

Understanding Operating Systems

Every new computer that's brought home from the store has an operating system installed onto it. But what most new computer users don't realize, is that without an operating system, that computer would be a simple shell of possibilities. A powered computer lacking an operating system wouldn't display anything more than a bunch of confusing text messages that describe the computer's boot process. At the very end of this process, the computer looks for an operating system and if not found, it will prompt the user to tell it where it is.

Earlier computers didn't have an operating system and if you have experience with the computers of the early eighties, you'll remember that most to them didn't even have a hard drive! These old computers booted an MS-DOS type operating system from drivers stored onto a floppy disk, and in order to use a program, users would remove the boot floppy and then insert a new floppy that contained the program. The floppy not only stored the program (word processor, spreadsheet, etc.), it also stored the drivers that the program needed to communicate with the computer's hardware. As you can imagine, the cumbersome process of switching from floppy to floppy prompted the birth of the operating system.

An operating system is a software program that controls how the computer's hardware (and installed software) works. It manages the activity of every component and then displays that activity as a user-friendly interface (GUI). It keeps track of where things exist on a computer's hard drive as well. But perhaps most importantly for the end-user, the operating system is responsible for translating commands issued with a keyboard and mouse into binary code (010110101 stuff) that can communicate with a set of speakers, a printer, a scanner, and more.

With an operating system installed onto a computer's hard drive, users no longer need to boot a computer with a floppy disk, nor do they need to run programs from a floppy disk. All the drivers of a program are stored onto the computer and used whenever a program is started.

Apple's Macintosh computer was among the first of a couple systems to establish a user-to-hardware relationship through a user-friendly interface. Today, we have quite a few operating systems. Some of the more popular ones are Windows Vista, Mac OS X, ZETA, IBM, Unix, and Linux. But even still, operating systems have extended onto to non-computer devices such as game consoles, portable music players, and PDAs. Regardless of the device, the operating system installed onto it serves the same purpose across the board: to enable user-to-hardware

communication.

When you think about upgrading your computer to a new operating system, be careful to make sure that you have the necessary hardware components. We tried to upgrade one of our Windows 98 machines to Windows XP, but we were cautioned that the former may not be hardware compatible with XP technology. Apparently, the Windows XP operating system requires components that weren't developed at the time Windows 98 was distributed and if we were to install Windows XP on this machine anyway, the new operating system would look for hardware that the computer didn't have. And that would be an instant recipe for failure.

Also be careful about installing operating systems that are incompatible with existing hardware. The hardware of Macintosh computers is extremely different from the hardware of Windows computers and under no circumstances will a Windows operating system work on a Macintosh machine!

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