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What is Linux?

Linux is a family of computer operating systems, that is, software that "manages" a computer.

Linux should really be called GNU/Linux, because Linux is the kernel – the core part of the operating system – that is supported by a vast array of other programs that help manage the computer. An operating system sequences tasks for the processing circuitry of the computer, which used to be called the CPU, but now may be several or even many processing chips. It also controls data flow into and out of memory, and to and from peripherals like disks, network interfaces, printers, scanners, cameras, microphones, speakers and, of course, keyboards and screens. While there is a lot going on to manage, an operating system is really the traffic cop for the data traffic in our computer.

If you have a computer, you need AN operating system, but there are lots of variations and versions. This is true of Microsoft Windows and Macintosh OS as well as Linux. There are other OS's as well (BSD, BeOS, PalmOS, and others). Here we'll focus on the Linux family and why you may want to choose it for your computer. In particular, later on we will tell about the way Linux is produced and the philosophy behind it, as these facets of Linux are extremely important to how people work with it.

How do the different Linuxes differ?

If you hear people talking about Linux or writing about it on the Web, there are two main dimensions in which the ensemble we call Linux can vary:

1) The kernel undergoes continual development and improvement, mainly to allow more types of equipment and data structures to be dealt with. Most of these features are introduced as modules which can be selectively added and removed, though a typical user does not need to actually do the work. The kernel versions have quite a few numbers. If you are running a Linux-family operating system, the command

```
uname -a
```

issued in a "terminal" screen will report the kernel version and date and some other information. For example, my computer reports

```
Linux acer-jn-u 2.6.20-16-generic #2 SMP Tue Feb 12 05:41:34 UTC 2008 i686
GNU/Linux
```

so my kernel is version 2.6.20-16. Mostly, this is irrelevant to most users who just want to run applications like word processing, playing music, browsing the Internet or doing email.

2) The many choices of the ways in which the kernel and the GNU utilities can be packaged allow different people to put together different distributions of Linux. These will all use various versions of the kernel and evolve with it, but may choose different ways to manage the screen or the handling of installation and removal of application programs. The "distro" you choose will depend on your own needs

and situation. See [AboutDistros](#) for some help.

How Linux is developed and distributed

Linux is open source (??ref), meaning you can obtain the computer program code for it if you wish. You can even modify that code to your own needs, but under the terms of the license under which that code is distributed, you generally have to contribute your modifications back into the common pool of program code. A simpler way to say this is that Linux is a community development. It is like a barn raising where everyone gets together to help out. You may not be a programmer (carpenter in the barn raising example) but you may still be able to test, document or instruct others (make the lunch!). Even as a plain user, you help to enlarge the body of people familiar with the Linux family.

Generally, Linux is available as a no-cost download. However, some people prefer to have a box, a manual and a CD or DVD. Various entrepreneurs offer such packaging, and they are allowed to charge for it. This is also mentioned under [AboutDistros](#).

What should I use?

As this constitutes advice, I'll point out who is giving it. NashJc is Prof. John Nash of the Telfer School of Management in the University of Ottawa. I am a long-time computer user and software developer as well as a researcher in management. I've been involved with OCLUG and been on its Board for several years. I believe the community development model for open source software and Linux are important parts of a healthy business and intellectual economy.

The advice:

- If you consider that you want to simply "use" a computer for personal information, email, documents, photos, music etc., you can do a lot worse than buying a computer pre-loaded with Linux. There are, unfortunately, not as many stores around as we would like, but perhaps our members will build [WhereToBuyALinuxMachineInOttawa](#). One choice is an Asus Eee PC (choose one with Linux, not Windows). Update 2010-04-19: Unfortunately, Asus now does not offer this option on new machines. However, most Asus machines are set up so there is an empty partition and Linux can be installed in this without disrupting that other OS.

- If you already have a computer, you can download and install one of the popular Linux distros. I like Ubuntu and use it on a number of machines. It is very popular as it seems to have most of the tools people want, though some of them are not open source.

- If you really want truly open source software, then plain Debian Linux is a good choice. Note that if you want to contribute to software development, this may be the right choice, as in packaging Ubuntu, some files may be renamed in non-standard or unexpected ways. I've been caught by this and wasted some time.

Separately, there is advice on how to make a machine run both Linux and Windows (dual boot). (??can someone supply this??).

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