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Linux

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Richard Petersen

Author of *Linux: The Complete Reference* and *Linux Programming: A Beginner's Guide*

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Linux: The Complete Reference Fourth Edition

Richard Petersen

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Linux is an operating system for PC computers and workstations that now features a fully functional *graphical user interface* (*GUI*), just like Windows and the Mac (though more stable). Linux was developed in the early 1990s by Linus Torvald, along with other programmers around the world. As an operating system, Linux performs many of the same functions as UNIX, Mac, Windows, and Windows NT. However, Linux is distinguished by its power and flexibility. Most PC operating systems, such as Windows, began their development within the confines of small, restricted personal computers, which have only recently become more versatile machines. Such operating systems are constantly being upgraded to keep up with the ever-changing capabilities of PC hardware. Linux, on the other hand, was developed in a different context. Linux is a PC version of the UNIX operating system that has been used for decades on mainframes and minicomputers, and is currently the system of choice for workstations. Linux brings the speed, efficiency, and flexibility of UNIX to your PC, taking advantage of all the capabilities that personal computers can now provide. Along with its UNIX capabilities come powerful networking features, including support for Internet, intranets, Windows, and AppleTalk networking. As a standard, Linux is distributed with fast, efficient, and stable Internet servers, such as the Web, FTP, and Gopher servers, along with domain name, proxy, news, mail, and indexing servers. In other words, Linux has everything you need to set up, support, and maintain a fully functional network.

Now, with both the Gnome and K Desktop, Linux also provides GUI interfaces with that same level of flexibility and power. Unlike Windows and the Mac, you can choose the interface you want and then customize it further, adding panels, applets, virtual desktops, and menus, all with full drag-and-drop capabilities and Internet-aware tools. On your desktop, a file manager window can access any Internet site, enabling you to display Web pages and download files with a few simple mouse operations. To print a file, simply drag it to a Printer icon.

Linux does all this at a great price. Linux is free, including the network servers and GUI desktops. Unlike the official UNIX operating system, Linux is distributed freely under a GNU General Public License as specified by the Free Software Foundation, making it available to anyone who wants to use it. GNU stands for "Gnu's Not UNIX" and is a project initiated and managed by the Free Software Foundation to provide free software to users, programmers, and developers. Linux is copyrighted, and it is not public domain. However, a GNU public license has much the same effect as being in the public domain. The GNU public license is designed to ensure Linux remains free and, at the same time, standardized. Only one official Linux exists. The list of software available under the GNU public license is extensive, including environments, programming languages, Internet tools, and text editors. People sometimes have the mistaken impression that Linux is somehow less than a professional operating system because it is free. Linux is, in fact, a PC and workstation version of UNIX. Many consider it far more stable and much more powerful than Windows. This power and stability have made Linux an operating system of choice as a network server.

To appreciate Linux completely, you need to understand the special context in which the UNIX operating system was developed. UNIX, unlike most other operating systems,

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