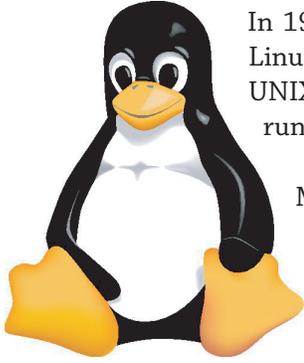


# What Is Linux?

This flyer was created and distributed by a group of students at MIT who wish to promote the use of the GPL and Linux in academic and research environments. Our goal is to counter some of the fear, uncertainty, and doubt being spread by individuals opposed to the GPL and open-source software. Please direct questions and comments to [golinux@mit.edu](mailto:golinux@mit.edu).



In 1991, a Finnish computer science student named Linus Torvalds began writing his own clone of the UNIX operating system, which he called "Linux", to run on his new Intel 386 computer.

Months later, he had an operating system that was of limited functionality, but he decided to share it on the Internet, and invite other people to look at his work and make modifications and contributions.

The work grew over time, with additions pouring in from around the net. By 1994, the Linux Kernel 1.0 was released. This "kernel" represents the core of the Linux operating system, which when combined with the GNU utilities form a complete UNIX-like operating system.

Today, the linux kernel is at version 2.6, and is used by thousands of companies world-wide. It is still available for free, released under the GNU Public License (GPL), ensuring that both the binaries and the source code are usable and viewable by anyone. Companies such as RedHat, SUSE, and Mandrake release "Linux Distributions" -- complete software packages that combine graphical user interfaces, the Linux kernel, and office suite applications that rival expensive packages from Microsoft and Apple.

## Source Code's Importance In Software

Source code is the set of instructions written by software engineers (in a human-readable language like C, Perl, or BASIC) that is turned into machine language (the "binary program") by a compiler. Humans can read and understand source code; only a computer can understand and run the binary program.

### Why is source code important to programmers?

Without the source code, a programmer cannot modify or understand how a piece of software works. If a bug is discovered, the programmer must wait on the manufacturer to provide a fix, even if he knows how to fix it. Having the source code is the only way a programmer or end user can verify that the manufacturer has not inserted "back doors" (secret, remote access points) into the program.

### If you have the binary program, can you turn it back into the source code?

There are no good ways of doing this. Source code frequently contains comments and additional info that the computer can't understand; it's only helpful for the programmers.

## How can anyone make money from something that's free?

In 2002, HP reported making \$2 billion in "Linux-related revenue", and IBM claimed \$1.5 billion from Linux the same year.

Quoting from CIOnet:

Most of HP's Linux revenue so far comes from selling hardware running Linux, along with support. Linux itself may be available for free, says [HP Linux director] Chavis, "but customers who are running their businesses on it are willing to pay for the value-add of services and support. They want to be able to call somebody who has expertise when they're in a panic and they need a patch."

<http://www.cioupdate.com/news/article.php/1574431>

## GNU's Not UNIX!

The Free Software Foundation (FSF) launched the GNU project (an acronym for GNU's Not UNIX) in an attempt to provide free, open-source UNIX-like tools under the GPL. All GNU software was written from scratch, and licensed under the GPL.



## The GNU General Public License

The GPL is a software license, like the licenses that come with most commercial proprietary software. However, the GPL differs in several key ways:

- 1. Distribution.** The GPL allows you to distribute GPL-licensed software to anyone (for a fee or for free) as long as you also provide the source code.
- 2. Internal Modifications.** As long as you are not distributing a GPL'd program, you may modify the source code however you like, and keep those modifications to yourself. You are not required to share them with anyone.
- 3. Distributing modifications.** Should you wish to distribute your modified version of a GPL'd program, you must also distribute the source code for your changes, to allow other programmers to further study, understand, and improve on your additions.