ÒPERATING SYSTÈMS

An operating system manages and coordinates the functions performed by the computer hardware, including the CPU, input/output devices, secondary storage devices, and communication and network equipment. Operating systems are the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers.

The operating system software must keep track of each hardware resource determine who gets what, determine when the user will have access to the resource, allocate how much of the resource the user will be given, and terminate access at the end of the use period.

Operating systems vary in complexity from those that support single user microcomputers are less complex compared to those that handle multi-user mainframes. Their complexity depends on the computer system's size and scope, together with the type of performance provided to its users. A single stand-alone microcomputer will have a relatively simple operating system, whereas a mainframe that supports hundred of users accessing the system simultaneously will have one that is far more complex.

The primary purpose of an operating system is to maximize the productivity of a computer system by operating it in the most efficient manner and minimizing the amount of human intervention required. An operating system also simplifies the job of computer programmers, since it includes programs that perform common input/output and storage operations and other standard processing functions. Operating systems are the most indispensable component of the software interface between users and the hardware of their computer systems.

Many operating systems are designed as a collection of program modules, which can be organized in combination with various capabilities around a central module, or kernel. Such operating systems can be tailored to fit the processing power and memory capability of a computer system and the type of processing jobs that need to be done on it. For example, some operating system packages include a selected number of utility programs, language translator programs (compilers and interpreters), and even some application programs.

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