

computer security

computer security, also called **cybersecurity**, the protection of computer systems and information from harm, theft, and unauthorized use. Computer hardware is typically protected by the same means used to protect other valuable or sensitive equipment—namely, serial numbers, doors and locks, and alarms. The protection of information and system access, on the other hand, is achieved through other tactics, some of them quite complex.

The security precautions related to computer information and access address four major threats: (1) theft of data, such as that of military secrets from government computers; (2) vandalism, including the destruction of data by a computer virus; (3) fraud, such as employees at a bank channeling funds into their own accounts; and (4) invasion of privacy, such as the illegal accessing of protected personal financial or medical data from a large database. The most basic means of protecting a computer system against theft, vandalism, invasion of privacy, and other irresponsible behaviours is to electronically track and record the access to, and activities of, the various users of a computer system. This is commonly done by assigning an individual password to each person who has access to a system. The computer system itself can then automatically track the use of these passwords, recording such data as which files were accessed under particular passwords and so on. Another security measure is to store a system's data on a separate device or medium that is normally inaccessible through the computer system. Finally, data is often encrypted so that it can be deciphered only by holders of a singular encryption key. (*See* data encryption.)

Computer security has become increasingly important since the late 1960s, when modems (devices that allow computers to communicate over telephone lines) were introduced. The proliferation of personal computers in the 1980s compounded the problem because they enabled hackers (irresponsible computerphiles) to illegally access major computer systems from the privacy of their homes. With the tremendous growth of the Internet in the late 20th and early 21st centuries, computer security became a widespread concern. The development of advanced security techniques aims to diminish such threats, though concurrent refinements in the methods of computer crime pose ongoing hazards.

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