MICROSOFT PRESS®

COMPUTER DICTIONARY

THE COMPREHENSIVE STANDARD FOR BUSINESS, SCHOOL, LIBRARY, AND HOME

Microsoft PRESS

PUBLISHED BY
Microsoft Press
A Division of Microsoft Corporation
One Microsoft Way
Redmond, Washington 98052-6399

Library of Congress Cataloging-in-Publication Data
Microsoft Press computer dictionary : the comprehensive standard for
business, school, library, and home.
p. cm.
ISBN 1-55615-231-0
1. Computers--Dictionaries. 2. Microcomputers--Dictionaries.
I. Microsoft Press.
QA76.15.M54 1991 91-9904
004.16'03--dc20 CIP

Printed and bound in the United States of America.

2 3 4 5 6 7 8 9 MLML 6 5 4 3 2 1

Distributed to the book trade in Canada by Macmillan of Canada, a division
of Canada Publishing Corporation.

Distributed to the book trade outside the United States and Canada by
Penguin Books Ltd.

Penguin Books Ltd., Harmondsworth, Middlesex, England
Penguin Books Australia Ltd., Ringwood, Victoria, Australia
Penguin Books N.Z. Ltd., 182–190 Wairau Road, Auckland 10, New Zealand

British Cataloging-in-Publication Data available.

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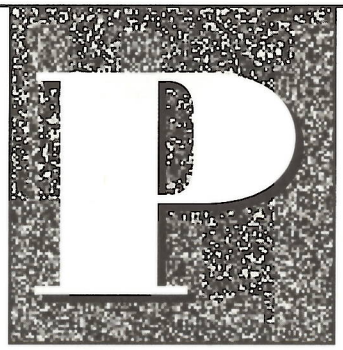


pack To store information in a more compact form. Packing eliminates unnecessary spaces and other such characters and may use other special methods of compressing data as well. It is used by some programs to minimize storage requirements. Although packed data is not necessarily readable by humans in its compressed form, it can be unpacked and restored to its original appearance. *See also* data compression.

package A computer application consisting of one or more programs created to perform a particular type of work—for example, an accounting package or a spreadsheet package. Software packages are designed to satisfy the needs of more than one organization; they are generally considered the same as "off-the-shelf" or "canned" programs.

packaged software A software program sold through a retail distributor as opposed to custom software. *Compare* canned software.

packed decimal A method of encoding decimal numbers in binary form that maximizes storage space by using each byte to represent two decimal digits. For example, in binary form, the *1* in the decimal number *12* is represented as *0001*, and the *2* is represented as *0010*. If one byte is allotted to each decimal digit, decimal *12* is written

00000001 00000010

with extraneous 0's filling in the leftmost four superfluous bit positions in each byte. In the packed decimal method, however, where each byte represents two digits, the same number is written

00010010

thereby saving one full byte of storage. When signed decimal numbers are stored in packed decimal format, the sign appears in the rightmost four bits of the rightmost (least significant) byte.

packet In general usage, a unit of information transmitted as a whole from one device to another on a network. In packet-switching networks, a packet is defined more specifically as a transmission unit of fixed maximum size that consists of binary digits representing both data and a header containing an identification number, source and destination addresses, and, sometimes, error-control data. *See also* packet switching.

packet switching A message-delivery technique in which small units of information (packets) are relayed through stations in a computer network along the best route currently available between the source and the destination. A packet-switching network handles information in small units, breaking long messages into multiple packets before routing. Although each packet may travel along a different path, and the packets composing a message may arrive at different times or out of sequence, the receiving computer reassembles the original message. This repackaging is called packet assembly and disassembly (PAD). Packet-switching networks are considered to be fast and efficient. To manage the tasks of routing traffic and assembling/disassembling packets, such networks require some "intelligence" from the computers and software that control delivery. Standards for packet switching on networks are documented in the CCITT recommendation X.25.

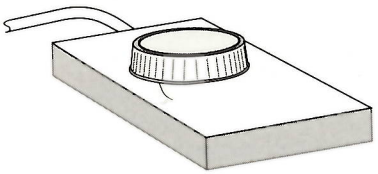
packing density The number of storage units per length or area of a storage device. Bits per inch is

one measure of packing density.

pad character In data input and storage, an extra character inserted as "filler" to use up surplus space in a predefined block of a specified length, such as a fixed-length field.

padding In data storage, the addition of one or more bits (usually zeros) to a block of data in order to fill it, to force the actual data bits into a certain position, or to prevent the data from duplicating a bit pattern that has an established meaning, such as an embedded command.

paddle An early type of input device often used with computer games, especially for side-to-side or up-and-down movements of an on-screen object. See the illustration. A paddle is less sophisticated than a joystick because it permits the user to specify movement along a single axis only, by turning a dial. The paddle, first known as the paddle controller, got its name because its most popular use was to control the on-screen paddle bars in the simple early video games.



Paddle.

paddle switch Any switch that has a wide handle. The large on/off switch on IBM personal computers is one type of paddle switch.

page A fixed-size block of memory. When used in the context of a paging memory system, a page is a block of memory whose physical address can be changed via mapping hardware. A page is typically associated with virtual memory hardware, although the 16-kilobyte (KB) blocks mapped using the Expanded Memory Specification (EMS) are also called pages. In the memory management unit (MMU) of the 80386 and 80486, a page is 4 KB. In Motorola systems, the page size is configurable between 256 bytes and 32 KB. *See also* Expanded Memory Specification, memory management unit, virtual memory.

In computer graphics, a portion of display memory that contains one complete full-screen image; the internal representation of a screenful of information.

page break The point at which the flow of text in a document moves to the top of a new page. Most word-processing programs create an automatic page break when the material on the page reaches a specified maximum depth. By contrast, a "hard" or "manual" page break is a command or code inserted by the user to force a page break at a specific place in the text. In older word processors, a page break can be created by the insertion of a form-feed character. *See also* form feed.

paged address In the 80386 and i486 paged-memory architecture, an address in memory created by combining the processes of segment translation and page translation. In the paged-memory scheme, which requires that the microprocessor's paging feature be enabled, logical addresses are transformed into physical addresses (actual locations in physical memory) in two steps: segment translation and page translation. The first step, segment translation, converts a logical address (consisting of an segment selector and a segment offset) to a linear address—an address that refers indirectly to a physical address. After the linear address is obtained, the microprocessor's paging hardware converts the linear address to a physical address by specifying a page table (an array of 32-bit page specifiers), a page (a 4-KB unit of contiguous addresses within physical memory) within that table, and an offset within that page. This information, called a paged address, collectively refers to a physical address.

page-description language Abbreviated PDL. A programming language, such as PostScript, that is used to describe output to a printer or a display device, which then uses the instructions from the page-description language to construct text and graphics to create the required page image. PDLs are like other computer languages, with logical program flow allowing for sophisticated manipulation of the output. A page-description language, like a blueprint, sets out specifications (as for fonts and type sizes) but leaves the work of drawing characters and graphics to the output device itself. Be-