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# Computer Dictionary

Fifth Edition

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PUBLISHED BY

Microsoft Press

A Division of Microsoft Corporation

One Microsoft Way

Redmond, Washington 98052-6399

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Library of Congress Cataloging-in-Publication Data

Microsoft Computer Dictionary.--5th ed.

p. cm.

ISBN 0-7356-1495-4

1. Computers--Dictionaries. 2. Microcomputers--Dictionaries.

AQ76.5. M52267 2002

004'.03--dc21

200219714

Printed and bound in the United States of America.

2 3 4 5 6 7 8 9 QWT 7 6 5 4 3 2

Distributed in Canada by H.B. Fenn and Company Ltd.

A CIP catalogue record for this book is available from the British Library.

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Body Part No. X08-41929

**log files** *n.* A computer file that records requests received by online applications or the number of hits a Web page receives. Log files are useful in analyzing the technical performance of a Web site, redesigning Web site navigation, and revising marketing strategies used by e-businesses.

**logic** *n.* In programming, the assertions, assumptions, and operations that define what a given program does. Defining the logic of a program is often the first step in developing the program's source code. *See also* formal logic.

**logical** *adj.* **1.** Based on true and false alternatives as opposed to arithmetic calculation of numeric values. For example, a logical expression is one that, when evaluated, has a single outcome, either true or false. *See also* Boolean algebra. *Compare* fuzzy logic. **2.** Conceptually true to a particular design or idea—for example, network transmissions travel in a circle around a logical ring, even though the ring shape itself is not physically apparent. *Compare* physical.

**logical block addressing** *n.* A technique in which the cylinder, head, and sector locations on a hard disk are converted to 24-bit addresses for data storage and retrieval. Logical block addressing is used with SCSI drives and is also a feature of Enhanced IDE (EIDE) disk drives, on which it breaks through the earlier 528-MB IDE limit and allows support for drives up to 8.4 GB in capacity if 24-bit logical address space is used. Address conversion is performed by an EIDE drive's disk controller, but also requires support from the BIOS and the computer's operating system. *Acronym:* LBA. *See also* EIDE, SCSI.

**logical decision** *n.* Any decision that can have one of two outcomes (true/false, yes/no, and so on). *Compare* fuzzy logic.

**logical device** *n.* A device named by the logic of a software system, regardless of its physical relationship to the system. For example, a single floppy disk drive can simultaneously be, to the MS-DOS operating system, both logical drive A and drive B.

**logical drive** *n.* *See* logical device.

**logical error** *n.* *See* logic error.

**logical expression** *n.* *See* Boolean expression.

**logical file** *n.* A file as seen from a conceptual standpoint, without reference to and as distinct from its physical realization in memory or storage. For example, a logical file might consist of a contiguous series of records, whereas the file might be physically stored in small pieces scat-

tered over the surface of a disk or even on several disks. A logical file might also consist of some subset of columns (fields) and rows (records) extracted from a database. In this case, the logical file (or view) is only that information required by a particular application program or user.

**Logical Link Control** *n.* *See* LLC.

**logical memory** *n.* A correlation between physical memory of the computer system and an address range that is accessible to devices. The hardware abstraction layer (HAL) provides this correlation (or mapping). *See also* map.

**logical network** *n.* A way to describe the topology, or layout, of a computer network. Referring to a logical (rather than physical) topology describes the way information moves through the network—for example, in a straight line (bus topology) or in a circle (ring topology). The difference between describing a network as logical or physical is sometimes subtle because the physical network (the actual layout of hardware and cabling) doesn't necessarily resemble the logical network (the path followed by transmissions). A logical ring, for example, might include groups of computers cabled octopus-like to hardware "collection points" which, in turn, are cabled to one another. In such a network, even though the physical layout of computers and connecting hardware might not visually resemble a ring, the logical layout followed by network transmissions would, indeed, be circular. *See also* bus network, ring network, star network, token ring network, topology. *Compare* physical network.

**logical operator** *n.* An operator that manipulates binary values at the bit level. In some programming languages, logical operators are identical to Boolean operators, which manipulate true and false values. *See also* Boolean operator, mask.

**logical record** *n.* Any unit of information that can be handled by an application program. A logical record can be a collection of distinct fields or columns from a database file or a single line in a text file. *See also* logical file.

**logical schema** *n.* *See* conceptual schema.

**logic analyzer** *n.* A hardware device that facilitates sophisticated low-level debugging of programs. Typical features include the ability to monitor bus signals during execution, to halt execution when a given memory location is read or written to, and to trace back through some number of instructions when execution is halted for any reason. *See also* debugger.



**serial port adapter** *n.* An interface card or device that either provides a serial port or converts a serial port to another use. *See also* adapter, serial port.

**serial printer** *n.* A printer connected to the computer via a serial interface (commonly RS-232-C or compatible). Connectors for this type of printer vary widely, which is one reason they are less popular than parallel printers among those who use IBM and IBM-compatible PCs. Serial printers are standard for Apple computers. *See also* DB connector, serial, serial transmission. *Compare* parallel printer.

**serial processing** *n.* *See* sequential processing (definition 2).

**Serial Storage Architecture** *n.* *See* SSA.

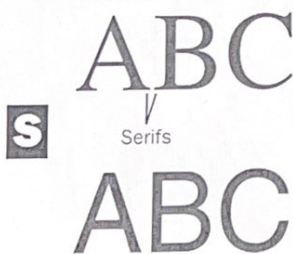
**serial transmission** *n.* The transfer of discrete signals one after another. In communications and data transfer, serial transmission involves sending information over a single line one bit at a time, as in modem-to-modem connections. *Compare* parallel transmission.

**series circuit** *n.* A circuit in which two or more components are linked in series. All the current passes through each component in a series circuit, but the voltage is divided among the components. *See* the illustration. *Compare* parallel circuit.



**Series circuit.**

**serif**<sup>1</sup> *adj.* Marked by the use of serifs. For example, Goudy is a serif typeface, whereas Helvetica is a sans serif typeface. *See* the illustration. *See also* serif<sup>2</sup>. *Compare* sans serif.



**Serif.** A serif typeface (top) and a sans serif typeface (bottom).

**serif**<sup>2</sup> *n.* Any of the short lines or ornaments at the ends of the strokes that form a typeface character.

**server** *n.* **1.** On a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network. **2.** On the Internet or other network, a computer or program that responds to commands from a client. For example, a file server may contain an archive of data or program files; when a client submits a request for a file, the server transfers a copy of the file to the client. *See also* application server (definitions 1 and 2), client/server architecture. *Compare* client (definition 3).

**server appliance** *n.* A device designed to deliver one or more specific network services in a single turnkey package that includes both hardware and software. All necessary programs are preinstalled on a server appliance, which has minimal, simplified options and controls. Server appliances can be used to complement or replace traditional servers on a network and can provide such services as file and printer sharing and Internet connectivity. *Also called:* appliance. *See also* information appliance.

**server-based application** *n.* A program that is shared over a network. The program is stored on the network server and can be used at more than one client machine at a time.

**server cluster** *n.* A group of independent computer systems, known as nodes, working together as a single system to ensure that mission-critical applications and resources remain available to clients. A server cluster is the type of cluster that Cluster service implements. *See also* cluster.

**server control** *n.* *See* ASP.NET server control.

**server error** *n.* A failure to complete a request for information through HTTP that results from an error at the server rather than an error by the client or the user. Server errors are indicated by HTTP status codes beginning with 5. *See also* HTTP, HTTP status codes.

**server farm** *n.* A centralized grouping of network servers maintained by an enterprise or, often, an Internet service provider (ISP). A server farm provides a network with load balancing, scalability, and fault tolerance. Individual servers may be connected in such a way that they appear to represent a single resource.

**serverlet** *n.* *See* servlet.

**Server Message Block** *n.* *See* SMB.