GLOSSARY

This glossary defines the key terms listed at the end of each chapter and other terms related to managing and maintaining a personal computer.

100BaseT An Ethernet standard that operates at 100Mbps and uses twisted-pair cabling up to 100 meters (328 feet). *Also called* Fast Ethernet. Variations of 100BaseT are 100BaseTX and 100BaseFX.

10Base2 An outdated Ethernet standard that operates at 10 Mbps and uses small coaxial cable up to 500 meters long. *Also called* ThinNet.

10Base5 An outdated Ethernet standard that operates at 10 Mbps and uses thick coaxial cable up to 500 meters long. *Also called* ThickNet.

10BaseT An Ethernet standard that operates at 10 Mbps and uses twisted-pair cables up to 100 meters (328 feet).

3DNow! A processor instruction set by AMD designed to improve performance with 3D graphics and other multimedia data.

3G (Third Generation) The ability to use your cell phone to browse the Web, stream music and video, play online games, and use instant messaging and video conferencing.

80 conductor IDE cable An IDE cable that has 40 pins but uses 80 wires, 40 of which are ground wires designed to reduce crosstalk on the cable. The cable is used by ATA/66 and higher IDE drives.

802.11b/g/n *See* IEEE 802.11a/b/g/n.

A+ Certification A certification awarded by CompTIA (The Computer Technology Industry Association) that measures a PC technician's knowledge and skills.

AC adapter A device that converts AC to DC and uses regular house current to power a notebook computer.

Accelerated Graphics Port (AGP) A 32-bit wide bus standard developed specifically for video cards that includes AGP 1x, 2x, 3x, 4x, and 8x standards. AGP has been replaced by the PCI Express standards.

access point (AP) A device connected to a LAN that provides wireless communication so that computers, printers, and other wireless devices can communicate with devices on the LAN.

ACPI (Advanced Configuration and Power Interface) Specification developed by Intel, Compaq, Phoenix, Microsoft, and Toshiba to control power on computers and other devices.

Active Directory A Windows server directory database and service that is used in managing a domain to allow for a single point of administration for all shared resources on a network, including files, peripheral devices, databases, Web sites, users, and services.

active partition The primary partition on the hard drive that boots the OS. Windows 2000/XP/Vista calls the active partition the system partition.

adapter address *See* MAC address.

adapter card A small circuit board inserted in an expansion slot and used to communicate between the system bus and a peripheral device. *Also called* an interface card.

administrative shares The folders that are shared by default on a network domain that administrator accounts can access.

administrative tools Tools that you can use to manage the local PC or other computers on the network.

administrator account In Windows 2000/XP/Vista, an account that grants to the administrator(s) rights and permissions to all hardware and software resources, such as the right to add, delete, and change accounts and to change hardware configurations.

Advanced Configuration and Power Interface (ACPI) *See* ACPI (Advanced Configuration and Power Interface).

Advanced Options menu A Windows 2000/XP/Vista menu that appears when you press F8 when Windows starts. The menu can be used to troubleshoot problems when loading Windows 2000/XP/Vista. In Vista, the menu is called the Advanced Boot Options menu.

adware Software installed on a computer that produces pop-up ads using your browser; the ads are often based on your browsing habits.

Aero user interface The Vista 3D user interface. *Also called* Aero glass.

AirPort The term Apple computers use to describe the IEEE 802.11b standard.

alternating current (AC) Current that cycles back and forth rather than traveling in only one direction. In the United States, the AC voltage from a standard wall outlet is normally between 110 and 115V. In Europe, the standard AC voltage from a wall outlet is 220V.

ammeter A meter that measures electrical current in amps.

ampere or amp (A) A unit of measurement for electrical current. One volt across a resistance of one ohm will produce a flow of one amp.

anonymous users User accounts that have not been authenticated on a computer.

ANSI (American National Standards Institute) A nonprofit organization dedicated to creating trade and communications standards.

answer file A text file that contains information that Windows requires in order to do an unattended installation.

antistatic wrist strap *See* ground bracelet.

antivirus (AV) software Utility programs that prevent infection or scan a system to detect and remove viruses. McAfee Associates' VirusScan and Norton AntiVirus are two popular AV packages.

application program interface (API) call A request from software to the OS to access hardware or other software using a previously defined procedure that both the software and the OS understand.

ATAPI (Advanced Technology Attachment Packet Interface) An interface standard, part of the IDE/ATA standards, that allows tape drives, optical drives, and other drives to be treated like an IDE hard drive by the system.

ATX The most common form factor for PC systems presently in use, originally introduced by Intel in 1995. ATX motherboards and cases make better use of space and resources than did the earlier AT form factor.

ATX12V power supply A power supply that provides a 12V power cord with a 4-pin connector to be used by the auxiliary 4-pin power connector on motherboards used to provide extra power for processors.

audio/modem riser (AMR) A specification for a small slot on a motherboard to accommodate an audio or modem riser card. A controller on the motherboard contains some of the logic for the audio or modem functionality.

Authenticated Users group All user accounts that have been authenticated to access the system except the Guest account. *Compare to* anonymous users.

authentication The process of proving an individual is who they say they are before they are allowed access to a computer, file, folder, or network. The process might use a password, PIN, smart card, or biometric data.

authorization Controlling what an individual can or cannot do with resources on a computer network. Using Windows, authorization is granted by the rights assigned to user accounts and permissions assigned to computer resources.

autodetection A feature of system BIOS and hard drives that automatically identifies and configures a new drive in BIOS setup.

Automated System Recovery (ASR) The Windows XP process that allows you to restore an entire hard drive volume or logical drive to its state at the time the backup of the volume was made.

Automatic Private IP Address (APIPA) An IP address in the address range 169.254.x.y, used by a computer when it cannot successfully lease an IP address from a DHCP server.

auto-switching A feature of an AC adapter whereby the device can automatically switch from 110 V to 220 V AC power, in contrast to fixed-input AC adapters that can handle only one type of AC voltage.

backdoor A hidden way to allow malware to reach the system in secret even after the malware has been removed.

back-side bus (BSB) The portion of a processor's internal bus that connects the processor to the internal memory cache. The bus operates at a much higher frequency than the front side bus.

backup An extra copy of a file, used in the event that the original becomes damaged or destroyed.

backup operator A Windows user account that can back up and restore any files on the system regardless of its having access to these files.

backward-compatible A technology, software, or device that works with older or legacy technologies, software, or devices.

bandwidth In relation to analog communication, the range of frequencies that a communications channel or cable can carry. In general use, the term refers to the volume of data that can travel on a bus or over a cable stated in bits per second (bps), kilobits per second (Kbps), or megabits per second (Mbps). *Also called* data throughput or line speed.

base station A fixed transceiver and antenna used to create one cell within a cellular network.

basic disk A way to partition a hard drive, used by all versions of Windows, that stores information about the drive in a partition table at the beginning of the drive. *Compare to* dynamic disk.

batch file A text file containing a series of OS commands. Autoexec.bat is a batch file.

best-effort protocol *See* connectionless protocol.

binary number system The number system used by computers; it has only two numbers, 0 and 1, called binary digits, or bits.

biometric device An input device that inputs biological data about a person; the data can identify a person's fingerprints, handprints, face, voice, eye, and handwriting.

BIOS (basic input/output system) Firmware that can control much of a computer's input/output functions, such as communication with the floppy drive and the monitor.

BIOS setup The program in system BIOS that can change the values in CMOS RAM. *Also called* CMOS setup.

bit (binary digit) A 0 or 1 used by the binary number system.

BitLocker Encryption A utility in Windows Vista Ultimate and Enterprise editions that is used to lock down a hard drive by encrypting the entire Vista volume and any other volume on the drive.

block mode A method of data transfer between hard drive and memory that allows multiple data transfers on a single software interrupt.

blue screen errors A Windows error that displays against a blue screen and causes the system to halt. *Also called* a stop error.

Bluetooth A standard for wireless communication and data synchronization between devices, developed by a group of electronics manufacturers and overseen by the Bluetooth Special Interest Group. Bluetooth uses the same frequency range as 802.11b, but does not have as wide a range.

Blu-ray Disc (BD) An optical disc technology that uses the UDF version 2.5 file system and a blue laser beam, which is shorter than any red beam used by DVD or CD discs. The shorter blue laser beam allows Blu-ray discs to store more data than a DVD.

BNC connector A connector used with thin coaxial cable. Some BNC connectors are T-shaped and called T-connectors. One end of the T connects to the NIC, and the two other ends can connect to cables or end a bus formation with a terminator.

Boot Configuration Data (BCD) A Vista file structured the same as a registry file and contains configuration information about how Vista is started. The BCD file replaces the Boot.ini file used in Windows 2000/XP.

boot loader An operating system program responsible for managing the process of loading the OS during the boot.

boot loader menu A startup menu that gives the user the choice of which operating system to load such as Windows XP or Windows Vista which are both installed on the same system, creating a dual boot.

boot partition The hard drive partition where the Windows 2000/XP/Vista OS is stored. The system partition and the boot partition may be different partitions.

boot record The first sector of a floppy disk or hard drive volume; it contains information about the disk or volume. On a hard drive, if the boot record is in the active partition, then it can be used to boot the OS. *Also called* boot sector.

boot sector *See* boot record.

boot sector virus An infectious program that can replace the boot program with a modified, infected version, often causing boot and data retrieval problems.

boot.ini A Windows 2000/XP hidden text file that contains information needed to start the boot and build the boot loader menu.

booting The process of starting up a computer and loading an operating system.

BootMgr The Vista program file responsible for beginning the process of loading and starting Vista. The program file has no file extension and is stored in the root directory of the system partition (which, most likely, is drive C:).

Briefcase A system folder in Windows 9x/Me that is used to synchronize files between two computers.

broadband A transmission technique that carries more than one type of transmission on the same medium, such as voice and DSL on a regular telephone line.

brownouts Temporary reductions in voltage, which can sometimes cause data loss. *Also called* sags.

browser hijacker A malicious program that infects your Web browser and can change your home page or browser settings. It can also redirect your browser to unwanted sites, produce pop-up ads, and set unwanted bookmarks. *Also called* a home page hijacker.

BTX (Balanced Technology Extended) A form factor used by motherboards and computer cases that

was expected to replace ATX. It has higher quality fans, is designed for better air flow, and has improved structural support for the motherboard. The BTX form factor has not gained full acceptance by the computer manufacturer community.

Burst EDO (BEDO) A refined version of EDO memory that significantly improved access time over EDO. BEDO was not widely used because Intel chose not to support it. BEDO memory is stored on 168-pin DIMM modules.

bus The paths, or lines, on the motherboard on which data, instructions, and electrical power move from component to component.

bus riser *See* riser card.

byte A collection of eight bits that can represent a single character.

C states Defined by ACPI and used by a processor to stop its internal operations to conserve power. Using C0 though C6 states, the processor shuts down various internal components (for example, the core clock, buffers, cache, and core voltage).

cabinet file A file with a .cab extension that contains one or more compressed files and is often used to distribute software on disk. The Extract command is used to extract files from the cabinet file.

cable modem A technology that uses cable TV lines for data transmission requiring a modem at each end. From the modem, a network cable connects to a NIC in the user's PC, or a USB cable connects to a USB port.

call tracking A system that tracks the dates, times, and transactions of help-desk or on-site PC support calls, including the problem presented, the issues addressed, who did what, and when and how each call was resolved.

capacitor An electronic device that can maintain an electrical charge for a period of time and is used to smooth out the flow of electrical current. Capacitors are often found in computer power supplies.

card reader *See* media reader.

CardBus A PCMCIA specification that improved on the earlier PC Card standards. It improves I/O speed, increases the bus width to 32 bits, and supports lower-voltage PC Cards, while maintaining backward compatibility with earlier standards.

cards Adapter boards or interface cards placed into expansion slots to expand the functions of a computer, allowing it to communicate with external devices such as monitors or speakers.

CAS Latency (CL) A method of measuring access timing to memory, which is the number of clock cycles required to write or read a column of data off a memory module. CAS stands for Column Access Strobe. *Compare to* RAS Latency.

case fan A fan inside a computer case used to draw air out of or into the case.

CAT-3 (Category 3) A rating used for UTP cable that is less expensive than the more popular CAT-5 cable.

CAT-5 A rating used for UTP cable. CAT-5 or higher cabling is required for Fast Ethernet.

CAT-6 A rating used for UTP cables that has less crosstalk than CAT-5 or CAT-5e cables.

CD (compact disc) An optical disc technology that uses a red laser beam and can hold up to 700 MB of data.

CDFS (Compact Disc File System) The 32-bit file system for CD discs and some CD-R and CD-RW discs. *See also* Universal Disk Format (UDF).

CDMA (Code Division Multiple Access) A protocol standard used by cellular WANs and cell phones.

CD-R (CD-recordable) A CD drive that can record or write data to a CD. The drive may or may not be multisession, but the data cannot be erased once it is written.

CD-RW (CD-rewritable) A CD drive that can record or write data to a CD. The data can be erased and overwritten. The drive may or may not be multisession.

cellular network A network that can be used when a wireless network must cover a wide area. The network is made up of cells, each controlled by a base station. *Also called* a cellular WAN.

cellular WAN *See* cellular network.

central processing unit (CPU) *Also called* a microprocessor or processor. The heart and brain of the computer, which receives data input, processes information, and executes instructions.

Centrino A technology used by Intel whereby the processor, chipset, and wireless network adapter are all interconnected as a unit which improves laptop performance.

Certificate Manager (certmgr.msc) console A Windows console used to manage digital certificates including EFS certificates. Using the console, you can install or back up a certificate.

CHAP (Challenge Handshake Authentication Protocol) A protocol used to encrypt account names and passwords that are sent to a network controller for validation.

chassis air guide (CAG) A round air duct that helps to pull and direct fresh air from outside a computer case to the cooler and processor.

child directory *See* subdirectory.

chip creep A condition in which chips loosen because of thermal changes.

chipset A group of chips on the motherboard that controls the timing and flow of data and instructions to and from the CPU.

chkdsk A Windows utility that searches for bad sectors on a volume and recovers data from them if possible.

clamping voltage The maximum voltage allowed through a surge suppressor, such as 175 or 330 volts.

classful subnet mask A subnet mask that contain all ones or all zeroes in an octet. For example, 11111111.11111111.11111111.00000000 or 255.255.255.0.

classless subnet mask A subnet mask that can have a mix of zeroes and ones in one octet. For example, 11111111.11111111.11110000.00000000 or 255.255.240.0.

client/server A computer concept whereby one computer (the client) requests information from another computer (the server).

client/server applications An application that has two components. The client software requests data from the server software on the same or another computer.

clock speed The speed, or frequency, expressed in MHz, that controls activity on the motherboard and is generated by a crystal or oscillator located somewhere on the motherboard.

cluster One or more sectors that constitute the smallest unit of space on a disk for storing data (also referred to as a file allocation unit). Files are written to a disk as groups of whole clusters.

CMOS (complementary metal-oxide semiconductor) The technology used to manufacture microchips. CMOS chips require less electricity, hold data longer after the electricity is turned off, and produce less heat than earlier technologies. The configuration or setup chip is a CMOS chip.

CMOS battery The battery on the motherboard used to power the CMOS chip when the computer is unplugged.

CMOS configuration chip A chip on the motherboard that contains a very small amount of memory, or RAM, enough to hold configuration, or setup, information about the computer. The chip is powered by a battery when the PC is turned off. *Also called* CMOS setup chip or CMOS RAM chip.

CMOS RAM Memory contained on the CMOS configuration chip.

CMOS setup The program in system BIOS that can change the values in CMOS RAM. *Also called* BIOS setup.

CMOS setup chip *See* CMOS configuration chip.

coaxial cable Networking cable used with10-Mbps Ethernet ThinNet or ThickNet.

cold boot *See* hard boot.

COM1 (Communications port 1) The number assigned a serial port that determines the system resources used by the port. A port might be called a COM1 port or a COM2 port.

command prompt window A Windows utility that is used to enter multiple commands to perform a variety of tasks.

communication and networking riser (CNR) A specification for a small expansion slot on a motherboard that accommodates a small audio, modem, or network riser card.

compact case A type of case used in low-end desktop systems. Compact cases, *Also called* low-profile or slimline cases, follow either the NLX, LPX, or Mini LPX form factor. They are likely to have fewer drive bays, but they generally still provide for some expansion.

Complete PC Backup A Vista utility that can make a backup of the entire volume on which Vista is installed and can also back up other volumes.

compressed (zipped) folder A folder with a .zip extension that contains compressed files. When files are put in the folder, they are compressed. When files are moved to a regular folder, the files are decompressed.

Computer Management (Compmgmt.msc) A window that consolidates several Windows utilities called snap-ins.

computer name Character-based host name or NetBIOS name assigned to a computer.

connectionless protocol A protocol such as UDP that does not require a connection before sending a packet and does not guarantee delivery. An example of a UDP transmission is streaming video over the Web. *Also called* a best-effort protocol.

connection-oriented protocol In networking, a protocol that confirms that a good connection has been made before transmitting data to the other end. An example of a connection-oriented protocol is TCP.

console A window in which one or more Windows utility programs have been installed. The window is created using Microsoft Management Console, and installed utilities are called snap-ins.

constant angular velocity (CAV) A technology used by hard drives and newer CD-ROM drives whereby the disk rotates at a constant speed.

constant linear velocity (CLV) A CD-ROM format in which the spacing of data is consistent on the CD, but the speed of the disc varies depending on whether the data being read is near the center or the edge of the disc.

Cool'n'Quiet A feature of AMD processors that lowers power requirements and helps keep a system quiet.

cooler A combination cooling fan and heat sink mounted on the top or side of a processor to keep it cool.

copyright An individual's right to copy his/her own work. No one else, other than the copyright owner, is legally allowed to do so without permission.

C-RIMM (Continuity RIMM) A placeholder RIMM module that provides continuity so that every RIMM slot is filled.

CrossFire A technology by ATI Technologies that allows for multiple video cards to be installed in the same system. *Compare to* SLI (Scalable Link Interface).

crossover cable A cable used to connect two PCs into the simplest network possible. Also used to connect two hubs to two switches.

CRT (Cathode-Ray Tube) An older technology used by monitors in which the filaments at the back of a cathode tube shoot a beam of electrons to the screen at the front of the tube.

data bus The lines on the system bus that the CPU uses to send and receive data.

data cartridge A type of tape medium typically used for backups. Full-sized data cartridges are 4 x 6 x $\frac{1}{2}$ inches in size. A minicartridge is only $3\frac{1}{4}$ x $2\frac{1}{2}$ x $\frac{3}{5}$ inches.

data classifications Categories of data used to determine who owns the data and who needs what type of access to it.

Data Collector Sets A utility within the Reliability and Performance Monitor that is used to collect your own data about a system.

data line protector A surge protector designed to work with the telephone line to a modem.

data migration Moving data from one application to another application or from one storage media to another, and most often involves a change in the way the data is formatted.

data path size The number of lines on a bus that can hold data, for example, 8, 16, 32, and 64 lines, which can accommodate 8, 16, 32, and 64 bits at a time.

data throughput *See* bandwidth.

daughter card *See* riser card.

DDR *See* Double Data Rate SDRAM.

DDR SDRAM *See* Double Data Rate SDRAM.

DDR2 *See* DDR2 SDRAM.

DDR2 SDRAM A version of SDRAM that is faster than DDR and uses less power. *Also called* DDR2.

DDR3 A version of SDRAM that is faster than DDR2 memory and that can use triple channels.

default gateway The gateway a computer on a network will use to access another network unless it knows to specifically use another gateway for quicker access to that network.

default printer The printer Windows prints to unless another printer is selected.

Defrag (Defrag.exe) Windows program and command to defragment a volume.

defragment To rewrite a file to a disk in one contiguous chain of clusters, thus speeding up data retrieval.

degauss button A button on a CRT monitor that can be pressed to eliminate accumulated or stray magnetic fields around the monitor which can cause a CRT monitor to flicker or have wavy lines.

desktop The initial screen that is displayed when an OS has a GUI interface loaded.

desktop case A computer case that sits flat on a desktop doing double duty as a monitor stand.

device driver A program stored on the hard drive that tells the computer how to communicate with a hardware device such as a printer or modem.

DHCP (Dynamic Host Configuration Protocol) A protocol used by a server to assign dynamic IP addresses to computers on a network when they first access the network.

diagnostic card Adapter cards designed to discover and report computer errors and conflicts at POST time (before the computer boots up), often by displaying a number on the card.

dial-up networking A Windows utility that uses a modem and telephone line to connect to a network.

digital certificate A code used to authenticate the source of a file or document or to identify and authenticate a person or organization sending data over a network. The code is assigned by a certificate authority such as VeriSign and includes

a public key for encryption. *Also called* digital ID or digital signature.

digitizer *See* graphics tablet.

digitizing tablet *See* graphics tablet.

DIMM (dual inline memory module) A miniature circuit board installed on a motherboard to hold memory. DIMMs can hold up to 4 GB of RAM on a single module.

diode An electronic device that allows electricity to flow in only one direction. Used in a rectifier circuit.

DIP (dual inline package) switch A switch on a circuit board or other device that can be set to on or off to hold configuration or setup information.

direct current (DC) Current that travels in only one direction (the type of electricity provided by batteries). Computer power supplies transform AC to low DC.

Direct Rambus DRAM A memory technology by Rambus and Intel that uses a narrow network-type system bus. Memory is stored on a RIMM module. *Also called* RDRAM, Rambus, or Direct RDRAM.

Direct RDRAM *See* Direct Rambus DRAM.

disk cloning *See* drive imaging.

disk imaging *See* drive imaging.

Disk Management A Windows utility used to display, create, and format partitions on basic disks and dynamic volumes on dynamic disks.

disk quota A limit placed on the amount of disk space that is available to users. Requires a Windows NTFS volume.

disk thrashing A condition that results when the hard drive is excessively used for virtual memory because RAM is full. It dramatically slows down processing and can cause premature hard drive failure.

distribution Any version of Linux.

distribution server A file server holding Windows setup files used to install Windows on computers networked to the server.

DMA (direct memory access) channel A number identifying a channel whereby a device can pass data to memory without involving the CPU. Think of a DMA channel as a shortcut for data moving to/from the device and memory.

DMA (direct memory access) transfer mode A transfer mode used by devices, including the hard drive, to transfer data to memory without involving the CPU.

DNS (Domain Name System or Domain Name Service) A distributed pool of information (called the name space) that keeps track of assigned host names and domain names and their corresponding IP addresses, and the system that allows a host to locate information in the pool.

DNS server A computer that can find an IP address for another computer when only the fully qualified domain name is known.

docking station A device that receives a notebook computer and provides additional secondary storage and easy connection to peripheral devices.

domain In Windows, a logical group of networked computers, such as those on a college campus, that share a centralized directory database of user account information and security for the entire domain.

domain name A unique, text-based name that identifies a network. A fully qualified domain name is sometimes loosely called a domain name. *Also see* fully qualified domain name.

domain profile The level of protection that Vista uses for Windows Firewall when it recognizes the computer is connected to a domain. The protection level is low because Vista expects network security is being managed by the domain's operating system. *Compare to* private profile and public profile.

Double Data Rate SDRAM (DDR SDRAM) A type of memory technology used on DIMMs that runs at twice the speed of the system clock. *Also called* DDR SDRAM, SDRAM II, and DDR.

double-sided A DIMM feature whereby memory chips are installed on both sides of a DIMM.

DRAM *See* dynamic RAM (DRAM).

drive image An exact duplicate of a hard drive stored on another media such as a group of CDs or DVDs. *Also see* drive imaging.

drive imaging Making an exact image of a hard drive, including partition information, boot sectors, operating system installation, and application software to replicate the hard drive on another system or recover from a hard drive crash. *Also called* disk cloning or disk imaging.

drive lock password A password stored on a hard drive. You must enter the password at startup before you can access data on the drive. The password is set using BIOS setup screens.

Driver Query A Windows tool that can be used to direct information about drivers to a file, including information about digital signatures.

Driver Verifier (verifier.exe) A Windows utility that runs in the background to put stress on drivers as they are loaded and running and that is used to troubleshoot intermittent driver problems that are not easily detected by other means.

DSL (Digital Subscriber Line) A telephone line that carries digital data from end to end, and is used as a type of broadband Internet access.

dual boot The ability to boot using either of two different OSs, such as Windows XP and Windows Vista.

dual channels A motherboard feature that improves memory performance by providing two 64-bit channels between memory and the chipset. DDR, DDR2, and DDR3 DIMMs can use dual channels.

dual core A processor package that contains two core processors, thus supporting four instructions at once.

dual inline package (DIP) switch *See* DIP (dual inline package) switch.

dual ranked Double-sided DIMMs that provide two 64-bit banks. The memory controller accesses first one bank and then the other. Dual-ranked DIMMs do not perform as well as single-ranked DIMMs.

duplex printing Printing on both sides of the paper.

DVD (Digital Versatile Disc or Digital Video Disc) A technology used by optical discs that uses a red laser beam and can hold up to 17 GB of data.

DVI-D A DVI (Digital Visual Interface) video port that works only with digital monitors.

DVI-I A DVI (Digital Visual Interface) video port that supports both analog and digital monitors.

dxdiag.exe A Windows command to display information about hardware and diagnose problems with DirectX.

dye-sublimation printer A type of printer with photo-lab-quality results that uses transparent dyed film. The film is heated, which causes the dye to vaporize onto glossy paper.

dynamic disks A way to partition one or more hard drives, in which information about the drive is stored in a database at the end of the drive. *Compare to* basic disk.

dynamic IP address An assigned IP address that is used for the current session only. When the session is terminated, the IP address is returned to the list of available addresses.

dynamic RAM (DRAM) The most common type of system memory, it requires refreshing every few milliseconds.

dynamic volume A volume type used with dynamic disks by which you can create a single volume that uses space on multiple hard drives.

ECC (error-correcting code) A chipset feature on a motherboard that checks the integrity of data stored on DIMMs or RIMMs and can correct single-bit errors in a byte. More advanced ECC schemas can detect, but not correct, double-bit errors in a byte.

ECP (Extended Capabilities Port) A bidirectional parallel port mode that uses a DMA channel to speed up data flow.

EDO (extended data out) A type of outdated RAM that was faster than conventional RAM because it eliminated the delay before it issued the next memory address.

EIDE (Enhanced IDE) A standard for managing the interface between secondary storage devices and a computer system. A system can support up to four parallel ATA IDE devices such as hard drives, CD-ROM drives, and DVD drives.

electromagnetic interference (EMI) A magnetic field produced as a side effect from the flow of electricity. EMI can cause corrupted data in data lines that are not properly shielded.

electrostatic discharge (ESD) Another name for static electricity, which can damage chips and destroy motherboards, even though it might not be felt or seen with the naked eye.

elevated command prompt window A Vista command prompt window that allows commands that require administrative privileges.

Emergency Repair Disk (ERD) A Windows 2000 record of critical information about your system that can be used to fix a problem with the OS. The ERD enables restoration of the Windows 2000 registry on your hard drive.

Emergency Repair Process A Windows 2000 process that restores the OS to its state at the completion of a successful installation.

Encrypted File System (EFS) A way to use a key to encode a file or folder on an NTFS volume to protect sensitive data. Because it is an integrated system service, EFS is transparent to users and applications.

encryption The process of putting readable data into an encoded form that can only be decoded (or decrypted) through use of a key.

Energy Star "Green" systems that satisfy the EPA requirements to decrease the overall consumption of electricity. *See also* Green Standards.

enhanced CAT-5 (CAT-5e) A improved version of CAT-5 cable that reduces crosstalk.

Enhanced Intel SpeedStep Technology (EIST) A processor feature used by Intel that steps down processor frequency when the processor is idle to conserve power and lower heat.

EPP (Enhanced Parallel Port) A parallel port that allows data to flow in both directions

(bidirectional port) and is faster than original parallel ports on PCs that allowed communication only in one direction.

escalate When a technician passes a customer's problem to higher organizational levels because he or she cannot solve the problem.

Event Viewer (Eventvwr.msc) A Windows tool useful for troubleshooting problems with Windows, applications, and hardware. It displays logs of significant events such as a hardware or network failure, OS failure, OS error messages, a device or service that has failed to start, or General Protection Faults.

Everyone group In Windows, the Authenticated Users group as well as the Guest account. When you share a file or folder on the network, Windows, by default, gives access to the Everyone group.

Execute Disable Bit A processor security feature by Intel that prevents software from executing or reproducing itself if it appears to be malicious.

executive services In Windows 2000/XP/Vista, a group of components running in kernel mode that interfaces between the subsystems in user mode and the HAL.

expansion card A circuit board inserted into a slot on the motherboard to enhance the capability of the computer.

expansion slot A narrow slot on the motherboard where an expansion card can be inserted. Expansion slots connect to a bus on the motherboard.

expert system Software that uses a database of known facts and rules to simulate a human expert's reasoning and decision-making processes.

ExpressCard The latest PCMCIA standard for notebook I/O cards that uses the PCI Express and USB 2.0 data transfer standards. Two types of Express-Cards are ExpressCard/34 (34mm wide) and ExpressCard/54 (54mm wide).

extended partition The only partition on a hard drive that can contain more than one logical drive. In Windows, a hard drive can have only a single extended partition. *Compare to* primary partition.

extension magnet brush A long-handled brush made of nylon fibers that are charged with static electricity to pick up stray toner inside a printer.

external SATA (eSATA) A standard for external drives based on SATA that uses a special external shielded SATA cable up to 2 meters long. eSATA is up to six times faster than USB or FireWire.

faceplate A metal or plastic plate that comes with the computer case and fits over the empty drive bays or slots for expansion cards to create a well-fitted enclosure around them.

Fast Ethernet *See* 100BaseT.

FAT (file allocation table) A table on a hard drive or floppy disk used by the FAT file system that tracks the clusters used to contain a file.

FAT12 The 12-bit wide, one-column file allocation table for a floppy disk, containing information about how each cluster or file allocation unit on the disk is currently used.

fault tolerance The degree to which a system can tolerate failures. Adding redundant components, such as disk mirroring or disk duplexing, is a way to build in fault tolerance.

ferrite clamp A clamp installed on a network cable to protect against electrical interference.

fiber optic A dedicated, leased line used for Internet access that uses fiber-optic cable from the ISP to residence or place of business.

fiber-optic cable Cable that transmits signals as pulses of light over glass strands inside protected tubing.

field replaceable unit (FRU) A component in a computer or device that can be replaced with a new component without sending the computer or device back to the manufacturer. Examples: power supply, DIMM, motherboard, floppy disk drive.

file allocation table (FAT) *See* FAT (file allocation table).

file allocation unit *See* cluster.

file attribute The properties assigned to a file. Examples of file attributes are read-only and hidden status.

file extension A portion of the name of a file that is used to identify the file type. In command lines, the file extension follows the filename and is separated from it by a period. For example, Msd.exe, where exe is the file extension.

File Signature Verification A Windows tool that displays information about digitally signed files, including device driver files and application files, and logs information to C:\Windows\Sigverif.txt.

file system The overall structure that an OS uses to name, store, and organize files on a disk. Examples of file systems are NTFS and FAT32.

File Transfer Protocol (FTP) *See* FTP (File Transfer Protocol).

file virus A virus that inserts virus code into an executable program file and can spread whenever that program is executed.

filename The first part of the name assigned to a file. In DOS, the filename can be no more than eight characters long and is followed by the file extension. In Windows, a filename can be up to 255 characters.

firewall Hardware or software that protects a computer or network from unauthorized access.

FireWire *See* IEEE 1394.

firmware Software that is permanently stored in a chip. The BIOS on a motherboard is an example of firmware.

flash ROM ROM that can be reprogrammed or changed without replacing chips.

flat panel monitors *See* LCD (Liquid Crystal Display) monitor.

FlexATX A version of the ATX form factor that allows for maximum flexibility in the size and shape of cases and motherboards. FlexATX is ideal for small, custom systems.

floppy disk drive (FDD) A drive that can hold either a $5\frac{1}{2}$ inch or $3\frac{1}{4}$ inch floppy disk. *Also called* floppy drive.

floppy drive *See* floppy disk drive (FDD).

folder *See* subdirectory.

form factor A set of specifications on the size, shape, and configuration of a computer hardware component such as a case, power supply, or motherboard.

formatting Preparing a hard drive volume, logical drive, or floppy disk for use by placing tracks and sectors on its surface to store information (for example, FORMAT A:).

FPM (fast page memory) An outdated memory mode used before the introduction of EDO memory. FPM improved on earlier memory types by sending the row address just once for many accesses to memory near that row.

fragmented file A file that has been written to different portions of the disk so that it is not in contiguous clusters.

front panel header A group of pins on a motherboard that connect to wires that are connected to the front panel of the computer case.

front-side bus (FSB) *See* system bus.

FTP (File Transfer Protocol) The protocol used to transfer files over a TCP/IP network.

full-duplex Communication that happens in two directions at the same time.

fully qualified domain name (FQDN) A host name and a domain name such as *jsmith.amazon.com*. Sometimes loosely referred to as a domain name.

gateway A computer or other device that connects networks.

GDI (Graphics Device Interface) A core Windows component responsible for building graphics data to display or print. A GDI printer relies on Windows to construct a page to print and then receives the constructed page as bitmap data. *Also see* XPS (XML Paper Specification).

General Protection Fault (GPF) A Windows error that occurs when a program attempts to access a memory address that is not available or is no longer assigned to it.

Gigabit Ethernet A version of Ethernet that supports rates of data transfer up to 1 gigabit per second.

gigahertz (GHz) One thousand MHz, or one billion cycles per second.

global account Sometimes called a domain user account, the account is used at the domain level, created by an administrator, and stored in the SAM (security accounts manager) database on a Windows domain controller.

graphical user interface (GUI) An interface that uses graphics as compared to a command-driven interface.

graphics card *See* video card.

graphics tablet An input device that can use a stylus to hand draw. It works like a pencil on the tablet and uses a USB port.

grayware A program that AV software recognizes to be potentially harmful or potentially unwanted.

Green Standards A computer or device that conforms to these standards can go into sleep or doze mode when not in use, thus saving energy and helping the environment. Devices that carry the Green Star or Energy Star comply with these standards.

ground bracelet A strap you wear around your wrist that is attached to the computer case, ground mat, or another ground so that ESD is discharged from your body before you touch sensitive components inside a computer. *Also called* static strap, ground strap, ESD bracelet.

GSM (Global System for Mobile Communications) An open standard for cellular WANs and cell phones that uses digital communication of data and is accepted and used worldwide.

guest account A user account that has limited permissions on a system and cannot make changes to it. Guest user accounts are intended for one-time or infrequent users of a workstation.

HAL (hardware abstraction layer) The low-level part of Windows 2000/XP/Vista, written specifically for each CPU technology, so that only the HAL must change when platform components change.

half-duplex Communication between two devices whereby transmission takes place in only one direction at a time.

half-life The time it takes for the strength of a storage media to weaken by half. *Also called* life expectancy or shelf life.

hard boot Restart the computer by turning off the power or by pressing the Reset button. *Also called* a cold boot.

hard copy Output from a printer to paper.

hard disk drive (HDD) *See* hard drive.

hard drive The main secondary storage device of a PC. Two technologies are currently used by hard drives: magnetic and solid state. *Also called* a hard disk drive (HDD).

hard drive dock A device used to house and protect a hard drive outside the computer case and connect it to an eSATA, USB, or other type port on the computer. *Also called* a toaster.

hard-disk loading The illegal practice of installing unauthorized software on computers for sale. Hard-disk loading can typically be identified by the absence of original software disks in the original system's shipment.

hardware The physical components that constitute the computer system, such as the monitor, the keyboard, the motherboard, and the printer.

hardware address *See* MAC address.

HDMI (High-Definition Multimedia Interface) A digital audio and video interface standard currently used on televisions and other home theater equipment and expected to ultimately replace DVI.

head The top or bottom surface of one platter on a hard drive. Each platter has two heads.

heat sink A piece of metal, with cooling fins, that can be attached to or mounted on an integrated chip (such as the CPU) to dissipate heat.

hertz (Hz) Unit of measurement for frequency, calculated in terms of vibrations, or cycles per second. For example, for 16-bit stereo sound, a frequency of 44,000Hz is used. *See also* megahertz.

hidden share A folder whose folder name ends with a $ symbol. When you share the folder, it does not appear in the Network window or My Network Places window.

high-level formatting Formatting performed by the Windows Format program (for example, FORMAT C:/S), the Windows installation program, or the Disk Management utility. The process creates the boot record, file system, and root directory on the volume or logical drive and makes the volume or drive bootable). *Also called* OS formatting or operating system formatting.

HKEY_CLASSES_ROOT (HKCR) A Windows registry key that stores information to determine which application is opened when the user double-clicks a file.

HKEY_CURRENT_CONFIG (HKCC) A Windows registry key that contains Plug and Play information about the hardware configuration that is used by the computer at startup.

HKEY_CURRENT_USER (HKCU) A Windows registry key that contains data about the current user. The key is built when a user logs on using data kept in the HKEY_USERS key and data kept in the Ntuser.dat file of the current user.

HKEY_LOCAL_MACHINE (HKLM) An important Windows registry key that contains hardware, software, and security data. The key is built using data taken from the SAM hive, the Security hive, the Software hive, and the System hive and from data collected at startup about the hardware.

HKEY_USERS (HKU) A Windows registry key that contains data about all users and is taken from the Default hive.

hop count *See* time to live (TTL).

host Any computer or other device on a network that has been assigned an IP address. *Also called* node.

host adapter The circuit board that controls a SCSI bus supporting as many as seven or fifteen separate devices. The host adapter controls communication between the SCSI bus and the PC.

host bus *See* memory bus or system bus.

host name A name that identifies a computer, printer, or other device on a network. The host name together with the domain name is called the fully qualified domain name.

hosts file A file in the C:\Windows\System32\drivers\etc folder that contains computer names and their associated IP addresses on the local network. The file has no file extension.

hot-plugging Plugging in a device while the computer is turned on. The computer will sense the device and configure it without rebooting. In addition, the device can be unplugged without an OS error. *Also called* hot-swapping.

hot-swapping *See* hot-plugging.

HTML (HyperText Markup Language) A markup language used for hypertext documents on the World Wide Web. This language uses tags to format the document, create hyperlinks, and mark locations for graphics.

HTTP (Hypertext Transfer Protocol) The communications protocol used by the World Wide Web.

HTTPS (HTTP secure) A version of the HTTP protocol that includes data encryption for security.

hub A network device or box that provides a central location to connect cables and distributes incoming data packets to all other devices connected to it. *Compare to* switch.

hybrid hard drive A hard drive that uses both magnetic and SSD technologies. The bulk of storage uses the magnetic component, and a storage buffer on the drive is made of an SSD component. Vista ReadyDrive supports hybrid hard drives.

hypertext Text that contains links to remote points in the document or to other files, documents, or graphics. Hypertext is created using HTML and is commonly distributed from Web sites.

Hyper-Threading The Intel technology that allows each logical processor within the processor package to handle an individual thread in parallel with other threads being handled by other processors within the package.

HyperTransport The AMD technology that allows each logical processor within the processor package to handle an individual thread in parallel with other threads being handled by other processors within the package.

i.Link *See* IEEE 1394.

I/O address Numbers that are used by devices and the CPU to manage communication between them.

I/O controller card An older card that can contain serial, parallel, and game ports and floppy drive and IDE connectors.

I/O shield A plate installed on the rear of a computer case that provides holes for I/O ports coming off the motherboard.

IDE (Integrated Drive Electronics or Integrated Device Electronics) A hard drive whose disk controller is integrated into the drive, eliminating the need for a controller cable and thus increasing speed, as well as reducing price. *See also* EIDE.

IEEE 1284 A standard for parallel ports and cables developed by the Institute for Electrical and Electronics Engineers and supported by hardware manufacturers.

IEEE 1394 Standards for an expansion bus that can also be configured to work as a local bus. It is expected to replace the SCSI bus, providing an easy method to install and configure fast I/O devices. *Also called* FireWire and i.Link.

IEEE 1394.3 A standard, developed by the 1394 Trade Association, that is designed for peer-to-peer data transmission and allows imaging devices to send images and photos directly to printers without involving a computer.

IEEE 802.11a/b/g/n IEEE specifications for wireless communication and data synchronization. Also known as Wi-Fi. IEEE b/g/n standards are current, and IEEE 802.11a is outdated. Apple Computer's versions of 802.11 standards are called AirPort and AirPort Extreme.

IMAP4 (Internet Message Access Protocol version 4) Version 4 of the IMAP protocol, which is an e-mail protocol used to download incoming email and has more functionality than its predecessor, POP. IMAP can archive messages in folders on the e-mail server and can allow the user to choose not to download attachments. *Compare to* POP (Post Office Protocol).

incident report A report your organization might require to report unusual or atypical events.

infestation Any unwanted program that is transmitted to a computer without the user's knowledge and that is designed to do varying degrees of damage to data and software. There are a number of different types of infestations, including viruses, Trojan horses, worms, and logic bombs. *See* malicious software.

infrared transceiver A wireless transceiver that uses infrared technology to support some wireless devices such as keyboards, mice, and printers. A motherboard might have an embedded infrared transceiver, or the transceiver might plug into a USB or serial port. The technology is defined by the Infrared Data Association (IrDA). *Also called* an IrDA transceiver, IR transceriver, or infrared port.

inherited permissions Permissions assigned by Windows that are attained from a parent object.

inkjet printer A type of ink dispersion printer that uses cartridges of ink. The ink is heated to a boiling point and then ejected onto the paper through tiny nozzles.

Institute of Electrical and Electronics Engineers (IEEE) A nonprofit organization that develops standards for the computer and electronics industries.

intelligent UPS A UPS connected to a computer by way of a USB or serial cable so that software on the computer can monitor and control the UPS. *Also called* smart UPS.

interlaced A type of display in which the electronic beam of a monitor draws every other line with each pass, which lessens the overall effect of a lower refresh rate.

internal bus The bus inside the CPU that is used for communication between the CPU's internal components.

Internet card A device that plugs into a computer and works like a cell phone to connect to a cellular WAN to give your computer Internet access. *Also called* an air card.

Internet Service Provider (ISP) A commercial group that provides Internet access for a monthly fee; AOL, Earthlink, and Comcast are large ISPs.

intranet A private network that uses the TCP/IP protocols.

inverter A device that converts DC to AC.

IP (Internet Protocol) The rules of communication in the TCP/IP stack that control segmenting data into packets, routing those packets across networks, and then reassembling the packets once they reach their destination.

IP address A 32-bit address consisting of four numbers separated by periods, used to uniquely identify a device on a network that uses TCP/IP protocols. The first numbers identify the network; the last numbers identify a host. An example of an IP address is 206.96.103.114.

IR transceiver *See* infrared transceiver.

IrDA (Infrared Data Association) transceiver *See* infrared transceiver.

IRQ (Interrupt ReQuest) line A line on a bus that is assigned to a device and is used to signal the CPU for servicing. These lines are assigned a reference number (for example, the normal IRQ for a printer is IRQ 7).

ISA (Industry Standard Architecture) slot An older slot on the motherboard used for slower I/O devices, which can support an 8-bit or a 16-bit data path. ISA slots have been replaced by PCI slots.

ISDN (Integrated Services Digital Network) A broadband telephone line that can carry data at about five times the speed of regular telephone lines. Two channels (telephone numbers) share a single pair of wires.

isochronous data transfer A method used by IEEE 1394 and other technologies to transfer data continuously without breaks.

joule A measure of work or energy. One joule of energy produces one watt of power for one second.

JPEG (Joint Photographic Experts Group) A graphical compression scheme that allows the user to control the amount of data that is averaged and sacrificed as file size is reduced. It is a common Internet file format. Most JPEG files have a .jpg extension.

jumper Two wires that stick up side by side on the motherboard or other device and are used to hold configuration information. The jumper is considered closed if a cover is over the wires, and open if the cover is missing.

Kerberos A protocol used to encrypt account names and passwords that are sent to a network controller for validation. Kerberos is the default protocol used by Windows 2000/XP/Vista.

kernel The portion of an OS that is responsible for interacting with the hardware.

kernel mode A Windows 2000/XP/Vista "privileged" processing mode that has access to hardware components.

key (1) In encryption, a secret number or code used to encode and decode data. (2) In Windows, a section name of the Windows registry.

key fob A device, such as a type of smart card, that can fit conveniently on a key chain.

keyboard A common input device through which data and instructions may be typed into computer memory.

keylogger A type of spyware that tracks your keystrokes, including passwords, chat room sessions, e-mail messages, documents, online purchases, and anything else you type on your PC. Text is logged to a text file and transmitted over the Internet without your knowledge.

KVM (Keyboard, Video, and Mouse) switch A switch allows you to use one keyboard, mouse, and monitor for multiple computers. Some KVM switches also include sound ports so that speakers and a microphone can be shared among multiple computers.

LAN (local area network) A computer network that covers only a small area, usually within one building.

land grid array (LGA) A feature of a CPU socket whereby pads, called lands, are used to make contact in uniform rows over the socket. *Compare to* pin grid array (PGA).

lands Microscopic flat areas on the surface of a CD or DVD that separate pits. Lands and pits are used to represent data on the disk.

laptop computer *See* notebook.

laser printer A type of printer that uses a laser beam to control how toner is placed on the page and then uses heat to fuse the toner to the page.

Last Known Good Configuration In Windows 2000/XP/Vista, registry settings and device drivers

that were in effect when the computer last booted successfully. These settings can be restored during the startup process to recover from errors during the last boot.

latency Delays in network transmissions resulting in slower network performance. Latency is measured by the round-trip time it takes for a data packet to travel from source to destination and back to source.

LBA (logical block addressing) mode A mode of addressing information on hard drives in which the BIOS and operating system view the drive as one long linear list of LBAs or addressable sectors.

LCD (Liquid Crystal Display) monitor A monitor that uses LCD technology. LCD produces an image using a liquid crystal material made of large, easily polarized molecules. LCD monitors are flatter than CRT monitors and take up less desk space. *Also called* a flat-panel monitor.

Level 1 (L1) cache Memory on the processor die used as a cache to improve processor performance.

Level 2 (L2) cache Memory in the processor package, but not on the processor die. The memory is used as a cache or buffer to improve processor performance. *Also see* Level 1 (L1) cache.

Level 3 (L3) cache Cache memory further from the processor core than Level 2 cache, but still in the processor package.

license Permission for an individual to use a product or service. A manufacturer's method of maintaining ownership, while granting permission for use to others.

limited account Windows XP user accounts known as Users in Windows 2000, which have read-write access only on their own folders, read-only access to most system folders, and no access to other users' data. In Windows Vista, a standard account is a limited account.

line conditioners A device that regulates, or conditions power, providing continuous voltage during brownouts and spikes.

line protocol A protocol such as PPP used to send data packets destined for a network over telephone lines.

liquid cooling system A method to cool overclocked processors that uses a small pump inside the computer case and tubes that move water or other liquid around components and then away from them to a place where fans can cool the liquid.

Lithium Ion Currently the most popular type of battery popular with notebook computers that is more efficient than earlier types. Sometimes abbreviated as "Li-Ion" battery.

loadstate A command used by the User State Migration Tool (USMT) to copy user settings and data temporarily stored on a server or removable media to a new computer. *Also see* scanstate.

local account A user account that applies only to the local computer and cannot be used to access resources from other computers on the network. *Compare to* global account.

local bus A bus that operates at a speed synchronized with the CPU frequency. The system bus is a local bus.

local printer A printer connected to a computer by way of a port on the computer. *Compare to* network printer.

local profile User profile that is stored on a local computer and cannot be accessed from another computer on the network.

local shares Folders on a computer that are shared with others on the network by using a folder's Properties box. Local shares are used with a workgroup and not with a domain.

logic bomb A type of malicious software that is dormant code added to software and triggered at a predetermined time or by a predetermined event.

logical drive A portion or all of a hard drive extended partition that is treated by the operating system as though it were a physical drive. Each logical drive is assigned a drive letter, such as drive F, and contains a file system. *Compare to* volume.

Logical Unit Number (LUN) A number assigned to a logical device (such as a tray in a CD changer) that is part of a physical SCSI device, which is assigned a SCSI ID.

low-level formatting A process (usually performed at the factory) that electronically creates the hard drive tracks and sectors and tests for bad spots on the disk surface.

low-profile cases *See* compact case.

LPT (Line Printer Terminal) Assignments of system resources that are made to a parallel port and that are used to manage a print job. Two possible LPT configurations are referred to as LPT1: and LPT2:.

MAC (Media Access Control) address A 48-bit hardware address unique to each NIC card or onboard network controller and assigned by the manufacturer. The address is often printed on the adapter as hexadecimal numbers. An example is 00 00 0C 08 2F 35. *Also called* a physical address, an adapter address, or a hardware address.

macro A small sequence of commands, contained within a document, that can be automatically

executed when the document is loaded, or executed later by using a predetermined keystroke.

macro viruses A virus that can hide in the macros of a document file.

magnetic hard drive One of two technologies used by hard drives where data is stored as magnetic spots on disks that rotate at a high speed. The other technology is solid state drive (SSD).

main board *See* motherboard.

malicious software Any unwanted program that is transmitted to a computer without the user's knowledge and that is designed to do varying degrees of damage to data and software. Types of infestations include viruses, Trojan horses, worms, adware, spyware, keyloggers, browser hijackers, dialers, and downloaders. *Also called* malware or an infestation.

malware *See* malicious software.

MAN (metropolitan area network) A network that covers a large campus or city. A small MAN is sometimes called a CAN or campus area network.

Master Boot Record (MBR) The first sector on a hard drive, which contains the partition table and a program the BIOS uses to boot an OS from the drive.

master file table (MFT) The database used by the NTFS file system to track the contents of a volume or logical drive.

Material Safety Data Sheet (MSDS) A document that explains how to properly handle substances such as chemical solvents; it includes information such as physical data, toxicity, health effects, first aid, storage, disposal, and spill procedures.

media reader A device that provides slots for memory cards and can be an internal or external device. *Also called* a card reader or memory card reader/writer.

megahertz (MHz) One million Hz, or one million cycles per second. *See* hertz (Hz).

memory Physical microchips that can hold data and programming, located on the motherboard or expansion cards.

memory bank The memory a processor addresses at one time. Today's desktop and notebook processors use a memory bank that is 64 bits wide.

memory cache A small amount of faster RAM that stores recently retrieved data, in anticipation of what the CPU will request next, thus speeding up access.

memory card reader/writer *See* media reader.

Memory Diagnostics (mdsched.exe) A Vista utility used to test memory.

memory dump The contents of memory saved to a file at the time an event halted the system. Support technicians can analyze the dump file to help understand the source of the problem.

memory paging In Windows, swapping blocks of RAM memory to an area of the hard drive to serve as virtual memory when RAM is low.

MicroATX A version of the ATX form factor. MicroATX addresses some new technologies that were developed after the original introduction of ATX.

microcode A programming instruction that can be executed by a CPU without breaking the instruction down into simpler instructions. Typically, a single command line in a Visual Basic or C++ program must be broken down into numerous microcode commands.

MicroDIMM A type of memory module used on sub-notebooks that has 144 pins and uses a 64-bit data path.

microprocessor *See* central processing unit (CPU).

Microsoft Management Console (MMC) A Windows utility to build customized consoles. These consoles can be saved to a file with an .msc file extension.

MIDI (Musical Instrument Digital Interface) A set of standards that are used to represent music in digital form. A MIDI port is a 5-pin DIN port that looks like a keyboard port, only larger.

mid-tower The most versatile and popular computer case, which is midrange in size and generally has around six expansion slots and four drive bays; provides moderate potential for expansion.

Mini PCI The PCI industry standard for desktop computer expansion cards, applied to a much smaller form factor for notebook expansion cards.

Mini PCI Express A standard used for notebook internal expansion slots that follows the PCI Express standards applied to notebooks. *Also called* Mini PCIe.

Mini PCIe *See* Mini PCI Express.

minicartridge A tape drive cartridge that is only $3\frac{1}{4}$ x $2\frac{1}{2}$ x $\frac{3}{5}$ inches. It is small enough to allow two drives to fit into a standard $5\frac{1}{2}$-inch drive bay of a PC case.

mirrored volume The term used by Windows for the RAID 1 level that duplicates data on one drive to another drive and is used for fault tolerance.

MMX (Multimedia Extensions) Multimedia instructions built into Intel processors to add functionality such as better processing of multimedia, SIMD support, and increased cache.

modem riser card A small modem card that uses an AMR or CNR slot. Part of the modem logic is contained in a controller on the motherboard.

monitor The most commonly used output device for displaying text and graphics on a computer.

motherboard The main board in the computer, *Also called* the system board. The CPU, ROM chips, DIMMs, RIMMs, and interface cards are plugged into the motherboard.

motherboard bus *See* system bus.

mount point A folder that is used as a shortcut to space on another volume which effectively increases the size of the folder to the size of the other volume. *Also see* mounted drive.

mounted drive A volume that can be accessed by way of a folder on another volume so that the folder has more available space. *Also see* mount point.

mouse A pointing and input device that allows the user to move a cursor around a screen and select items with the click of a button.

MP3 A method to compress audio files that uses MPEG level 1. It can reduce sound files as low as a 1:24 ratio without losing much sound quality.

MPEG (Moving Pictures Experts Group) A processing-intensive standard for data compression for motion pictures that tracks movement from one frame to the next and only stores the data that has changed.

multicasting A process in which a message is sent by one host to multiple hosts, such as when a video conference is broadcast to several hosts on the Internet.

multi-core processing A processor technology whereby the processor housing contains two or more processor cores that operate at the same frequency, but independently of each other.

multimeter A device used to measure the various components of an electrical circuit. The most common measurements are voltage, current, and resistance.

multipartite virus A combination of a boot sector virus and a file virus. It can hide in either type of program.

multiple input/multiple output (MIMO) A feature of the IEEE 802.11n standard for wireless networking whereby two or more antennas are used at both ends of transmissions to improve performance.

multiplier The factor by which the bus speed or frequency is multiplied to get the CPU clock speed.

multiprocessor platform A system that contains more than one processor. The motherboard has more than one processor socket and the processors must be rated to work in this multi-processor environment.

multisession A feature that allows data to be read from or written to a CD during more than one session. This is important if the disk was only partially filled during the first write.

name resolution The process of associating a character-based computer name to an IP address.

NAT (Network Address Translation) A protocol used to convert private IP addresses on a LAN to a public IP address before a data packet is sent over the Internet.

native resolution The actual (and fixed) number of pixels built into an LCD monitor. For the clearest display, always set the resolution to the native resolution.

NetBEUI (NetBIOS Extended User Interface) A fast, proprietary, and outdated Microsoft networking protocol used only by Windows-based systems, and limited to LANs because it does not support routing.

NetBIOS (Network Basic Input/Output System) An API protocol used by some applications to communicate over a NetBEUI network. NetBIOS has been replaced by Windows Sockets over a TCP/IP network.

NetBIOS name A computer name with a maximum of 15 characters that is suitable for use by the NetBIOS protocol.

netbook A low-end, inexpensive laptop with a small 9 or 10 inch screen and no optical drive that is generally used for Web browsing, email, and word processing by users on the go.

network adapter *See* network interface card.

Network Address Translation (NAT) *See* NAT (Network Address Translation).

network drive map Mounting a drive to a computer, such as drive E, that is actually hard drive space on another host computer on the network.

network interface card (NIC) An expansion card that plugs into a computer's motherboard and provides a port on the back of the card to connect a PC to a network. *Also called* a network adapter.

network printer A printer that any user on the network can access, through its own network card and connection to the network, through a

connection to a standalone print server, or through a connection to a computer as a local printer, which is shared on the network.

New Technology file system (NTFS) *See* NTFS (NT file system).

NLX A low-end form factor that is similar to LPX but provides greater support for current and emerging processor technologies. NLX was designed for flexibility and efficiency of space.

node *See* host.

noise An extraneous, unwanted signal, often over an analog phone line, that can cause communication interference or transmission errors. Possible sources are fluorescent lighting, radios, TVs, lightning, or bad wiring.

noninterlaced A type of display in which the electronic beam of a CRT monitor draws every line on the screen with each pass.

nonvolatile Refers to a kind of RAM that is stable and can hold data as long as electricity is powering the memory.

North Bridge That portion of the chipset hub that connects faster I/O buses (for example, AGP buses) to the system bus. *Compare to* South Bridge.

notebook A portable computer that is designed for travel and mobility. Notebooks use the same technology as desktop PCs, with modifications for conserving voltage, taking up less space, and operating while on the move. *Also called* a laptop computer.

notebook cases Cases used for notebook computers, which are proprietary in design, leave almost no room for expansion, and include a thermometer that controls the case fan.

notification area An area to the right of the taskbar that holds the icons for running services; these services include the volume control and network connectivity. *Also called* the system tray or systray.

NTFS (NT file system) The file system for the Windows 2000/XP/Vista operating system. NTFS cannot be accessed by other operating systems such as DOS or Windows Me. It provides increased reliability and security in comparison to other methods of organizing and accessing files. Vista requires that NTFS be used for the volume on which Vista is installed.

Ntldr (NT Loader) In Windows 2000/XP, the OS loader used on Intel systems.

octet Term for each of the four 8-bit numbers that make up an IP address. For example, the IP address 206.96.103.114 has four octets.

octo core A processor package that contains eight cores and supports 16 instructions at once.

ohm (Ω) The standard unit of measurement for electrical resistance. Resistors are rated in ohms.

on-board ports Ports that are directly on the motherboard, such as a built-in keyboard port or on-board network port.

operating system (OS) Software that controls a computer. An OS controls how system resources are used and provides a user interface, a way of managing hardware and software, and ways to work with files.

operating system formatting *See* high-level formatting.

original equipment manufacturer (OEM) license A software license that only manufacturers or builders of personal computers can purchase to be installed only on a computer intended for sale.

overclocking Running a processor at a higher frequency than is recommended by the manufacturer, which can result in an unstable system, but is a popular thing to do when a computer is used for gaming.

P states Standards for processors established by ACPI that define how processor frequency and voltage can be lowered to conserve power when the processor is not in use.

P1 connector Power connection on an ATX or BTX motherboard, which can have 20 or 24 pins.

packet Segment of network data that also includes header, destination address, and trailer information that is sent as a unit. *Also called* data packet or datagram.

page fault An OS interrupt that occurs when the OS is forced to access the hard drive to satisfy the demands for virtual memory.

page file *See* swap file.

pagefile.sys The Windows 2000/XP/Vista swap file.

PAN (personal area network) A small network consisting of personal devices at close range; the devices can include cell phones, PDAs, and notebook computers.

parallel ATA (PATA) An older IDE cabling method that uses a 40-pin flat or round data cable or an 80-conductor cable and a 40-pin IDE connector. *See also* serial ATA.

parallel port A female 25-pin port on a computer that can transmit data in parallel, 8 bits at a time, and is usually used with a printer. The names for parallel ports are LPT1 and LPT2.

parity An error-checking scheme in which a ninth, or "parity," bit is added. The value of the parity bit is

set to either 0 or 1 to provide an even number of ones for even parity and an odd number of ones for odd parity.

parity error An error that occurs when the number of 1s in the byte is not in agreement with the expected number.

partition A division of a hard drive that can hold volumes. Windows can support up to four partitions on one hard drive.

partition table A table at the beginning of the hard drive that contains information about each partition on the drive. The partition table is contained in the Master Boot Record.

passphrase A type of password that can contain a phrase where spaces are allowed. A passphrase is stronger than a one-word password.

password reset disk A device that holds a copy of the Windows password. Vista allows the device to be a flash media, but XP expects the device to be a floppy disk.

patch An update to software that corrects an error, adds a feature, or addresses security issues. *Also called* an update or service pack.

patch cable A network cable that is used to connect a PC to a hub, switch, or router.

path A drive and list of directories pointing to a file such as C:\Windows\System32.

PC Card A credit-card-sized adapter card that can be slid into a slot in the side of many notebook computers and is used by modems, network cards, and other devices. The card can use either a 16-bit or 32-bit data path. *Also called* PCMCIA Card.

PC Card slot An expansion slot on a notebook computer, into which a PC Card is inserted. Older PC Card slots used a 16-bit data path, but newer slots use a 32-bit data path. *Also called* a PCMCIA Card slot.

PCI (Peripheral Component Interconnect) bus A bus common to desktop computers that uses a 32-bit-wide or a 64-bit data path. Several variations of PCI exist. One or more notches on a PCI slot keep the wrong PCI cards from being inserted in the PCI slot.

PCI Express (PCIe) The latest evolution of PCI, which is not backward-compatible with earlier PCI slots and cards. PCIe slots come in several sizes including PCIe x1, PCIe x4, PCIe x8, and PCIe x16.

PCL (Printer Control Language) A printer language developed by Hewlett-Packard that communicates to a printer how to print a page.

PCMCIA (Personal Computer Memory Card International Association) Card *See* PC Card.

peer-to-peer (P2P) As applied to networking, a network of computers that are all equals, or peers. Each computer has the same amount of authority, and each can act as a server to the other computers.

perfmon.msc The program file for the Windows Reliability and Performance Monitor console.

peripheral device Devices that communicate with the CPU but are not located directly on the motherboard, such as the monitor, floppy drive, printer, and mouse.

permission propagation When Windows passes permissions from parent objects to child objects.

permissions Refer to the user accounts or user groups allowed to access data. Varying degrees of access can be assigned to a folder or file including full control, write, delete, or read-only.

phishing (1) A type of identity theft where a person is baited into giving personal data to a Web site that appears to be the Web site of a reputable company with which the person has an account. (2) Sending an e-mail message with the intent of getting the user to reveal private information that can be used for identify theft.

physical address *See* MAC address.

pin grid array (PGA) A feature of a CPU socket whereby the pins are aligned in uniform rows around the socket.

Ping (packet internet groper) A Windows and Unix command used to troubleshoot network connections. It verifies that the host can communicate with another host on the network.

pinout A description of how each pin on a bus, connection, plug, slot, or socket is used.

PIO (Programmed I/O) transfer mode A transfer mode that uses the CPU to transfer data from the hard drive to memory. PIO mode is slower than DMA mode.

pits Recessed areas on the surface of a CD or DVD, separating lands, or flat areas. Lands and pits are used to represent data on a disc.

pixel A small spot on a fine horizontal scan line. Pixels are illuminated to create an image on the monitor.

PKI (public key infrastructure) The standards used to encrypt, transport, and validate digital certificates over the Internet.

point stick A unique and popular pointing device embedded in the keyboard of IBM and Lenovo ThinkPad notebooks. *Also called* TrackPoint.

POP (Post Office Protocol) The protocol that an e-mail server and client use when the client requests the downloading of e-mail messages. The most recent version is POP3. POP is being replaced by IMAP.

port (1) As applied to services running on a computer, a number assigned to a process on a computer so that the process can be found by TCP/IP. *Also called* a port address or port number. (2) Another name for an I/O address. *See also* I/O address. (3) A physical connector, usually at the back of a computer, that allows a cable from a peripheral device, such as a printer, mouse, or modem, to be attached.

port address *See* I/O address.

port filtering To open or close certain ports so they can or cannot be used. A firewall uses port filtering to protect a network from unwanted communication.

port forwarding A technique that allows a computer on the Internet to reach a computer on a private network using a certain port when the private network is protected by a firewall device using NAT. Port forwarding is *Also called* tunneling.

port number *See* port.

port replicator A device designed to connect to a notebook computer in order to make it easy to connect the notebook to peripheral devices.

port triggering When a firewall opens a port because a computer behind the firewall initiates communication on another port.

POST (power-on self test) A self-diagnostic program used to perform a simple test of the CPU, RAM, and various I/O devices. The POST is performed by startup BIOS when the computer is first turned on, and is stored in ROM-BIOS.

PostScript A printer language developed by Adobe Systems which tells a printer how to print a page.

power conditioner A line conditioner that regulates, or conditions, power, providing continuous voltage during brownouts.

power cycle To turn a device off and back on.

power scheme A feature of Windows XP support for notebooks that allows the user to create groups of power settings for specific sets of conditions.

power supply A box inside the computer case that supplies power to the motherboard and other installed devices. Power supplies provide 3.3, 5, and 12 volts DC. *Also called* a power supply unit (PSU).

power supply tester A device that can test the output of each power cord coming from a power supply.

power supply unit (PSU) *See* power supply.

power user account A Windows XP account type that can read from and write to parts of the system other than the user's own folders, install applications, and perform limited administrative tasks.

PowerNow! An AMD technology that increases performance and lowers power requirements for processors.

power-on password A password that a computer uses to control access during the boot process.

PPP (Point-to-Point Protocol) A protocol that governs the methods for communicating via modems and dial-up telephone lines. The Windows Dial-up Networking utility uses PPP.

PPPoE (Point-to-Point Protocol over Ethernet) The protocol that describes how a PC is to interact with a broadband converter box, such as a cable modem, when the two are connected by an Ethernet cable, connected to a NIC in a PC.

primary partition A hard disk partition that can contain only one volume. The primary partition or volume contains a file system. In Windows, a hard drive can have up to three primary partitions. *Compare to* extended partition.

primary storage Temporary storage on the motherboard used by the CPU to process data and instructions. Memory is considered primary storage.

print spool A queue for print jobs.

printer A peripheral output device that produces printed output to paper. Different types include dot matrix, ink-jet, and laser printers.

printer maintenance kit A kit purchased from a printer manufacturer that contains the parts, tools, and instructions needed to perform routine printer maintenance.

private IP address An IP address that is used on a private TCP/IP network that is isolated from the Internet.

private profile The level of protection that Vista uses for Windows Firewall when it recognizes the computer is connected to a private network that is not part of a domain. This level offers moderate protection. *Compare to* public profile and domain profile.

processor *See* central processing unit (CPU).

processor frequency The frequency at which the CPU operates. Usually expressed in GHz.

product activation The process that Microsoft uses to prevent software piracy. For example, once Windows Vista is activated for a particular computer, it cannot be legally installed on another computer.

program A set of step-by-step instructions to a computer. Some are burned directly into chips, while others are stored as program files. Programs are written in languages such as Visual Basic and C++.

program file A file that contains instructions designed to be executed by the CPU.

progress bar A bar that displays when Vista is starting that indicates the kernel has loaded successfully and the user mode components of Vista are currently loading.

protocol A set of rules and standards that two entities use for communication.

public IP address An IP address available to the Internet.

Public Key Encryption An encryption technology that uses a public key and private key. The public key must be shared with others so they can use it to encrypt data that you can later decrypt by using your private key.

public profile The level of protection that Vista uses for Windows Firewall when it recognizes the computer is connected to an unsecured network. This level of protection is higher than that offered by the private profile and domain profile.

quad core A processor package that contains four cores and supports eight instructions at once.

Quality of Service (QoS) A measure of the success of communication over the Internet. Communication is degraded on the Internet when packets are dropped, delayed, delivered out of order, or corrupted. VoIP requires a high QoS.

quarantined computer A computer that is suspected of infection and is not allowed to use the network, is put on a different network dedicated to quarantined computers, or is allowed to access only certain network resources.

quarantined file A file that is suspected of infection and is placed in a special directory and cannot be opened. The user must decide to delete the file, leave it quarantined, or release it from quarantined status.

radio frequency interference (RFI) Interference produced by a magnetic field that is a side effect of electricity and is in the radio frequency range.

RAID (redundant array of inexpensive disks or redundant array of independent disks) Several methods of configuring multiple hard drives to store data to increase logical volume size and improve performance, or to ensure that if one hard drive fails, the data is still available from another hard drive.

RAID 0 Using space from two or more physical disks to increase the disk space available for a single volume. Performance improves because data is written evenly across all disks. Windows calls RAID 0 a striped volume.

RAID 1 A type of drive imaging that duplicates data on one drive to another drive and is used for fault tolerance. Windows calls RAID 1 a mirrored volume.

RAID 5 A technique that stripes data across three or more drives and uses parity checking, so that if one drive fails, the other drives can re-create the data stored on the failed drive. RAID 5 drives increase performance and provide fault tolerance. Windows calls these drives RAID-5 volumes.

RAID-5 volumes *See* RAID 5.

RAM (random access memory) Memory modules on the motherboard containing microchips used to temporarily hold data and programs while the CPU processes both. Information in RAM is lost when the PC is turned off.

RAM drive An area of memory that is treated as though it were a hard drive, but works much faster than a hard drive. The Windows 9x/Me startup disk uses a RAM drive. *Compare to* virtual memory.

Rambus *See* Direct Rambus DRAM.

RAS Latency (RL) A method of measuring access timing to memory, which is the number of clock cycles required to write or read a row of data off a memory module. RAS stands for Row Access Strobe. *Compare to* CAS Latency.

raw data Data sent to a printer without any formatting or processing.

RDRAM *See* Direct Rambus DRAM.

read/write head A sealed, magnetic coil device that moves across the surface of a disk either reading data from or writing data to the disk.

ReadyBoost A Vista utility that uses a flash drive or secure digital (SD) memory card to boost hard drive performance.

ReadyDrive The Vista technology that supports a hybrid hard drive.

Recovery Console A Windows 2000/XP command interface utility and OS that can be used to solve problems when Windows cannot load from the hard drive.

rectifier An electrical device that converts AC to DC. A PC power supply contains a rectifier.

refresh rate As applied to monitors, the number of times in one second an electronic beam can fill the screen with lines from top to bottom. *Also called* vertical scan rate.

Regedit.exe The program file used to edit the Windows registry.

registry A database that Windows uses to store hardware and software configuration information, user preferences, and setup information.

Registry Editor (Regedit.exe) The Windows utility used to edit the Windows registry.

Reliability and Performance Monitor A MMC snap-in (Perfmon.msc) that collects, records, and displays events, called Data Collector Sets, that can help track the performance and reliability of Windows. In Windows XP, this monitor is called the Performance Monitor or the System Monitor.

re-marked chips Chips that have been used and returned to the factory, marked again, and resold. The surface of the chips may be dull or scratched.

Remote Assistance A Windows XP/Vista feature that allows a support technician at a remote location to have full access to the Windows desktop.

Remote Desktop A Windows tool that gives a user access to his or her Windows desktop from anywhere on the Internet.

resistor An electronic device that resists or opposes the flow of electricity. A resistor can be used to reduce the amount of electricity being supplied to an electronic component.

resolution The number of pixels on a monitor screen that are addressable by software (example: 1024x768 pixels).

restore point A snapshot of the Windows XP/Vista system, usually made before installation of new hardware or applications.

REt (Resolution Enhancement technology) The term used by Hewlett-Packard to describe the way a laser printer varies the size of the dots used to create an image. This technology partly accounts for the sharp, clear image created by a laser printer.

reverse lookup To find the host name when you know a computer's IP address. The Nslookup command can perform a reverse lookup.

RGB (red, green, and blue) The three colors used to create a color space that consists of three dots, one for each color; *Also called* a triad.

RIMM A type of memory module developed by Rambus, Inc.

riser card A card that plugs into a motherboard and allows for expansion cards to be mounted parallel to the motherboard. Expansion cards are plugged into slots on the riser card.

RJ-11 A phone line connection found on modems, telephones, and house phone outlets.

RJ-45 connector A connector used with twisted-pair cable that connects the cable to the NIC.

ROM (read-only memory) Chips that contain programming code and cannot be erased.

root directory The main directory created when a hard drive or disk is first formatted. In Linux, it's indicated by a forward slash. In DOS and Windows, it's indicated by a backward slash.

rootkit A type of malicious software that loads itself before the OS boot is complete and can hijack internal Windows components so that it masks information Windows provides to user-mode utilities such as Windows Explorer or Task Manager.

router A device that connects networks and makes decisions as to the best routes to use when forwarding packets.

RS-232c (Reference Standard 232 revision c or Recommended Standard 232 revision c) The interface standard used by a serial port, which is sometimes called an RS-232 port.

S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) A system BIOS and hard drive feature that monitors hard drive performance, disk spin up time, temperature, distance between the head and the disk, and other mechanical activities of the drive in order to predict when the drive is likely to fail.

S/PDIF (Sony-Philips Digital Interface) sound port A sound port that connects to an external home theater audio system, providing digital output and the best signal quality.

S1 state The ACPI power saving mode where the hard drive and monitor are turned off and everything else runs normally.

S2 state The ACPI power saving mode where the hard drive, monitor, and processor are turned off.

S3 state The ACPI power saving mode where everything is shut down except RAM and enough of the system to respond to a wake-up call such as pressing the keyboard. *Also called* sleep mode or standby mode.

S4 state The ACPI power saving mode where everything in RAM is copied to a file on the hard drive and the system is shut down. When the system is turned on, the file is used to restore the system to its state before shut down. *Also called* hibernation.

sags *See* brownouts.

scam e-mail E-mail sent by a scam artist intended to lure you into a scheme.

scanstate A command used by the User State Migration Tool (USMT) to copy user settings and data from an old computer to a server or removable media. *Also see* loadstate.

script virus A type of virus that hides in a script which might execute when you click a link on a Web page or in an HTML e-mail message, or when you attempt to open an e-mail attachment.

SCSI (Small Computer System Interface) A fast interface between a host adapter and the CPU that can daisy chain as many as 7 or 15 devices on a single bus.

SCSI host adapter card A card that manages the SCSI bus and serves as the gateway to the system bus. *Also called* the host adapter.

SCSI ID A number from 0 to 15 assigned to each SCSI device attached to the daisy chain.

secondary logon Using administrative privileges to perform an operation when you are not logged on with an account that has these privileges.

secondary storage Storage that is remote to the CPU and permanently holds data, even when the PC is turned off, such as a hard drive.

sector On a disk surface one segment of a track, which almost always contains 512 bytes of data.

sequential access A method of data access used by tape drives, whereby data is written or read sequentially from the beginning to the end of the tape or until the desired data is found.

serial ATA (SATA) An ATAPI cabling method that uses a narrower and more reliable cable than the 80-conductor cable. *See also* parallel ATA.

serial ATA cable An IDE cable that is narrower and has fewer pins than the parallel IDE 80-conductor cable.

serial attached SCSI (SAS) A SCSI standard that allows for more than 15 devices on a single SCSI chain, uses smaller, longer, round cables, and uses smaller hard drive form factors that can support larger capacities than earlier versions of SCSI.

serial port A male 9-pin or 25-pin port on a computer system used by slower I/O devices such as a mouse or modem. Data travels serially, one bit at a time, through the port. Serial ports are sometimes configured as COM1, COM2, COM3, or COM4.

service A program that runs in the background to support or serve Windows or an application.

service pack *See* patch.

Service Set Identifier (SSID) The name of the access point for a wireless network.

session An established communication link between two software programs. On the Internet, a session is created by TCP.

SFC (System File Checker) A Windows tool that checks to make sure Windows is using the correct versions of system files.

shadow RAM or shadowing ROM ROM programming code copied into RAM to speed up the system operation, because of the faster access speed of RAM.

share permissions Allowing access to folders to remote users on the network, including assigning varying degrees of access to specific user accounts and user groups.

shell The portion of an OS that relates to the user and to applications.

shielded twisted pair (STP) cable A cable that is made of one or more twisted pairs of wires and is surrounded by a metal shield.

shortcut An icon on the desktop that points to a program that can be executed or to a file or folder.

sigverif.exe A Windows utility that allows you to search for digital signatures.

SIMD (single instruction, multiple data) A process that allows the CPU to execute a single instruction simultaneously on multiple pieces of data, rather than by repetitive looping.

SIMM (single inline memory module) A miniature circuit board used in older computers to hold RAM. SIMMs holds 8, 16, 32, or 64 MB on a single module.

simple file sharing Sharing folders or files with remote network users where you have no control over who has access to the shared folder or file.

simple volume A type of dynamic volume used on a single hard drive that corresponds to a primary partition on a basic disk.

single channel The memory controller on a motherboard that can access only one DIMM at a time. *Compare to* dual channel and triple channel.

single ranked DIMMs that provide only one 64-bit bank. All memory chips on the DIMM are accessed at the same time. *Compare to* dual ranked.

single-sided Memory chips embedded on only a single side of a DIMM.

site license A license that allows a company to install multiple copies of software, or to allow multiple employees to execute the software from a file server.

slack Wasted space on a hard drive caused by not using all available space at the end of clusters.

sleep timers The various times of inactivity before the computer goes into sleep mode.

SLI (Scalable Link Interface) A technology by NVIDIA that allows for multiple video cards to be installed in the same system. *Compare to* CrossFire.

slimline cases *See* compact case.

smart card Any small device that contains authentication information that can be keyed into a logon window or read by a reader to authenticate a user on a network.

smart card reader A device that can read a smart card used to authenticate a person onto a network.

smart UPS *See* intelligent UPS.

SMTP (Simple Mail Transfer Protocol) The protocol used by e-mail clients and servers to send e-mail messages over the Internet. *Also see* POP and IMAP.

SMTP AUTH (SMTP Authentication) A protocol that is used to authenticate or prove that a client who attempts to use an email server to send email is authorized to use the server. The protocol is based on the Simple Authentication and Security Layer (SASL) protocol.

snap-in A Windows utility that can be installed in a console window by Microsoft Management Console.

social engineering The practice of tricking people into giving out private information or allowing unsafe programs into the network or computer.

socket *See* session.

SO-DIMM (small outline DIMM) A type of memory module used in notebook computers that uses DIMM technology. A DDR3 SO-DIMM has 204 pins. A DDR2 or DDR SO-DIMM has 200 pins. Older, outdated SO-DIMMs can have 72 pins or 144 pins.

soft boot To restart a PC without turning off the power, for example, in Windows XP, by clicking Start, Turn Off Computer, and Restart. *Also called* warm boot.

soft power *See* soft switch.

soft switch A button or switch on an ATX or BTX system that allows an OS to power down the system and a feature that allows for activity such as a keystroke or network activity to power up the system. *Also called* soft power.

software Computer programs, or instructions to perform a specific task. Software may be BIOS, OSs, or applications software such as a word-processing or spreadsheet program.

solid ink printer A type of printer that uses sticks or blocks of solid ink. The ink is melted and then jetted onto the paper as the paper passes by on a drum.

solid state device (SSD) An electronic device with no moving parts. A storage device that uses memory chips to store data instead of spinning disks (such as those used by magnetic hard drives and CD drives). Examples of solid state devices are jump drives (*Also called* key drives or thumb drives), flash memory cards, and solid state disks used as hard drives in notebook computers designed for the most rugged uses. *Also called* solid state disk (SSD) or solid state drive (SSD).

solid state disk (SSD) *See* solid state device (SSD).

solid state drive (SSD) A hard drive that has no moving parts. *Also see* solid state device (SSD).

SO-RIMM (small outline RIMM) A 160-pin memory module used in notebooks that uses Rambus technology.

South Bridge That portion of the chipset hub that connects slower I/O buses (for example, a PCI bus) to the system bus. *Compare to* North Bridge.

spacers *See* standoffs.

spam Junk e-mail you don't ask for, don't want, and that gets in your way.

spanned volume A type of dynamic volume used on two or more hard drives that fills up the space allotted on one physical disk before moving to the next.

spanning Using a spanned volume to increase the size of a volume.

spikes Temporary surges in voltage, which can damage electrical components. *Also called* swells.

spooling Placing print jobs in a print queue so that an application can be released from the printing process before printing is completed. Spooling is an acronym for simultaneous peripheral operations online.

spyware Malicious software that installs itself on your computer to spy on you. It collects personal information about you that it transmits over the Internet to Web-hosting sites that intend to use your personal data for harm.

SRAM *See* static RAM.

SSE (Streaming SIMD Extension) A CPU technology that allows the CPU to receive a single instruction and then execute it on multiple pieces of data. SSE also improves on 3D graphics.

SSE2 An improved version of SSE that has a larger instruction set.

SSE3 A CPU instruction set that improved on the earlier SSE2 instruction set.

SSE4 A CPU instruction set that improved 3D imaging for gaming and improved performance with data mining applications over the earlier SSE3 instruction set.

SSL (secure socket layer) A secure protocol developed by Netscape that uses a digital certificate including a public key to encrypt and decrypt data.

staggered pin grid array (SPGA) A feature of a CPU socket whereby the pins are staggered over the socket in order to squeeze more pins into a small space.

standard account The Vista user account type that can use software and hardware and make some system changes, but cannot make changes that affect the security of the system or other users.

Standard Parallel Port (SPP) An outdated parallel port that allows data to flow in only one direction and is the slowest of the three types of parallel ports. *Also called* a Centronics port. *Compare to* EPP (Enhanced Parallel Port) and ECP (Extended Capabilities Port).

standoffs Round plastic or metal pegs that separate the motherboard from the case, so that components on the back of the motherboard do not touch the case.

startup BIOS Part of system BIOS that is responsible for controlling the PC when it is first turned on. Startup BIOS gives control over to the OS once it is loaded.

startup password *See* power-on password.

stateless Term for a device or process that manages data or some activity without regard to all the details of the data or activity.

static electricity *See* ESD.

static IP address An IP address permanently assigned to a workstation.

static RAM (SRAM) RAM chips that retain information without the need for refreshing, as long as the computer's power is on. They are more expensive than traditional DRAM.

status light indicators Lights on the back of a NIC that indicate connectivity and network activity.

stop error An error at the kernel level that is severe enough to cause the operating system to stop all processes.

striped volume A type of dynamic volume used for two or more hard drives that writes to the disks evenly rather than filling up allotted space on one and then moving on to the next. *Compare to* spanned volume.

strong password A password that is not easy to guess.

stylus A device that is included with a graphics tablet that works like a pencil on the tablet.

subdirectory A directory or folder contained in another directory or folder. *Also called* a child directory or folder.

subnet mask A group of four numbers (dotted decimal numbers) that tell TCP/IP if a remote computer is on the same or a different network.

Super VGA (SVGA) A standard set by the Video Electronics Standards Association (VESA) for a CRT monitor that includes a minimum refresh rate of 70 Hz and a minimum resolution of 800 x 600.

Super VGA (SVGA) monitor A CRT monitor that meets the VESA standard for Super VGA, which includes a resolution of 800 x 600 and a refresh rate of 70 Hz.

surge protector *See* surge suppressor.

surge suppressor A device or power strip designed to protect electronic equipment from power surges and spikes. *Also called* a surge protector.

Surround Sound A sound compression standard that supports up to 10 different speakers, each producing a different sound. Also known Dolby AC-3, Dolby Digital Surround, or Dolby Surround Sound.

S-Video port A 4-pin round video port that sends two signals over the cable, one for color and the other for brightness, and is used by some high-end TVs and video equipment.

swap file A file on the hard drive that is used by the OS for virtual memory. *Also called* a page file.

swells *See* spikes.

switch A device used to segment a network. It can decide which network segment is to receive a packet, on the basis of the packet's destination MAC address.

synchronous DRAM (SDRAM) A type of memory stored on DIMMs that runs in sync with the system clock, running at the same speed as the motherboard.

sysprep.exe A Windows utility that is used to remove configuration settings, such as the computer name, that uniquely identifies the PC from the Windows installation. The installation can then be used to create a drive image for cloning to multiple computers.

system BIOS BIOS located on the motherboard.

system board *See* motherboard.

system bus The bus between the CPU and memory on the motherboard. The bus frequency in documentation is called the system speed, such as 400 MHz. *Also called* the memory bus, front-side bus, local bus, or host bus.

system clock A line on a bus that is dedicated to timing the activities of components connected to it. The system clock provides a continuous pulse that other devices use to time themselves.

System Configuration Utility (Msconfig.exe) A Windows utility that can identify what processes are launched at startup and can temporarily disable a process from loading.

System File Checker (SFC) *See* SFC (System File Checker).

system partition The active partition of the hard drive containing the boot record and the specific files required to load Windows 2000/XP/Vista.

System Restore A Windows XP/Vista utility used to restore the system to a restore point.

system state data In Windows 2000/XP, files that are necessary for a successful load of the operating system.

system tray *See* notification area.

systray *See* notification area.

Task Manager (Taskmgr.exe) A Windows utility that lets you view the applications and processes running on your computer as well as information about process and memory performance, network activity, and user activity.

Task Scheduler A Windows tool that can set a task or program to launch at a future time, including at startup.

taskbar A bar normally located at the bottom of the Windows desktop, displaying information about open programs and providing quick access to others.

TCP (Transmission Control Protocol) Part of the TCP/IP protocol suite. TCP guarantees delivery of data for application protocols and establishes a session before it begins transmitting data.

TCP/IP (Transmission Control Protocol/Internet Protocol) The suite of protocols that supports communication on the Internet. TCP is responsible for error checking, and IP is responsible for routing.

TDMA (Time Division Multiple Access) A protocol standard used by cellular WANs and cell phones.

technical documentation The technical reference manuals, included with software packages and hardware, that provide directions for installation, usage, and troubleshooting. The information extends beyond that given in user manuals.

telephony A term describing the technology of converting sound to signals that can travel over telephone lines.

Telnet A Windows command-line client/server application that allows an administrator or other user to control a computer remotely.

terminating resistor The resistor added at the end of a SCSI chain to dampen the voltage at the end of the chain.

thermal compound A creamlike substance that is placed between the bottom of the cooler heatsink and the top of the processor to eliminate air pockets and to help to draw heat off the processor.

thermal printer A type of line printer that uses wax-based ink, which is heated by heat pins that melt the ink onto paper.

ThickNet *See* 10Base5.

ThinNet *See* 10Base2.

thread Each process that the CPU is aware of; a single task that is part of a longer task or program.

ticket An entry in a call-tracking system made by whoever receives a call for help and used to track and document actions taken. The ticket stays open until the issue is resolved.

TIFF (Tagged Image File Format) A bitmapped file format used to hold photographs, graphics, and screen captures. TIFF files can be rather large, and have a .tif file extension.

time to live (TTL) Number of routers a network packet can pass through on its way to its destination before it is dropped. *Also called* hop count.

TLS (Transport Layer Security) A protocol used to secure data sent over the Internet. It is an improved version of SSL.

top-level domain The highest level of domain names, indicated by a suffix that tells something about the host or network. For example, .com is for commercial use and .edu is for educational institutions.

touch pad The most common pointing device on a notebook; a pad near the keyboard that controls the Windows cursor.

touch screen An input device that uses a monitor or LCD panel as a backdrop for user options. Touch screens can be embedded in a monitor or LCD panel or installed as an add-on device over the monitor screen.

tower case The largest type of personal computer case. Tower cases stand vertically and can be as

high as two feet tall. They have more drive bays and are a good choice for computer users who anticipate making significant upgrades.

TPM (Trusted Platform Module) chip A chip on a motherboard that holds an encryption key required at startup to access encrypted data on the hard drive. Vista BitLocker Encryption can use the TPM chip.

trace A wire on a circuit board that connects two components or devices.

track One of many concentric circles on the surface of a hard drive or floppy disk.

TrackPoint *See* point stick.

transformer A device that changes the ratio of current to voltage. A computer power supply is basically a transformer and a rectifier.

transistor An electronic device that can regulate electricity and act as a logical gate or switch for an electrical signal.

trip hazard Loose cables or cords in a traffic area where people can trip over them.

triple channels When the memory controller accesses three DIMMs at the same time. DDR3 DIMMs support triple channeling.

triple core A processor package that contains three core processors, thus supporting six instructions at once.

Trojan horse A type of infestation that hides or disguises itself as a useful program, yet is designed to cause damage when executed.

TV tuner card An adapter card that receives a TV signal and displays TV on the computer screen.

UART (universal asynchronous receiver-transmitter) A chip that controls serial ports. It sets protocol and converts parallel data bits received from the system bus into serial bits.

UDF (Universal Disk Format) file system *See* Universal Disk Format (UDF) file system.

UDP (User Datagram Protocol) A connectionless protocol that does not require a connection to send a packet and does not guarantee that the packet arrives at its destination. UDP is faster than TCP because TCP takes the time to make a connection and guarantee delivery.

unattended installation A Windows installation that is done by storing the answers to installation questions in a text file or script that Windows calls an answer file so that the answers do not have to be typed in during the installation.

uninterruptible power supply (UPS) *See* UPS (uninterruptible power supply).

Universal Disk Format (UDF) file system A file system for optical media used by all DVD discs and some CD-R and CD-RW discs.

universal serial bus (USB) port *See* USB (universal serial bus) port.

unshielded twisted pair (UTP) cable A cable that is made of one or more twisted pairs of wires and is not surrounded by shielding.

UPS (uninterruptible power supply) A device designed to provide a backup power supply during a power failure. Basically, a UPS is a battery backup system with an ultrafast sensing device.

URL (Uniform Resource Locator) An address for a resource on the Internet. A URL can contain the protocol used by the resource, the name of the computer and its network, and the path and name of a file on the computer.

USB (universal serial bus) port A type of port designed to make installation and configuration of I/O devices easy, providing room for as many as 127 devices daisy-chained together.

USB host controller Manages the USB bus. If the motherboard contains on-board USB ports, the USB host controller is part of the chipset. The USB controller uses only a single set of resources for all devices on the bus.

User Account Control (UAC) dialog box A Vista security feature that displays a dialog box each time a user attempts to perform an action that can be done only with administrative privileges.

user mode In Windows 2000/XP/Vista, a mode that provides an interface between an application and the OS, and only has access to hardware resources through the code running in kernel mode.

user password A power-on password required to view or edit BIOS setup or use the computer. The password is set on a BIOS setup screen.

user profile A personal profile about a user that enables the user's desktop settings and other operating parameters to be retained from one session to another.

user profile namespace The group of folders and subfolders in the C:\Users folder that belong to a specific user account.

User State Migration Tool (USMT) A Windows XP/Vista utility that helps you migrate user files and preferences from one computer to another in order to help a user make a smooth transition from one computer to another.

VGA (Video Graphics Adapter) An outdated VESA standard for CRT monitors.

video capture card An adapter card that captures video input and saves it to a file on the hard drive.

video card An interface card installed in the computer to control visual output on a monitor. *Also called* display adapter or graphics card.

video memory Memory used by the video controller. The memory might be contained on a video card or be part of system memory. When part of system memory, the memory is dedicated by Windows to video.

virtual machine (VM) One or more logical machines created within one physical machine.

virtual memory A method whereby the OS uses the hard drive as though it were RAM. *Compare to* RAM drive.

virtual private network (VPN) A security technique that uses encrypted data packets between a private network and a computer somewhere on the Internet.

virus A program that often has an incubation period, is infectious, and is intended to cause damage. A virus program might destroy data and programs or damage a disk drive's boot sector.

virus encyclopedias Databases about viruses that are kept on the Internet.

virus hoax E-mail that does damage by tempting you to forward it to everyone in your e-mail address book with the intent of clogging up e-mail systems or by persuading you to delete a critical Windows system file by convincing you the file is malicious.

virus signature A set of distinguishing characteristics of a virus used by antivirus software to identify the virus.

Vista Upgrade Advisor An Internet tool that can be run on a PC to determine if an XP system qualifies for Vista.

VoIP (Voice over Internet Protocol) An application that provides voice communication over a network and uses the VoIP protocol. *Also called* Internet telephone.

volatile Refers to a kind of RAM that is temporary, cannot hold data very long, and must be frequently refreshed.

volt (V) A measure of potential difference in an electrical circuit. A computer ATX power supply usually provides five separate voltages: +12V, –12V, +5V, –5V, and +3.3V.

voltage Electrical differential that causes current to flow, measured in volts. *See* volt.

voltage selector switch A switch on a computer power supply used to set voltage to 115 V or 230 V.

voltmeter A device for measuring electrical AC or DC voltage.

volume A primary partition that has been assigned a drive letter and can be formatted with a file system such as NTFS. *Compare to* logical drive.

wait state A clock tick in which nothing happens, used to ensure that the microprocessor isn't getting ahead of slower components. A 0-wait state is preferable to a 1-wait state. Too many wait states can slow down a system.

Wake on LAN Configuring a computer so that it will respond to network activity when the computer is in a sleep state.

WAN (wide area network) A network or group of networks that span a large geographical area.

warm boot *See* soft boot.

watt (W) The unit used to measure power. A typical computer may use a power supply that provides 500W.

wattage Electrical power measured in watts.

WEP (Wired Equivalent Privacy) A data encryption method used on wireless networks that uses either 64-bit or 128-bit encryption keys that are static keys, meaning the key does not change while the wireless network is in use.

Wi-Fi (Wireless Fidelity) *See* IEEE 802.11.

wildcard A * or ? character used in a command line that represents a character or group of characters in a filename or extension.

Windows Anytime Upgrade Upgrading to a better edition of Vista without having to redo the installation.

Windows Boot Loader (WinLoad.exe) One of two programs that manage the loading of Vista. The program file is stored in C:\Windows\System32, and it loads and starts essential Vista processes.

Windows Boot Manager (BootMgr) The Vista program that manages the initial startup of Vista. The BootMgr program file is stored in the C:\ root directory and has no file extension.

Windows Easy Transfer A Windows tool used to transfer Windows XP/Vista user data and preferences to the Windows XP/Vista installation on another computer.

Windows Experience Index A Vista feature that gives a summary index designed to measure the overall performance of a system.

Windows RE *See* Windows Vista Recovery Environment (RecEnv.exe).

Windows Vista Business The Vista edition designed for business users and includes support for a domain, Group Policy, and Encrypted File System, and does not include consumer features such as Movie Maker.

Windows Vista Enterprise The Vista edition that expands on Windows Vista Business, adding security features such as BitLocker Encryption.

Windows Vista Home Basic The Vista edition that is designed for low-cost home systems that don't require full security and networking features. It does not include the Aero glass interface.

Windows Vista Home Premium The Vista edition that includes more features than Windows Vista Home Basic, including the Aero user interface, DVD Maker, Media Center, SideShow, and backups.

Windows Vista Recovery Environment (RecEnv.exe) An operating system launched from the Vista DVD that provides a graphical and command line interface and used to solve problems when Vista will not boot from the hard drive. *Also called* Windows RE.

Windows Vista Starter The Vista edition with the most limited features and intended to be used in developing nations.

Windows Vista Ultimate The Vista edition that includes every Windows Vista feature. Multiple licensing is not available.

Windows XP Home Edition The XP edition that does not include Remote Desktop, multilingual capabilities, roaming profiles, and support for high-end processors.

Windows XP Media Center Edition The XP edition is an enhanced version of XP Professional that includes support for digital entertainment hardware.

Windows XP Professional The XP edition that includes Remote Desktop, roaming profiles, multilingual capabilities and enhanced security features.

Windows XP Tablet PC Edition The XP edition designed for notebooks and tablet PCs.

WINS (Windows Internet Naming Service) A Microsoft resolution service with a distributed database that tracks relationships between NetBIOS names and IP addresses. *Compare to* DNS.

WinSock (Windows Sockets) A part of the TCP/IP utility software that manages API calls from applications to other computers on a TCP/IP network.

wireless LAN (WLAN) A type of LAN that does not use wires or cables to create connections, but instead transmits data over radio or infrared waves.

workgroup In Windows, a logical group of computers and users in which administration, resources, and security are distributed throughout the network, without centralized management or security.

worm An infestation designed to copy itself repeatedly to memory, on drive space or on a network, until little memory, disk space, or network bandwidth remains.

WPA (WiFi Protected Access) A data encryption method for wireless networks that use the TKIP (Temporal Key Integrity Protocol) encryption method and the encryption keys are changed at set intervals while the wireless LAN is in use.

WPA2 (WiFi Protected Access 2) A data encryption standard compliant with the IEEE802.11i standard that uses the AES (Advanced Encryption Standard) protocol. WPA2 is currently the strongest wireless encryption standard.

XPS (XML Paper Specification) A standard introduced with Windows Vista and designed to ultimately replace GDI as the method Windows uses to render a printed page before sending it to the printer.

XPS Document Writer A Vista feature that creates a file with a .xps file extension. The file is similar to a .pdf file and can be viewed, edited, printed, faxed, emailed, or posted on Web sites.

zero insertion force (ZIF) socket A socket that uses a small lever to apply even force when you install the microchip into the socket.

zero-fill utility A utility provided by a hard drive manufacturer that fills every sector on the drive with zeroes.