

COMPUTER OPERATING SYSTEM INSTALLATION

RELATED APPLICATION

This application claims the benefit of U. S. Provisional application No. 60/065,863, filed on Nov 14, 1997.

MICROFICHE APPENDIX

An attached Microfiche Appendix forms part of this application, and provides machine language code for an IBM Compatible program which can execute a method of the present invention. Copyright is claimed in the program of the attached Appendix. The copyright owner grants permission to make facsimile copies of the attached Appendix as it appears in the files or records of the Patent Office, but all other rights are reserved.

FIELD OF THE INVENTION

This invention relates to computers and in particular to the installation of a computer operating system on a storage medium of the computer.

BACKGROUND OF THE INVENTION

A typical current computer system is provided with one or more data storage media each of which may be used to store data such as program files and information files including information regarding the storage medium itself, as well as other information on the computer system. Typically, such storage media are optical or magnetic and can include media such as CD-ROM disks. The present invention is concerned with writeable media, such as magnetic disks and writeable optical disks such as digital video and digital versatile disks sometimes referenced as "DVD". In the case of magnetic disks, these typically may either be of a type which is removable and insertable into a drive by hand such as a "floppy" disk or a so-called "fixed drive" or a hard drive.

The computer writes and retrieves data from a storage media, and performs other computer operations, in accordance with an operating system ("OS"). Common operating systems on an IBM PC compatible computer include DOS, WINDOWS 3.1, WINDOWS 95, WINDOWS NT, IBM OS/2, WINDOWS 98, or Solaris. (WINDOWS is a trademark of Microsoft Corp.; IBM and OS/2 are trademarks of IBM Corporation; SUN and Solaris are trademarks of Sun Microsystems, Inc. Other known PC compatible operating systems include Coherent, FreeBSD, Interactive Unix, Linux, LynxOS, Minux, NetBSD, NextStep, OpenStep, SCO Unix, UnixWare, XENIX, NetWare, CTOS, Pick, QNX, THEOS, and CP/M. Different operating systems may use different conventions for accessing a data storage medium and may have different limitations in the size of storage space which they can handle. Because of this, the different operating systems may not be compatible. This can be better understood by reference to FIG. 1 as discussed below.

FIG. 1 illustrates a typical conventional magnetic disk which can be either a removable or fixed drive disk. The disk **10** is rotated in a drive by a spindle **30** and data is read from or written onto a first side **12** by means of a read/write head assembly **32** carried on an arm **34**. The head assembly **32** is positioned by a motor assembly **36** under the control of a disk controller controlled by commands from the computer processor. Data can also be read from or written onto a second side **14** by means of another read/write head assembly (not shown). Furthermore, in a typical hard drive there

will be many such disks **10** with a read/write head positioned on each side, all under control of the same motor assembly **36**. However, for simplicity only one side of one disk is shown in FIG. 1. While often a single disk is referenced below in connection with a data storage device, it will be understood that there could in fact be multiple disks.

Each side is typically divided into a series of concentric rings **19** referenced as a cylinder **18** extending down through the disks. The set of rings on all sides of all disks lying on the same imaginary cylinder extending down through the disks have the same cylinder identification.

Each cylinder **18** is further logically divided by a computer operating system into sectors, such as sectors **20**, **22** which can be numbered with respect to some reference mark on the disk **10**. Each sector of a disk has a unique identification, such as a cylinder number, disk side and sector number. Alternatively, a single sector number can uniquely identify a particular sector in a system where sectors are numbered in a serpentine manner, beginning with the outermost cylinder on an upper side and continuing through the sectors on the same cylinder to the lower disk side. This configuration is continued on the same cylinder of the next disk and repeated for the next inward cylinder and so on until all sectors have been numbered.

Typical computer operating systems designate the space on the disk in a strategy referred to as a partition with the details of the partitioning being recorded on a disk in the form of a "partition table". However, because different operating systems may use different partitioning strategies, a disk partition for one operating system may not be compatible with that of another operating system. A common partition strategy and associated partition table is the IBM compatible partition. This partitioning is found on fixed, removable magnetic and optical disks used in IBM compatible computers and is used, for example, by Microsoft DOS, or WINDOWS versions. IBM compatible partitioning may be used with a variety of disk sector addressing schemes.

Computer system users often wish to add a new operating system to their hard drive or other media which may already carry one or more other operating systems on different partitions. "New" in this context, is meant an operating system not already existing on the storage media, or a copy of an operating system which does already exist on the storage media. However, as is apparent from the above, different operating systems will typically require their own partitions. In the typical case where a user has only one operating system and a corresponding single partition, the user can simply reformat and re-partition the storage medium using the new operating system, and install the new operating system on the storage medium. However, this means all existing data on the storage medium will be lost. To retain existing data, a user can copy all files to a backup storage medium such as multiple floppy disks and then re-install the data. However, this will only work where the new operating system is compatible with the previous file structure.

Furthermore, a user may want to have two or more different operating systems present on the storage medium at the same time, such as when a new operating system is to be installed but the user does not want to abandon an existing operating system until he is sure the new operating system will function efficiently with all existing programs. This will require the user to determine from a user manual of the operating system to be installed, the requirements of that operating system, the existing partition and data structure on the storage medium, and then determine an appropriate way