

## THE COMPUTER CORNER

# No. 218: Why Not Consider an Alternate Operating System?

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Tired of shelling out dollar after dollar every couple of years for a new version of Windows? Tired of Microsoft putting impediments in your way to continue using the old version? Tired of their attitude that your machine is not really yours, but rather, theirs? Well, there is a solution. You can have a fast, slick, desktop-driven operating system that will do anything that Windows will do, including running Windows programs, or even running Windows itself. And it will not cost you a cent!

Do you want proof that it is good? Have you ever done a Google search? Google employs a bank of over 5,000 computers that all run this alternate operating system, exclusively. That's the only way a Google search is done, and it yields the fastest, most complete results!

Of course, I am talking about Linux. You have certainly heard about it before. But what is Linux? Is it really free? Where is Linux, Inc., or whatever the parent company of Linux is known as? How do they market their product? Lets examine all that in this article and beyond.

Bell Labs developed an operating system (OS) way back in the mid-1970s called Unix. Unix was popular for big computers known as mainframes back then, and several different versions sprouted from the original Unix that were tailored to different business and scientific goals. But Unix was costly. It was not free to use by just anyone.

A student named Linus Torvalds began to write a freely distributable version of Unix around 1991 as a class project. He wanted something that would run on '386-based PC and that would not cost anything to use. He started by writing an assembly language version of the *kernel* (the kernel is the basic core of an OS that controls the interface between hardware and user programs, scheduling of events and other activities that represents the actual guts of an OS.) Linus' early versions were kind of a mess and did not always work, but he kept with it and improved each early version. From the beginning, he made his source code freely visible and freely distributable, and he asked that others look at it, as well. Programmers and also professional code writers began to play with the coding, and they sent their improvements to Linus. Finally, by March 1994, Torvalds released Version 1.0. He had started one of the largest software development activities of all time.

Linus Torvalds himself wrote only about 2% of the kernel. The rest was written by a loose collaboration of people on the Internet. Linus continues to hold the largest authority in deciding what new code becomes incorporated into the kernel, and these are released often. The latest, kernel Version 4.5, was released on 13 March 2016.

By the way, Linus wanted to call his work Freax, but his friend who administered the FTP server that held the kernel for downloading did not like the name, and renamed it Linux instead (without consulting Linus). But Linus said OK to the change and it stuck as the name for the new OS.

Another by the way: How do you pronounce the word *lean*? That's the way you pronounce Linux. Just say the word *lean* and add ux to the end. A search on the web will yield Linus Torvalds himself pronouncing his own name and the name Linux for you. You can't get a higher authority than that for how to correctly pronounce Linux!

Linux is free and open-sourced. Open-source means the underlying source code may be used, modified and distributed by anyone, commercially or non-commercially. So those who wrote the Debian distribution, or any of the others – Ubuntu, Linux mint, Fedora, openSUSE, Arch Linux, etc., have agreed to make the source code freely available for anyone to download, modify and redistribute. Further, the “free software” development model as exemplified by Linux and defined by the Free Software Foundation opens up all development, testing, debugging and study of the program to anyone, without license fees.

So, rather than relying on a single company such as Microsoft to develop and maintain a piece of software, open source allows the evolution of a program by end users who are not simply trying to make a profit, but rather want to create good software. The Netscape company released its source code some years ago under the project Mozilla (Firefox, Thunderbird, etc.), producing what many say is the best browser and email software in the world. This free, open-source model of software development also allows for rapid response. For example, when a security flaw pops up in Linux, a release that cures it is available in hours instead of the days or weeks typical of commercial software.

Next time we'll go into some of the different free and open-source distributions of Linux, plus approaches to downloading and installing one or another.

Happy Computing!