internet purposes such as for a Web server, FTP server, Mail Server, DNS, etc., and is known to be among the very best and most secure for these jobs.

In the past couple of years, however, great advances have been made in the graphical interface department, and in making existing and new programs more user-friendly. Those of us who grew up with Windows but have always wished for more now can have a rich and rewarding experience using a choice version of Linux!

Why should any normal human be interested in Linux? I confess I don't know, unless s/he wanted privacy, security, the real true power of the Internet, and a computer OS that never crashes, all for free.

To learn more on the Web, you can search with google.com for Linux or 'Linux distributions' or 'free software GNU' or 'Ubuntu' or something like that. Or just go straight to <http://ubuntulinux.org> or www.linux.org or www.kernel.org or maybe linux-mandrake.com.

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